

**DEPARTMENT OF  
COMPUTER SCIENCE & APPLICATIONS**

**BRIDGE COURSES**



**Pingle Govt. College for Women (A), Waddepally**  
**AUTONOMOUS**  
HANUMAKONDA -506370, TELANGANA

# BRIDGE COURSES

A bridge course is a type of educational program that helps students transition from one educational level to another. Bridge courses typically provide students with the skills and knowledge they need to be successful in their new educational setting.

There are many different types of bridge courses available, and they can be designed to meet the needs of individual students. Some courses focus on preparing students for a particular subject, while others offer workshops or classes that cover study skills and time management techniques.



## Objectives:-

Bridge courses provide an adequate foundation in the core applied science subject. Hence students do not face any difficulties when college programs begin. This course offers a superior growth stage for students to get themselves up before starting the first semester.

They would concentrate on studies to overcome barriers between subjects taught at the pre-college level. Additionally, they will learn some of the topics in college previously.

The bridge course serves as a cradle for the new path. Before beginning the main year course, it will equip students with information. Furthermore, it will also provide certainty through interactive and dynamic learning.

Every Department is in charge of running its system by creating its syllabus. The bridge course is merely a starting point, not a destination. Institutions must follow up the bridge course regularly.

## ABSTRACT OF BRIDGE COURSES

SNO	Name Of The Faculty	Subject	Class	Duration	No. of Participants
1	P. Bharathi T. Aruna	Introduction to Python	MPCS/BZCS	07-02-2023 to 05-03-2023	90
2	P. Prathibha B. Swarnalatha	Fundamentals Of Information Technology	BCOM(CA) & BSC(MSTDS)	01-12-2022 to 10-01-2023	81
3	B. Swarnalatha T. Aruna	Introduction To Computers	BSC(MPCS)	14-12-2022 to 31-01-2023	86
4	B. Swarnalatha P. Bharathi	Basic Computer Skills	BSC(BZCS) & BSC(MSTCS)	15-11-2022 to 28-12-2022	50
5	T. Aruna	Basics of Computers and Power point	BCOM	02-03-2021 to 20-03-2021	90
6	P. Prathibha	Python Programming	BSC(MPCS) MCCS)	25-02-2021 to 20-03-2021	98

## ABSTRACT OF BRIDGE COURSE (2022-2023)

SNO	Name Of The Faculty	Subject	Class	Duration	No. of Participants
1	P. Bharathi T. Aruna	Introduction to Python	MPCS/BZCS	07-02-2023 to 05-03-2023	90
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3	B. Swarnalatha T. Aruna	Introduction To Computers	BSC(MPCS)	14-12-2022 to 31-01-2023	86

**BRIDGE COURSE**

**ON**

**INTRODUCTION TO PYTHON PROGRAMMING**

**From**

**7<sup>th</sup> FEBRUARY, 2022 to 5<sup>th</sup> MARCH, 2023**

## BROCHURE

### ABOUT THE WORKSHOP

"Introduction to Python" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanamakonda, on 07<sup>th</sup> February, 2023. The Aim of the workshop is to provide fundamental knowledge about Programming language and Python Programming. The faculty and students of department of computers attend the workshop.

### Python Introduction

Python Introduction  
Python features  
Python Applications  
Getting started in python  
Programming in Immediate mode  
Programming in script mode  
input statements  
output statements



### Introduction to Python Programming

1. Comments
2. Arithmetic Operators
3. Variables
4. Data Type
5. Input/Output
6. Boolean Operators
7. Lists
8. Tuples
9. Strings
10. Manipulating Strings
11. Flow control: For Loops and While Loops
12. Dictionaries and Structuring Data
13. Exceptions
14. Functions
15. Namespace
16. Read and Write Files
17. Sets
18. Introduction to IoT using Python and Cisco Packet Tracer

Prof. B. ChandraMouli , Principal

### ORGANIZING COMMITTEE:

**Conveners** : B. Swarnalatha  
: P. Prathibha  
: T. Aruna  
**MEMBERS** : P. Bharathi

**Seminar hall (Room. No: 47)**

### ABOUT THE COLLEGE



Pingle Govt. College for Women (Autonomous), Waddepally, Hanamakonda has an illustrious and developmental history. It started with pre-university courses in Arts, Commerce and Science in the building donated by Pingle family in 1965. Since then it witnessed continuous and consistent development in expanding the courses, At present college is providing 17 U.G. and 10 P.G. courses and Certificate courses and one Add on Course, sponsored by UGC in Diploma in Front Office Management

Pingle Govt. College for Women(Autonomous), Waddepally, Hanamakonda has introduced the computer courses in the year 1998 with B.Sc Mathematics, Physics and Computer science combination. In the immediate successive year, i.e, (1998 - 1999) Computer course with B.A and B.Com classes also were introduced. Since then there has been a study and evident development of the department. Currently the courses are B.Sc (Phy. Sci.) as MPSC, MCCS, MSCS, B.Com (CA), and BSC (Life Sci. with CS) & with new courses B.Sc Data Science

### BRIDGE COURSE

ON  
INTRODUCTION TO PYTHON  
PROGRAMMING LANGUAGE  
07<sup>TH</sup> FEBRUARY, 2023  
TO  
05<sup>TH</sup> MARCH , 2023



Organized by

**DEPARTMENT OF COMPUTER  
SCIENCE & APPLICATIONS**

**PINGLE GOVERNMENT COLLEGE FOR  
WOMEN(AUTONOMOUS)  
WADDEPALLY, HANAMKONDA  
(Accredited with 'A' Grade by NAAC)**

### COURSES OFFERED

#### Under Graduation

- B.Sc.(Maths, Physics, Computer Science)
- B.Sc.(Maths, Statistics Computer Science)
- B.Sc.(Maths, Statistics ,Data Science)
- B.Sc.(Maths, Chemistry, Computer Science)
- B.Sc.(Botany, Zoology, Computer Science)
- B.Sc.(Microbiology, Zoology, Computer Science)
- B.Com.(Computer Applications)

### HIGHLIGHTS OF DEPARTMENT

#### ABOUT THE COLLEGE:

- Outcome Based Education
- Focus on programming hands-on
- Online Teaching Assistance through Video Lectures
- Motivation for Self learning initiatives
- Well defined student Counseling and Mentoring process
- Maintaining e-Library using QR CODES
- Well defined Teaching- Learning Process with use of Technology Based Teaching Methodologies
- Value added course such as IOT, BIGDATA, CLOUD COMPUTING, PYTHON are regularly offered to students with Online Platforms Spoken Tutorial, Coursera , Edx etc

COLLEGE WEBSITE:

<https://gdets.cgg.gov.in/hanamkondawomen.edu>



# Introduction to Python Programming

## Table of Content:

1. Introduction
2. Parts of Python Programming Language
3. Control Flow Statements
4. Functions
5. Strings
6. Lists
7. Dictionaries
8. Tuples and Sets
9. Files

## What is Python?

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.

It is used for:

- web development (server-side),
- software development,
- mathematics,
- System scripting.

## What can Python do?

- Python can be used on a server to create web applications.
- Python can connect to database systems. It can also read and modify files.
- Python can be used to handle big data and perform complex mathematics.
- Python can be used for rapid prototyping, or for production-ready software development.

## Why Python?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- Python has a simple syntax similar to the English language.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written.
- Python can be treated in a procedural way, an object-oriented way or a functional way.

## Python Syntax compared to other programming languages

- Python was designed for readability, and has some similarities to the English language with influence from mathematics.
- Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.
- Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

## Execute Python Syntax

```
>>> print("Hello, World!")
```

Indentation : Indentation refers to the spaces at the beginning of a code line.

Where in other programming languages the indentation in code is for readability only, the indentation in Python is very important.

Python uses indentation to indicate a block of code.

```
if 5 > 2:
```

```
    print("Five is greater than two!")
```

Python Conditions and If statements

Python supports the usual logical conditions from mathematics:

- Equals: a == b
- Not Equals: a != b
- Less than: a < b
- Less than or equal to: a <= b
- Greater than: a > b
- Greater than or equal to: a >= b

**Example:**

```
a = 33
```

```
b = 200
```

```
if b > a:
```

```
    print("b is greater than a")
```

**Functions**

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function. A function can return data as a result.

**Creating a Function**

In Python a function is defined using the `def` keyword:

```
def my_function():
```

```
    print("Hello from a function")
```

**Calling a Function**

To call a function, use the function name followed by parenthesis:

**Example:**

```
def my_function():
```

```
    print("Hello from a function")
```

```
my_function()
```

Python Strings

**Strings**

Strings in python are surrounded by either single quotation marks, or double quotation marks.

'hello' is the same as "hello".

**Example:**

```
print("Hello") print('Hello')
```

Assign String to a Variable

```
a = "Hello"
```

```
print(a)
```

**Multiline Strings:**

You can assign a multiline string to a variable by using three quotes:

```
a = """Hello World,
```

```
Welcome to."""
```

```
print(a)
```

**List**

- Lists are used to store multiple items in a single variable.
- Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are [Tuple](#), [Set](#), and [Dictionary](#), all with different qualities and usage. Lists are created using square brackets:



## **Create a List:**

```
thislist = ["apple", "banana", "cherry"]
```

```
print(thislist)
```

## **List Items**

- List items are ordered, changeable, and allow duplicate values.
- List items are indexed, the first item has index [0], the second item has index [1] etc.

## **Ordered**

When we say that lists are ordered, it means that the items have a defined order, and that order will not change. If you add new items to a list, the new items will be placed at the end of the list.

## **Changeable**

The list is changeable, meaning that we can change, add, and remove items in a list after it has been created.

## **Allow Duplicates**

Since lists are indexed, lists can have items with the same value:

Lists allow duplicate values:

```
thislist = ["apple", "banana", "cherry", "apple", "cherry"]
```

```
print(thislist)
```

## **Collections (Arrays)**

There are four collection data types in the Python programming language:

- **List** is a collection which is ordered and changeable. Allows duplicate members.
- **Tuple** is a collection which is ordered and unchangeable. Allows duplicate members.
- **Set** is a collection which is unordered, unchangeable\*, and unindexed. No duplicate members.
- **Dictionary** is a collection which is ordered\*\* and changeable. No duplicate members.



**Hands on Practice:**



## Certificate



# PINGLE GOVT. COLLEGE FOR WOMEN (A) WADEPPALLY, HANUMAKONDA

**DEPARTMENT OF COMPUTER SCIENCE & APPLICATION**

## **CERTIFICATE**

This is to certify that Mr. / Mrs. \_\_\_\_\_ student of  
**PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA** has  
successfully attended Bridge Course on “**INTRODUCTION TO PYTHON  
PROGRAMMING**” Organized by Department of Computer Science and Application  
Conducted on 7<sup>th</sup> FEBRUARY 2023 to 5<sup>th</sup> MARCH, 2023

**Dr. D. Suresh Babu**  
**CONVENER**

**Prof. B. Chandramouli**  
**PRINCIPAL**

**BRIDGE COURSE**

**ON**

**FUNDAMENTALS OF  
INFORMATION TECHNOLOGY**

**From**

**01<sup>st</sup> DECEMBER, 2022 to 10<sup>th</sup> JANUARY, 2023**

## BROCHURE:

### ABOUT THE WORKSHOP

"Fundamentals of information Technology" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda, on 01<sup>ST</sup> December, 2022. The Aim of the workshop : At the end of this course, student should be able to

- Understand basic concepts and terminology of information technology.
- Have a basic understanding of personal computers and their operations.
- Be able to identify issues related to information security..



Prof. B. ChandraMouli , Principal

#### ORGANIZING COMMITTEE:

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: P. Prathibha  
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**BRIDGE COURSE  
ON  
FUNDAMENTALS OF INFORMATION  
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01<sup>ST</sup> DECEMBER , 2022.  
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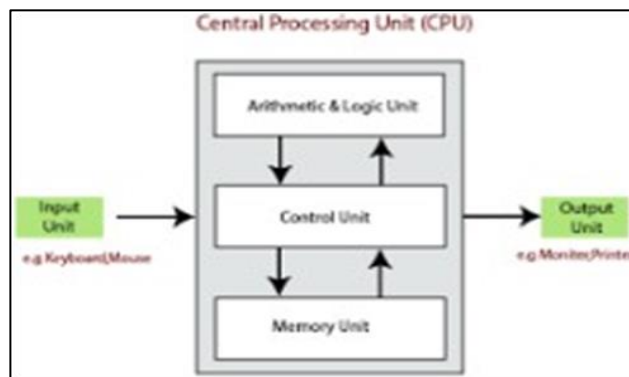
# FUNDAMENTALS OF COMPUTERS

## Table of Contents

1. COMPUTER FUNDAMENTALS
2. COMPUTER APPLICATIONS
3. COMPUTER GENERATIONS
4. COMPUTER TYPES
5. COMPONENTS THE COMPUTER
6. CENTRAL PROCESSING UNIT
7. INPUT DEVICES
8. OUTPUT DEVICES
9. MEMORY
10. NUMBER SYSTEM

## What is computer? Draw and explain Block diagram of computer.

Computer is an electronic device, which takes data from you through the input device and processes data according to the instructions given by the user and shows the result on output device. **CENTRAL PROCESSING UNIT**



**INPUT UNIT:** It is used to send input data to the computer and it is connected to C.P.U.

Alphabet, Digits, Special characters, etc... that you provide to computers is provided through Input Unit. Eg: Key Board, Mouse, Joystick, etc...

**C.P.U.:** C.P.U. stands for Central Processing Unit. It carries the task for processing. It can also be called the heart or brain of the computer. It consists of A.L.U., C.U. and Memory Unit.

**A.L.U.:** A.L.U. stands for Arithmetic Logical Unit. It performs arithmetic operations like addition, subtraction, multiplication, division and percentage. Comparisons and assignments are logical operations like

**Control Unit:** It performs internal management functions of computers. It transfers the data and instructions from input to primary memory.

It transfers data from primary memory to A.L.U. and back.

It is responsible for taking results from memory to output. So, it controls the processing and H/W devices.

**Memory Unit:** It can store the data. It is a storage area. It has two subunits.

(I) Primary Memory (II) Secondary Memory

**I) Primary Memory:** It is a temporary storage place. Whatever information given to the computer comes into primary memory, get stored there, and then they get processed. Similarly, the result of processing also gets stored in primary memory. As soon as the power is switched off, its contents get lost that's why it is called temporary memory.

Primary memory is divided into two types: a) RAM b) ROM

**a) RAM:** Random Access Memory.

i) It is read and write memory.

ii) It is a volatile memory (i.e. Erasable memory).

iii) It does not have necessary commands to start the computer.

**b) ROM:** Read Only Memory.

i) In this we can read the data, we cannot write the data.

ii) It is non-volatile memory (Non-erasable memory).

**II) Secondary Memory:** This is supporting memory. It can store data permanently.

Eg: Floppy disks, CD's, DVD's, Hard Disks, etc...

**OUTPUT UNIT:** The information that is received from the computer is an output. The device used for receiving output is known as output device.

Eg: Monitors, Printers, Plotters, Speakers, etc...

### **Characteristics of Computer.**

Computer is an electronic device. It can take the data from input device and store the data, process the data with the help of instructions given by the user and shows the result on Output device.

1. **Speed:** The rate at which Computer process the instructions per second is defined as speed of Computer. Computer processes the data at an unimaginable speed. The speed of the computer ranges up to Nano seconds. Computer can calculate mathematical and logical calculations at a very fast speed. This is equivalent to the traveling speed of a light.

2. **Storage:** Computers can store large amount of data in a secured way. It is of two types

**Primary Memory:** The memory, which computer uses for its internal use, is called Primary Memory. It is also called as Internal Memory.

**Secondary Memory:** Secondary Memory stores data permanently and it can hold large amount of data.

3. **Accuracy:** Usually computers do not make mistakes. While computing due to human mistakes like wrong formulae, wrong methodology inaccurate results may raise. But computers always process with high accuracy. It performs calculations with greater accuracy in less time.

4. **Diligence:** It means being constant and earnest in effort and application. Computer can able to perform same task continuously.

5. **Versatility:** Computers are very versatile machines and are capable of performing multi tasks. Computers can perform a variety of jobs like generating bills, pay rolls etc with high speed and accuracy.

**Types of computers:** Computers are divided into four types:

i) Micro Computers

ii) Mini Computers

iii) Main Frame Computers

iv) Super Computers

**i) Micro Computers:** These computers are smallest category of computers. These computers consist of Microprocessors hence these computers are called *Micro Computers*.

Eg: Micro Computers again two types: a) Personal Computers b) Lap top Computers

**a) Personal Computer:** It can perform variety types of tasks and at a given point of time only one user can work on them.

**b) Lap top Computer:** These computers are very small in size. It's like a briefcase. They work on battery backup.

**ii) Mini Computers:** *Mini computers* are larger and faster than *Micro Computers*. They are designed to create multi user environment. They possess larger storage capacity and larger memory.

Eg: PDP-II, VAX, etc...

**iii) Main Frame Computers:** These are still larger variety of Digital Computers. They use their own circuits. This circuit is specially designed for connecting more than one terminal (Key Board, Monitor, etc...), faster speed, handling large amount of data. They are big in size and provide facility for connecting *Micro Computers* with them. Eg: DEC 20, IBM370, etc...

**iv) Super Computers:** *Super computers* are largest category of computers. They are designed to work with multiple *Micro Processors* so that parallel processing done. *Super Computers* are used in weather forecasting, nuclear weapon design, etc...

Eg: CRAY, XMP24, NEC500, etc...

**Types of Memories:**

**Memory:** Memory is a storage area, where we can store data.

There are two types of memories: i) Primary Memory ii) Secondary Memory

**i) Primary Memory:** The memory, which computer uses for its internal use, is called *Primary Memory*. It is also called as *Internal Memory*. Computing capacity is faster.

Primary Memory is two types: a) Read Only Memory (ROM) b) Random Access Memory (RAM)

**a) ROM:** The memory in which, only read operations are made possible are called *Read Only Memory*. Computer cannot write anything on it. Contents of ROM are written in it by a special device. It is Non Erasable Memory. It is Permanent Memory.

**PROM:** Programmable Read only Memory .This memory is created by developer, we cannot erase data from this and we cannot add data into this memory.

**EPROM:** Erasable Programmable Read only Memory. We can add data into this memory and we can erase data from this memory. To delete data from this memory we can use special tools (UV Rays).

**EEPROM:** Electrically Erasable Programmable Read only Memory. It removes the drawback of EPROM. It erase portion of the ROM also . Under this technology instead of using UV Light electric charge can be used

**b) RAM:** It stands for Random Access Memory. It is Writable Memory. In this computer can write data and instructions. It is Erasable Memory. It is Temporary Memory, because whenever power goes off then its contents gets lost.



**RAM is two types: SRAM** – It stands for Static Random Access Memory. Flip flops are used for retaining memory by SRAM. Four to six transistors are used by flip flops for a memory cell. This memory can store information till the power supply is on. This memory is faster than DRAM and is expensive. These are mainly used in processor's cache memory. It does not require refreshing, as it is quite faster in comparison to some other types.

**DRAM** – It stands for Dynamic Random Access Memory. It makes use of a transistor and a capacitor to form a memory cell standing for a single bit of data. They are not able to retain information for a longer time even if the power supply is on throughout. Therefore, it needs refreshing dynamically, and therefore is known as the dynamic type of memory. This is the most common type of computer memory.

**Cache memory**: The Cache memory is the Volatile computer memory which is very nearest to the CPU so also called CPU memory, all the recent instructions are stored into the cache memory. It is the fastest memory that provides high speed data access to a computer processor

The memory is measured in terms of bits, bit means binary digit.

1 nibble = 4 bytes, 1 byte = 8 bits, 1 KB = 1024 bytes, 1 MB = 1024 kbs, 1 GB = 1024 mbs

### **Number system and types of number system**

- The number system is a way to represent or express numbers.
- a number System defines how a number can be represented using distinct symbols.
- Many number system were introduced with the passage of time like:
  1. Decimal Number System
  2. Binary Number System
  3. Octal Number System
  4. Hexadecimal Number System

### **Decimal Number System (Base-10)**

- This number system has ten digits (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) so its base is 10.
- In this number system, the maximum value of a digit is 9 and the minimum value of a digit is 0.
- As it uses 10 digits to represent a number, it is also called the **base 10 number system**.
- The position of each digit in the decimal number represents a specific power of the base (10) of the number system.
- This number system is widely used in our day to day life.
- It can represent any numeric value.

### **Binary Number System (Base 2)**

- A computer can understand only the “on” and “off” state of a switch.
- These two states are represented by 1 and 0.
- The combination of 1 and 0 form binary numbers.
- As two digits are used to represent numbers, it is called a **binary** or **base 2 number system**.

- Binary number system is also positional value system, where each digit has a value expressed in **powers of 2**.

### **Octal Number System (Base 8):**

- This system uses digits 0 to 7 (i.e. 8 digits) to represent a number and the numbers are as a base of 8.
- Each digit in an octal number represents a specific power of its base (8).

### **Hexadecimal Number System (Base 16)**

- In this system, 16 digits are used to represent a given number. Thus it is also known as the **base 16 number system**.
- Each digit position represents a power of 16.
- As the base is greater than 10, the number system is supplemented by letters.
- Hexadecimal symbols: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

Name	Base	Symbols	Example
Decimal	10	0,1,2,3,4,5,6,7,8,9	(2795) <sub>10</sub>
Binary	2	0,1	111000010
Octal	8	0,1,2,3,4,5,6,7	(1576) <sub>8</sub>
Hexadecimal	16	0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F	3DB

### **Boolean algebra and Boolean laws**

- Boolean algebra is used to analyze and simplify the digital (logic) circuits.
- It uses only the binary numbers i.e. 0 and 1.
- It is also called as Binary Algebra or logical Algebra.
- Boolean algebra was invented by George Boole in 1854.

**Boolean Laws:** There are six types of Boolean Laws.

**Commutative law:** Any binary operation which satisfies the following expression is referred to as commutative operation.

**Associative law:** This law states that the order in which the logic operations are performed is irrelevant as their effect is the same.

**Distributive law:** Distributive law states the following condition.

**AND law:** These laws use the AND operation. Therefore they are called as **AND** laws.

$$\begin{array}{ll} \text{(i) } A \cdot 0 = 0 & \text{(ii) } A \cdot 1 = A \\ \text{(iii) } A \cdot A = A & \text{(iv) } A \cdot \bar{A} = 0 \end{array}$$

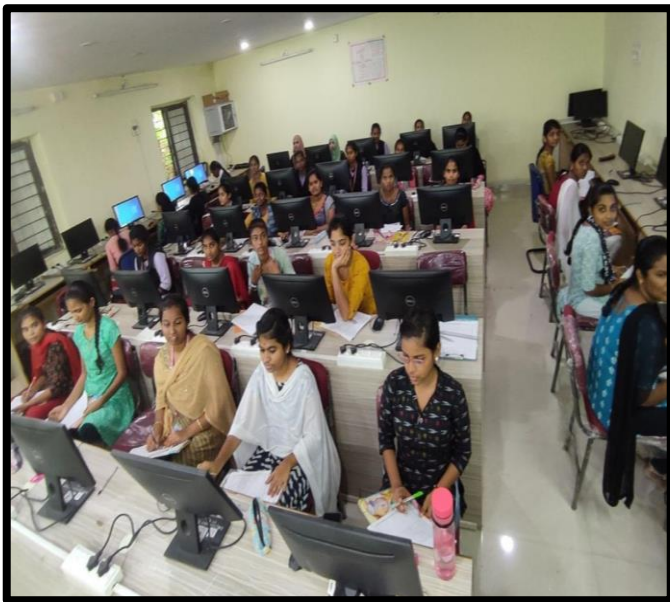
**OR law:** These laws use the OR operation. Therefore they are called as **OR** laws.

$$\begin{array}{ll} \text{(i) } A + 0 = A & \text{(ii) } A + 1 = 1 \\ \text{(iii) } A + A = A & \text{(iv) } A + \bar{A} = 1 \end{array}$$

**INVERSION law**



**Hands on Practice:**



**Test:**



## Certificate:



# PINGLE GOVT. COLLEGE FOR WOMEN (A) WADEPPALLY, HANUMAKONDA

## DEPARTMENT OF COMPUTER SCIENCE & APPLICATION CERTIFICATE

This is to certify that Mr. / Mrs. \_\_\_\_\_ student of  
PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA has  
successfully attended Bridge Course on “ FUNDAMENTALS OF  
INFORMATION TECHNOLOGY” organized by Department of Computer  
Science and Application Conducted on 1<sup>st</sup> DECEMBER, 2022 to 10<sup>th</sup>  
JANUARY, 2023

Smt. T. Aruna  
CONVENER

Prof. B. Chandramouli  
PRINCIPAL

**BRIDGE COURSE**

**ON**

**INTRODUCTION TO COMPUTERS**

**From**

**14<sup>th</sup> DECEMBER, 2022 to 31<sup>st</sup> JANUARY, 2023**

## BROCHURE

### ABOUT THE WORKSHOP

"Introduction to computers" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda, on 14<sup>TH</sup> December, 2022. The Aim of the workshop : At the end of this course, student should be able to

- Understand basic concepts and terminology of information technology.
- Have a basic understanding of personal computers and their operations.
- Be able to identify issues related to information security.

### Intro to Computers Objectives

Recognize the importance of computer literacy	Distinguish between system software and application software
Define the term, computer	Describe the categories of computers
Identify the components of a computer	Identify the elements of an information system
Discuss the advantages and disadvantages of using computers	Describe the various types of computer users
Recognize the purpose of a network	Discuss various computer applications in society
Discuss the uses of the Internet and World Wide Web	

Prof. B. ChandraMouli , Principal

### ORGANIZING COMMITTEE:

**Conveners** : B. Swarnalatha  
: P. Prathibha  
: T. Aruna

**MEMBERS** : P. Bharathi

**Seminar hall** (Room. No: 47)

### ABOUT THE COLLEGE



Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda has an illustrious and developmental history. It started with pre-university courses in Arts, Commerce and Science in the building donated by Pingle family in 1965 . Since then it witnessed continuous and consistent development in expanding the courses, At present college is providing 17 U.G. and 10 P.G. courses and Certificate courses and one Add on Course, sponsored by UGC in Diploma in Front Office Management

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### BRIDGE COURSE

ON  
INTRODUCTION TO COMPUTERS  
14<sup>TH</sup> DECEMBER , 2022.  
TO  
31<sup>ST</sup> JANUARY ,2023



Organized by

**DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS**

**PINGLE GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS) WADDEPALLY, HANAMKONDA**  
(Accredited with 'A' Grade by NAAC)

### COURSES OFFERED

#### Under Graduation

- B.Sc.(Maths, Physics, Computer Science)
- B.Sc.(Maths, Statistics Computer Science)
- B.Sc.(Maths, Statistics ,Data Science)
- B.Sc.(Maths, Chemistry, Computer Science)
- B.Sc.(Botany, Zoology, Computer Science)
- B.Sc.(Microbiology, Zoology, Computer Science)
- B.Com.(Computer Applications)

### HIGHLIGHTS OF DEPARTMENT

#### ABOUT THE COLLEGE:

- Outcome Based Education
- Focus on programming hands-on
- Online Teaching Assistance through Video Lectures
- Motivation for Self learning initiatives
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#### COLLEGE WEBSITE:

<https://gdcts.cgg.gov.in/hanamkondawomen.edu>



# FUNDAMENTALS OF INFORMATION TECHNOLOGY-(FIT)

## Introduction to Computer

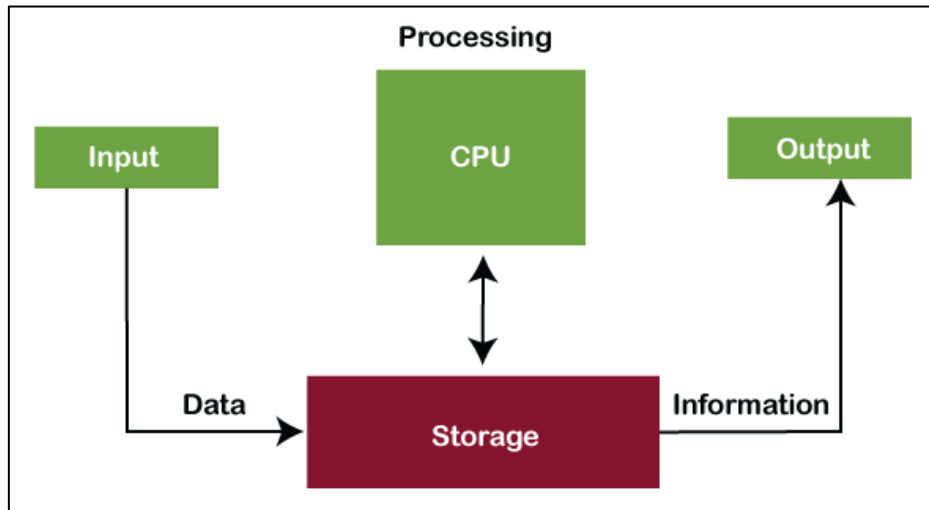
In the modern era, computers are an essential part of our everyday existence. That means computers are present in almost every field, making our day-to-day tasks easier and faster. Nowadays, computers can be seen in banks, shops, schools, hospitals, railways, and many more places, including our home. As they are such an essential part of our lives, we must know about the basic computer introduction.

## What is a Computer?

They can perform a variety of tasks. In simple terms, a computer is a programmable electronic machine used to store, retrieve, and process data.

According to the definition, "**A computer is a programmable electronic device that takes data, perform instructed arithmetic and logical operations, and gives the output.**"

Whatever is given to the computer as input is called 'data', while the output received after processing is called 'information'.



Fundamentals of Information Technology (FIT): - The information technology, which is exclusively designed to store, process and transmit information, is known as Fundamentals of Information Technology.

- Charles Babbage is called the "Father of the computer".
- The First mechanical computer designed by Charles Babbage was called [Analytical Engine](#).
- It uses read-only memory in the form of punch cards.

**Data**: - Data is a collection of raw facts. Which does not have perfect meaning is called as a data. It refers such as numbers, Characters, Symbols, images, videos, Audios, etc.

**Process**: - Process is the manipulation of data. It includes.

- 1) Calculations
- 2) Comparison
- 3) Logical Operations
- 4) Decision making

**Information**: - Information is the processed data. Which will have perfect meaning is called as Information. It refers such as numbers, Characters, Symbols, images, videos etc...

## **CHARACTERISTICS OF COMPUTER:**

The characteristics of computers that have made them so powerful and universally useful, although the computers are of various types depending on their size and capacity but all the computers have some common characteristics.

- 1) Speed
- 2) Accuracy
- 3) Storage Capacity
- 4) Diligence
- 5) Versatility

### **Block Diagram of Computer:**

**Input Unit:-** The data given to the system (or) Fed the data into the computer system CPU (Central Processing System) is called as a computer input.

### **Central Processing System (CPU):-**

CPU is also called as heart of the computer, all major calculations; comparisons are made inside the CPU. CPU is divided into 3 units.

- 1) Arithmetic Logic Unit
- 2) Control Unit
- 3) Memory Unit

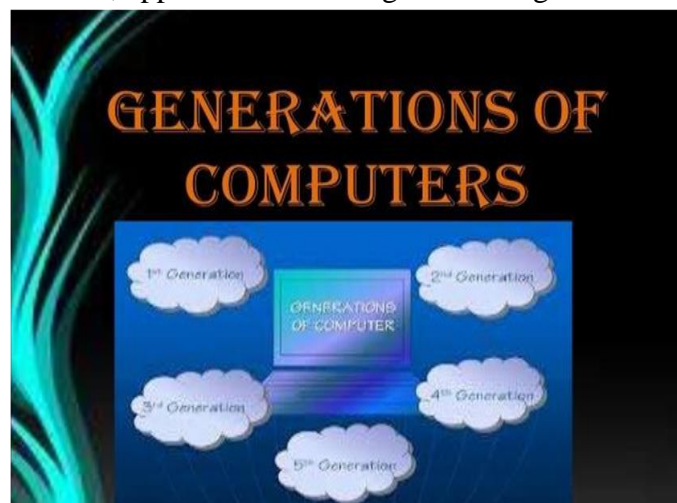
### **Output Unit: -**

The information taken from the CPU is called as an output. An output device is any hardware device used to send data from a computer to another device or user, it is processed data.

## **GENERATIONS OF COMPUTERS:**

Generation in computer terminology is a change in technology a computer being used. Initially, the generation term was used to distinguish between varying hardware technologies. Nowadays, generation includes both hardware and software.

There are five computer generations known till date. Each generation has been discussed in detail along with their time period and characteristics, approximate dates against each generation have been mentioned.



### **1) FIRST GENERATION OF COMPUTERS (1942-1954)**



The computers of first generation used vacuum tubes as the basic components for memory and circuitry for CPU (Central Processing Unit). These tubes, like electric bulbs, produced a lot of heat and the installations used to fuse frequently. Therefore, they were very expensive and only large organizations were able to afford it. Punch cards, paper tape, and magnetic tape was used as input and output devices. The computers in this generation used machine code as the programming language.

The main features of First Generation are:-

- Vacuum tube technology
- Supported Machine language only
- Very costly
- Generate lot of heat
- Slow Input / Output device
- Huge size
- Need of A.C.
- Consumed lot of electricity



## 2) **SECOND GENERATION OF COMPUTERS (1954-1964)**

In this generation, transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines made of vacuum tubes. In this generation, magnetic cores were used as the primary memory and magnetic tape and magnetic disks as secondary storage devices. In this generation, assembly language and high-level programming languages like FORTRAN, COBOL was used. The computers used batch processing and multiprogramming operating system.



The main features of second generation are:-

- Use of transistors
- Smaller size as compared to First generation computers
- Generate less heat as compared to First generation computers
- Consumed less electricity as compared to First generation computers
- Faster than first generation computers
- Still very costly, A.C. needed
- Support machine and assembly languages

## 3) **THIRD GENERATION OF COMPUTERS (1964-1972)**

The computers of third generation used Integrated Circuits (ICs) in place of transistors. A single IC has many transistors, resistors, and capacitors along with the associated circuitry. This development made computers smaller in size, reliable, and efficient. In this generation remote processing, time-sharing, multiprogramming operating system was used. High-level languages (FORTRAN-II TO IV, COBOL, PASCAL PL/1, BASIC, ALGOL-68 etc.) were used during this generation.



The main features of third generation are:-

- IC used
- More reliable
- Smaller size
- Generate less heat
- Faster
- Lesser maintenance
- Still costly

- A.C needed
- Consumed lesser electricity
- Support high level language

#### 4) FOURTH GENERATION OF COMPUTERS (1972-1990)

The fourth generation of computers used Very Large Scale Integrated (VLSI) circuits. VLSI circuits having about 5000 transistors and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generation. Fourth generation computers became more powerful, compact, reliable, and affordable. All the high- level languages like C, C++, DBASE etc., were used in this generation.



The main features of fourth generation are:-

- VLSI technology used
- Portable and reliable
- Use of PC's
- Very small size
- No A.C. needed
- Concept of internet was introduced
- Great developments in the fields of networks

#### 5) FIFTH GENERATION OF COMPUTERS (1990-till date)

In the fifth generation, VLSI technology became ULSI (Ultra Large Scale Integration) technology, resulting in the production of microprocessor chips having ten million electronic components.

This generation is based on parallel processing hardware and AI (Artificial Intelligence) software.



AI includes:-

- Robotics
- Neural Networks
- Game Playing
- Development of expert systems to make decisions in real-life situations
- Natural language understanding and generation

The main features of fifth generation are:-

- All the Higher level languages like C and C++, Java, .Net etc. are used in this generation.
- Robotics
- All the Higher level languages like C and C++, DBASE etc. were used in this generation.
- Game Playing
- Development of expert systems to make decisions in real life situations.
- Natural language understanding and generation.

## **APPLICATIONS OF COMPUTER:**

Computer can be used in various fields as the functionality of the computers has been increased. Different fields in which computer is being used are given below.

### **1) Business:-**

Business people and organizations use computers for different purposes. Business clearly sees the interest as a way to enhance productivity and competitiveness. The world of cyber cash has come to banking – not only smart cards but internet banking, electronic deposit, bill paying, online stock and bond trading, etc.

### **2) Education:-**

In the field of education computer can be used for interactive learning students can learn something easily using computer based tutors. Getting the right kind of **information** is a major challenge as is getting information to make sense. College students spend an average of 5-6 hours a week on the **internet**. Research shows that computers can significantly enhance performance in learning. Students exposed to the internet say they think the web has helped them improve the quality of their academic research and of their written work

### **3) Medicine & Health care:-**

Computer technology is radically changing the tools of medicine. All medical information can now be digitized. Software is now able to **computer** the risk of a disease. Mental health researchers are using computers to screen troubled teenagers in need of psychotherapy. A patient paralyzed by a stroke has received an implant that allows communication between his brain and a computer; as a result, he can move a cursor across a screen by brainpower and convey simple messages. Several medical applications use computers for storing, scanning reports and analysis of scanning etc.

### **4) Science and Engineering:-**

Scientists have long been users of it. A new adventure among scientists is the idea of a “collaborator”, an internet based collaborative laboratory, in which researchers all over the world can work easily together even at a distance.

### **5) Manufacturing:-**

Computer has increased its role in the field of manufacturing. They are used for automated operation of machines. Computers compile statistics, sell tickets, create training programs and diets for athletes, and suggest game plan strategies based on the competitor’s past performance.

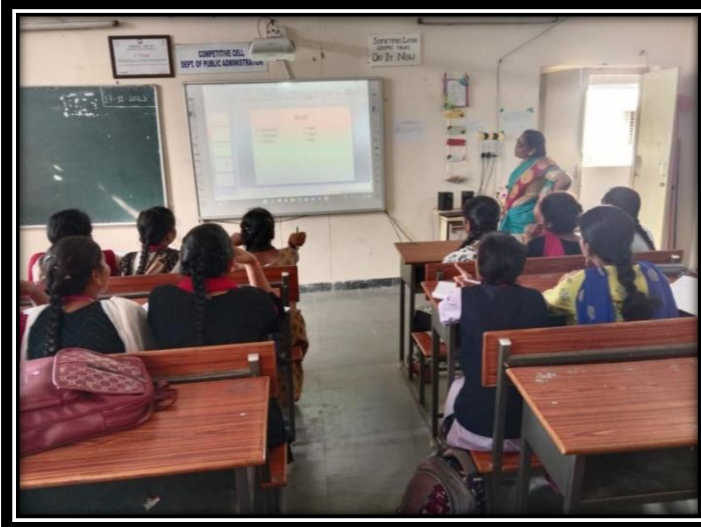
### **6) Music:-**

Computer can be used to play music and the can be used for editing sounds. In movies, computer generated graphics give freedom to designers so that special effects and even imaginary characters can play a part in making movies, videos, and commercials.

### **7) Multimedia:-**

Computer can be used to design multimedia applications and also to play them. Now-a-days most of the games and web applications use multimedia.

**8) Internet:** - Computers across the globe can be connected by internet. It allows E-mails, chatting and sharing resources among the users of computers.



**Hands on Practice:**



## Certificate:



# PINGLE GOVT. COLLEGE FOR WOMEN (A) WADEPPALLY, HANUMAKONDA

**DEPARTMENT OF COMPUTER SCIENCE & APPLICATION**

## CERTIFICATE

This is to certify that Mr. / Mrs. \_\_\_\_\_ student of  
PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA has  
successfully attended Bridge Course on “**INTRODUCTION TO COMPUTERS**”  
organized by Department of Computer Science and Application Conducted on 14<sup>th</sup>  
DECEMBER, 2022 to 31<sup>st</sup> JANUARY, 2023

Smt. T. Aruna  
CONVENER

Prof. B. Chandramouli  
PRINCIPAL

**BRIDGE COURSE**

**ON**

**INTRODUCTION TO PYTHON  
PROGRAMMING LANGUAGE**

**From**

**7<sup>th</sup> FEBRUARY, 2023 to 5<sup>th</sup> MARCH, 2023**

# BROCHURE

### ABOUT THE WORKSHOP

**"Introduction to Python" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanamakonda, on 07<sup>th</sup> February, 2023. The Aim of the workshop is to provide fundamental knowledge about Programming language and Python Programming .The faculty and students of department of computers attend the workshop.**

#### Python Introduction

**Python Introduction**  
Python Features  
Python Applications  
Getting started in python  
Programming in interactive mode  
Input statements  
output statements



#### Introduction to Python Programming

<ol style="list-style-type: none"> <li>1. Comments</li> <li>2. Arithmetic Operators</li> <li>3. Variables</li> <li>4. Data Type</li> <li>5. Input/Output</li> <li>6. Boolean Operators</li> <li>7. Lists</li> <li>8. Tuples</li> <li>9. Strings</li> <li>10. Manipulating Strings</li> </ol>	<ol style="list-style-type: none"> <li>11. Flow control: For Loops and While Loops</li> <li>12. Dictionaries and Structuring Data</li> <li>13. Exceptions</li> <li>14. Functions</li> <li>15. Namespace</li> <li>16. Read and Write Files</li> <li>17. Sets</li> <li>18. Introduction to IoT using Python and Cisco Packet Tracer</li> </ol>
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### BRIDGE COURSE ON INTRODUCTION TO PYTHON PROGRAMMING LANGUAGE 07<sup>TH</sup> FEBRUARY, 2023 TO 05<sup>TH</sup> MARCH , 2023



#### INTRODUCTION TO PYTHON PROGRAMMING LANGUAGE



Enter to Learn, Learn to Serve

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## Fundamentals of Python

### Conditional Statements/ Decision Making Statements

- Conditional statements are handled by IF statements in Python.

Some Decision Control Statements are:

S. No.	Statement & Description
1	<b><u>if statements:</u></b> An <b>if statement</b> consists of a boolean expression followed by one or more statements.
2	<b><u>if...else statements:</u></b> An <b>if statement</b> can be followed by an optional <b>else statement</b> , which executes when the boolean expression is FALSE.
3	<b><u>nested if statements:</u></b> You can use one <b>if</b> or <b>else if</b> statement inside another <b>if</b> or <b>else if</b> statement(s).

### Repetition Two (Loop) statements

- A **repetition statement** is used to repeat a group(block) of programming instructions.
- A loop statement allows us to execute a statement or group of statements multiple times.
- In Python, we generally have **loops/repetitive statements:**
  - for loop
  - while loop

#### While Loop:

- A while loop statement repeatedly executes a target statement as long as a given condition is true.

#### **Syntax**

While expression:

statement(s)

- Here, statement(s) may be a single statement or a block of statements.
- The condition may be any expression, and true is any non-zero value. The loop iterates while the condition is true.
- When the condition becomes false, program control passes to the line immediately following the loop.

Example count = 0

```
while (count < 9):
```

```
print 'The count is:', count
```

```
count = count + 1
```

**for loop:** A *for loop* is used to iterate over a sequence that is either a list, tuple, dictionary, or a set.

We can execute a set of statements once for each item in a list, tuple, or dictionary.

#### **Syntax**

for iterating\_var in sequence:

```
statements(s)
```



## Python Lists

Lists are used to store multiple items in a single variable.

Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are [Tuple](#), [Set](#), and [Dictionary](#), all with different qualities and usage.

Lists are created using square brackets:

```
Example: thislist = ["apple", "banana", "cherry"]
```

```
print(thislist)
```

**List Items:** List items are ordered, changeable, and allow duplicate values.

List items are indexed, the first item has index `[0]`, the second item has index `[1]` etc.

**Ordered:** When we say that lists are ordered, it means that the items have a defined order, and that order will not change.

If you add new items to a list, the new items will be placed at the end of the list.

**Changeable:** The list is changeable, meaning that we can change, add, and remove items in a list after it has been created.

**Allow Duplicates:** Since lists are indexed, lists can have items with the same value:

```
Example: thislist = ["apple", "banana", "cherry", "apple",  
"cherry"] print(thislist)
```

**List Length:** To determine how many items a list has, use the `len()` function:

```
thislist = ["apple", "banana",  
"cherry"] print(len(thislist))
```

**List Items - Data Types:** List items can be of any data type:

```
list1 = ["apple", "banana",  
"cherry"] list2 = [1, 5, 7, 9, 3]  
list3 = [True, False, False]
```

· A list can contain different data types: `list1 = ["abc", 34, True, 40, "male"]`

**type():** lists are defined as objects with the data type 'list': `<class 'list'>`

Example

```
mylist = ["apple", "banana", "cherry"]  
print(type(mylist))
```

**The list() Constructor:** It is also possible to use the `list()` constructor when creating a new list.

```
thislist = list(("apple", "banana", "cherry"))  
print(thislist)
```

## Python Tuple

Python Tuple is used to store the sequence of immutable Python objects. The tuple is similar to lists since the value of the items stored in the list can be changed, whereas the tuple is immutable, and the value of the items stored in the tuple cannot be changed.

**Creating a tuple**

A tuple can be written as the collection of comma-separated (,) values enclosed with the small () brackets. The parentheses are optional but it is good practice to use. A tuple can be defined as follows.

```
T1 = (101, "Peter", 22)
```

```
T2 = ("Apple", "Banana", "Orange")
```

```
T3 = 10,20,30,40,50
```

```
print(type(T1))
print(type(T2)) print(type(T3))
```

Operator	Description	Example
Repetition	The repetition operator enables the tuple elements to be repeated multiple times.	T1*2 = (1, 2, 3, 4, 5, 1,2, 3, 4, 5)
Concatenation	It concatenates the tuple mentioned on either side of the operator.	T1+T2 = (1, 2, 3, 4, 5,6, 7, 8, 9)
Membership	It returns true if a particular item exists in the tuple otherwise false	print (2 in T1) printsTrue.
Iteration	The for loop is used to iterate over the tuple elements	for i in T1:print(i)
Length	It is used to get the length of the tuple.	len(T1) = 5

### Python Tuple inbuilt functions:

SN	Function	Description
1	cmp(tuple1, tuple2)	It compares two tuples and returns true if tuple1 is greater than tuple2 otherwise false.
2	len(tuple)	It calculates the length of the tuple.
3	max(tuple)	It returns the maximum element of the tuple
4	min(tuple)	It returns the minimum element of the tuple.
5	tuple(seq)	It converts the specified sequence to the tuple.

### Dictionaries

- Dictionaries are used to store data values in key: value pairs.
- A dictionary is a collection which is ordered\*, changeable and do not allow duplicates.
- In Python dictionaries are written with curly brackets, and they have keys and values.

We can construct or create dictionary like:

```
X={1:'A',2:'B',3:'c'}
```

```
X=dict([('a',3) ('b',4)])
```

```
X=dict('A'=1,'B' =2)
```

#### **Example:**

```
>>> dict1 = {"brand": "mrcet", "model": "college", "year": 2004}
```

```
>>> dict1
```

```
{'brand': 'mrcet', 'model': 'college', 'year': 2004}
```

- Dictionary items are ordered, changeable, and does not allow duplicates.
- Dictionary items are presented in key: value pairs, and can be referred to by using the key name.
- When we say that dictionaries are ordered, it means that the items have a defined order, and that order will not change.
- Unordered means that the items does not have a defined order, you cannot refer to an item by using an index.
- Dictionaries are changeable, meaning that we can change, add or remove items after the dictionary has been created.
- Dictionaries cannot have two items with the same key

**Methods:** Methods that are available with dictionary are tabulated below.

Method	Description
<code>clear()</code>	Remove all items form the dictionary.
<code>copy()</code>	Return a shallow copy of the dictionary.
<code>get(key[,d])</code>	Return the value of key. If key does not exit, return d
<code>items()</code>	Return a new view of the dictionary's items (key, value).
<code>keys()</code>	Return a new view of the dictionary's keys.
<code>pop(key[,d])</code>	Remove the item with key and return its value or d if key is not found. If d is not provided and key is not found, raises <code>KeyError</code> .
<code>popitem()</code>	Remove and return an arbitrary item (key, value).
<code>setdefault(key[,d])</code>	If key is in the dictionary, return its value. If not, insert key with a value of d and return d (defaults to <code>None</code> ).
<code>update([other])</code>	Update the dictionary with the key/value pairs from other, overwriting existing keys.
<code>values()</code>	Return a new view of the dictionary's values

## **Functions**

- A function is a block of code which only runs when it is called.
- You can pass data, known as parameters, into a function.
- A function can return data as a result.
- In Python a function is defined using the `def` keyword:

```
Example: def my_function():  
print("Hello from a function")
```

- To call a function, use the function name followed by parenthesis:

```
Example: my_function()
```

- Information can be passed into functions as arguments.
- Arguments are specified after the function name, inside the parentheses.

```
Example: def my_function(fname): print(fname + " Refsnes")  
my_function("Rama") my_function("Sony") my_function("Krishna")
```

**Defining a Function** Syntax:

```
def functionname( parameters ):
```

```
"function_docstring" function_suite
return [expression]
```

### Example

```
def my_function(x):
return 5*x
print(my_function(3))
print(my_function(5))
print(my_function(9))
```

### **Calling a Function**

Once the basic structure of a function is finalized, you can execute it by calling it from another function or directly from the Python prompt.

#### **Example** printme()

```
def printme( str ):
"This prints a passed string into this function" print str
return;
printme("I'm first call to user defined function!")
printme("Again second call to the same function")
```

### **Python Strings**

- Strings in python are surrounded by either single quotation marks, or double quotation marks.

'hello' is the same as "hello".

- You can display a string literal with the print() function:

Example: print("Hello")

- Python does not support a character type; these are treated as strings of length one, thus also considered a substring.

- To access substrings, use the square brackets for slicing along with the index or indices to obtain your substring.

- Python Strings can join using the concatenation operator +.

```
>>> a=' Hello! '
```

```
>>> b='How are you?'
```

```
>>> a+b
```

**String Methods:** Python has a set of built-in methods that you can use on strings.

Method	Description
<a href="#">capitalize()</a>	Converts the first character to uppercase
<a href="#">casefold()</a>	Converts string into lower case
<a href="#">center()</a>	Returns a centered string
<a href="#">count()</a>	Returns the number of times a specified value occurs in a string
<a href="#">find()</a>	Searches the string for a specified value and returns the position of where it was found
<a href="#">format()</a>	Formats specified values in a string
<a href="#">isalnum()</a>	Returns True if all characters in the string are alphanumeric
<a href="#">isalpha()</a>	Returns True if all characters in the string are in the alphabet
<a href="#">isdigit()</a>	Returns True if all characters in the string are digits
<a href="#">islower()</a>	Returns True if all characters in the string are lower case
<a href="#">isnumeric()</a>	Returns True if all characters in the string are numeric
<a href="#">isprintable()</a>	Returns True if all characters in the string are printable
<a href="#">isspace()</a>	Returns True if all characters in the string are whitespaces
<a href="#">istitle()</a>	Returns True if the string follows the rules of a title
<a href="#">isupper()</a>	Returns True if all characters in the string are upper case
<a href="#">lower()</a>	Converts a string into lower case
<a href="#">lstrip()</a>	Returns a left trim version of the string
<a href="#">replace()</a>	Returns a string where a specified value is replaced with a specified value
<a href="#">split()</a>	Splits the string at the specified separator, and returns a list

- In all these circumstances, we must clean up the resource once it has been used, whether it was successful or not.
- These actions (closing a file, closing the GUI, or disconnecting from the network) are performed in the finally clause to guarantee execution.

**try:**

```
f = open("test.txt",encoding = 'utf-8') #
```

```
perform file operations finally: f.close()
```



**Hands on Practice:**



**Students Participated List:**

<b>S.No</b>	<b>HT NO.</b>	<b>NAME OF THE CANDIDATE</b>
1	005201302	AVULA DIVYA
2	005201306	CHIDEM RAJINI
3	005201308	KOMMANABOINA HARITHA
4	005201310	MATHANGI DEEPIKA
5	005201311	MEERIPELLI BINDU PRASANNA
6	005201312	MOHAMMAD SANAAFRIIN
7	005201313	MUNDRATHI LAVANYA
8	005201314	PUJARI SATHWIKA
9	005201315	PULLURU RISHIKA
10	005201316	SAMREEN BEGUM
11	005201318	SINGARAPU USHAKIRAN
12	005201319	SIRIGADHI KASTURI
13	005201751	BANOTHU ANUSHA
14	005201753	CHILUVERU PRATHIMA
15	005201754	GANDHAM PUSHPALATHA
16	005201756	KANGALA RAJESWARI
17	005201757	KONKATI AKHILA
18	005201758	LOKINI RAVALIKA
19	005201701	ARURI MAHESHWARI
20	005201702	ATLA GOUTHAMI
21	005201705	GOURISETTY AMULYA
22	005201706	ILAPURAM MANASA
23	005201707	ILAPURAM SOUMYA
24	005201709	KANDUKURI PRASUNA
25	005201710	MACHARLA SRIVANI
26	005201711	MADAPA ANUSHA
27	005201712	NALLATEEGALA SAMATHA
28	005201713	NALLATHEEGALA SUMALATHA
29	005201715	SIRIKONDA RAVEENA
30	005201501	BHUKYA SWETHA

**Certificate:**



**PINGLE GOVT. COLLEGE FOR WOMEN (A)  
WADEPPALLY, HANUMAKONDA**

**DEPARTMENT OF COMPUTER SCIENCE & APPLICATION**

**CERTIFICATE**

This is to certify that Mr. / Mrs. \_\_\_\_\_ of **PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA** has successfully attended Bridge Course on “**BASIC COMPUTER SKILL**” Organized by Department of Computer Science and Application Conducted on 15<sup>th</sup> NOVEMBER 2022

**Smt. T. Aruna**  
**CONVENER**

**Prof. B. Chandramouli**  
**PRINCIPAL**



## ABSTRACT OF BRIDGE COURSE (2021-2022)

SNO	Name Of The Faculty	Subject	Class	Duration	No. of Participants
1	B. Swarnalatha P. Bharathi	Basic Computer Skills	BSC(BZCS) & BSC(MSTCS)	15-11-2022 to 28-12-2022	50
2	T. Aruna	Basics of Computers and Power point	BCOM	02-03-2021 to 20-03-2021	90
3	P. Prathibha	Python Programming	BSC(MPCs) MCCS)	25-02-2021 to 20-03-2021	98

**BRIDGE COURSE**

**ON**

**BASICS OF COMPUTERS AND  
POWERPOINT**

**From**

**2<sup>nd</sup> MARCH, 2021 to 20<sup>th</sup> MARCH, 2021**

# BROCHURE

## ABOUT THE WORKSHOP

"Basics of Computer and Power Point" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda, on 02<sup>ND</sup> March, 2023. The Aim of the workshop is to provide fundamental knowledge about PowerPoint Basics, Insert Image, Insert Video. The faculty and students of department of computers attend the workshop.

### The PowerPoint Toolbar

- File
  - Info—New—Open—Save—Save As—Print—Share—Export—Close
- Home
  - Clipboard—Slides—Font—Paragraph—Drawing—Editing
- Insert
  - Slides—Tables—Images—Illustrations—Add-ins—Links—Comments—Text—Symbols—Media
- Design
  - Themes—Variants—Customize (Slide Size, Format Background)
- Transitions
  - None—Cut—Fade—Push—Wipe—Split—Reveal—Random Bars—Shape—Uncover—Cover—Flash—Fall Over—Drape—Curtains—Wind—Prestige—(Plus More)—Timing

### The PowerPoint Toolbar

- Animations
  - Appear—Fade—Fly In—Float In—Split—Wipe—Shape—Wheel—Random Bars—Grow & Turn—Zoom—Bounce—Pulse—(plus more)—Advanced Animation—Timing
- Slide Show
  - Start Slide Show—Set Up—Monitors
- Review
  - Proofing—Insights—Comments—Compare—Start Inking Ink
- View
  - Presentation Views—Master Views—Show—Zoom—Color/Grayscale—Window—Macros
- Format
  - Insert Shapes—Shape Styles—WordArt Styles—Arrange—Size

Prof. B. Raja Reddy, Principal

### ORGANIZING COMMITTEE:

**Conveners** :B. Swarnalatha  
:P. Prathibha  
:T. Aruna

Seminar hall (Room. No: 47)

## ABOUT THE COLLEGE:



Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda has an illustrious and developmental history. It started with pre-university courses in Arts, Commerce and Science in the building donated by Pingle family in 1965. Since then it witnessed continuous and consistent development in expanding the courses, At present college is providing 17 U.G. and 10 P.G. courses and Certificate courses and one Add on Course, sponsored by UGC in Diploma in Front Office Management

Pingle Govt. College for Women (Autonomous), Waddepally, Hanumakonda has introduced the computer courses in the year 1998 with B.Sc Mathematics, Physics and Computer science combination. In the immediate successive year, i.e, (1998 - 1999) Computer course with B.A and B.Com classes also were introduced. Since then there has been a study and evident development of the department. Currently the courses are B.Sc (Phy. Sci.) as MPCs, MCCS, MSCS, B.Com (CA), and BSC (Life Sci. with CS) & with new courses B.Sc Data Science

## BRIDGE COURSE

ON  
BASICS OF COMPUTER AND POWER  
POINT  
02<sup>ND</sup> MARCH , 2021.  
TO  
20<sup>TH</sup> MARCH ,2021



Organized by

**DEPARTMENT OF  
COMPUTER  
SCIENCE &  
APPLICATIONS**

**PINGLE GOVERNMENT COLLEGE FOR  
WOMEN(AUTONOMOUS)  
WADDEPALLY, HANAMKONDA  
(Accredited with 'A' Grade by  
NAAC)**

## COURSES OFFERED

### Under Graduation

- B.Sc.(Maths, Physics, Computer Science)
- B.Sc.(Maths, Statistics Computer Science)
- B.Sc.(Maths, Statistics ,Data Science)
- B.Sc.(Maths, Chemistry, Computer Science)
- B.Sc.(Botany, Zoology, Computer Science)
- B.Sc.(Microbiology, Zoology, Computer Science)
- B.Com.(Computer Applications)

## HIGHLIGHTS OF DEPARTMENT

### ABOUT THE COLLEGE:

- Outcome Based Education
- Focus on programming hands-on
- Online Teaching Assistance through Video Lectures
- Motivation for Self learning initiatives
- Well defined student Counseling and Mentoring process
- Maintaining e-Library using QR CODES
- Well defined Teaching— Learning Process with use of Technology Based Teaching Methodologies
- Value added course such as IOT, BIGDATA, CLOUD COMPUTING, PYTHON are regularly offered to students with Online Platforms Spoken Tutorial, Coursera , Edx etc

### COLLEGE WEBSITE:

<https://gdcts.cgg.gov.in/hanamkondawomen.edu>



## To Start PowerPoint:

- Click on Start
- Click the following in sequence stated: All Programs->Microsoft Office->Microsoft Office PowerPoint
- The Microsoft Office PowerPoint window will appear, starting the software.

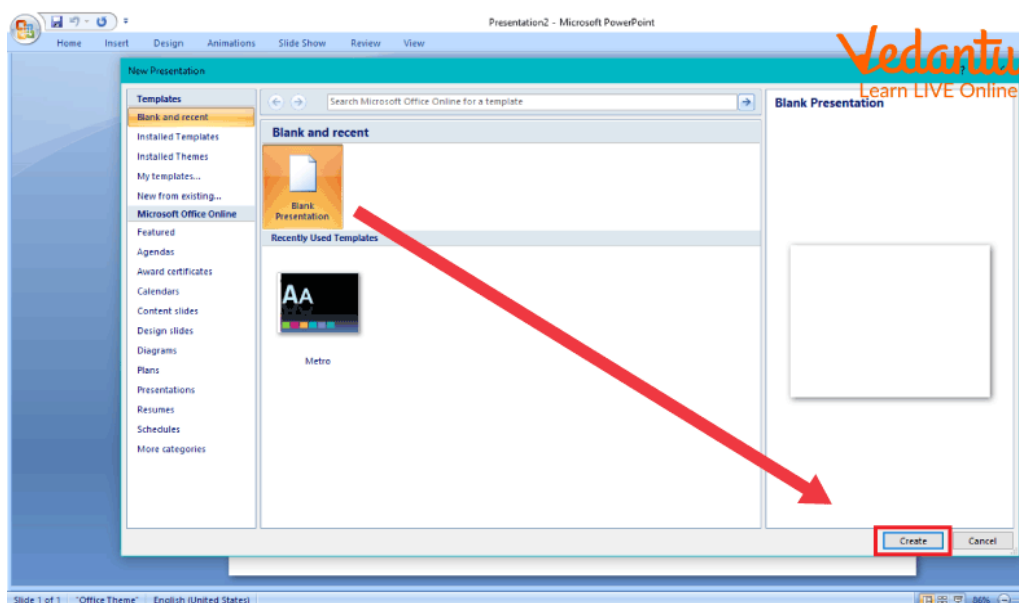
## To Open a Blank Presentation?

By default, when we open PowerPoint for the first time, it opens to a new presentation but for future purposes, if we want to open a new presentation, we can do so by following the below-given steps.

Click on New Presentation link on Getting Started pane on the left which results in the appearance of a new window.

Select on Blank Presentation, when the new presentation appears along with it a Layout pane on the right will also appear.

Select any desired layout from the list.



## Opening a New Presentation

### Uses of PowerPoint

- **Uses of PowerPoint** in Education:

Since PowerPoint offers the feature of adding images and animations, learning by visualization makes the learning experience more fun and simplified, and researchers state that visual information is retained for a longer amount of time thus it makes the whole process more beneficial.

- **Uses of PowerPoint** in Business:

Business is mainly about creating a well-laid out roadmap and planning for the project at hand and then executing it. With PowerPoint we can assure a more organised output with a solid structure.

- **Uses of PowerPoint** for Government and Citizen Services:

PowerPoint is also a good option, from other software bundled within MS Office, for storing records and since it's also printable, it provides easy access to the records for government and citizen services to the seekers.

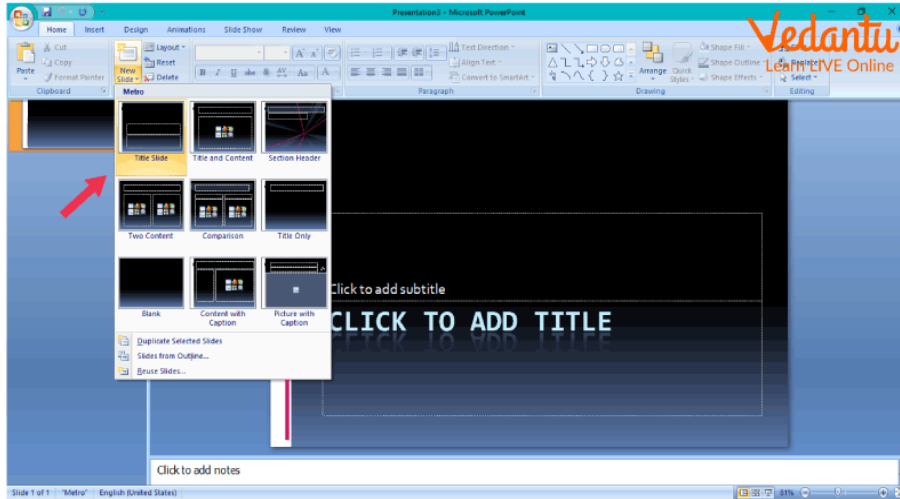
## Sample Questions

### 1. How can we view or run a presentation?

**Ans:** To run a presentation, either click on the F5 key or select Play from Beginning on the Slideshow Pane.

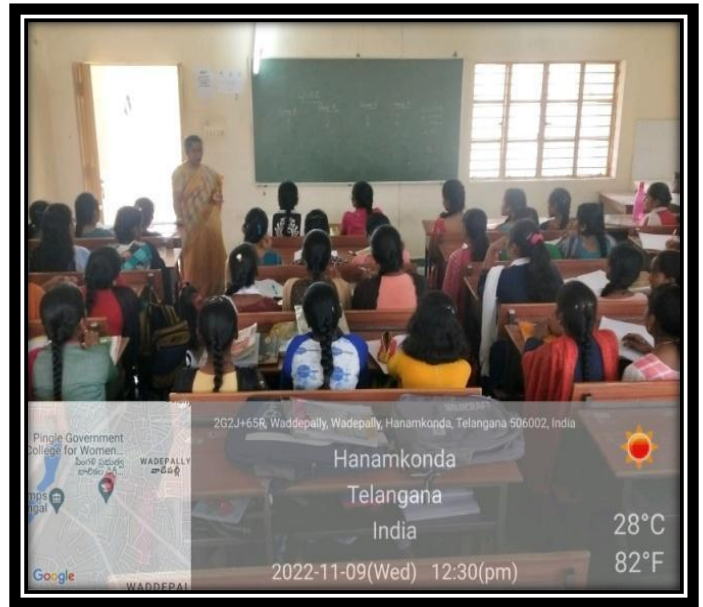
### 2. How can we add a blank slide to our presentation?

**Ans:** For adding a new slide in the same presentation simply click on the Slide icon on the Insert tab and choose the type of slide you want to add from the drop-down menu which unfolds on the screen.



**Adding a New Slide**

# Hands on Practice



## Participated Students list:

1	Bhukya ashwini	MPCs
2	Kemsaram anusha	B.Com(CA)
3	M.Srividya	MPCs
4	B.Sabitha	MPCs
5	Nagurla Manasa	MPCs
6	Thota Pravalika	MPCs
7	Vainala sowmya	MPCs
8	Merugu.triveni	B.Com(CA)
9	Rathipelly Ravali	MPCs
10	E. Rajyalaxmi	B.Com(CA)
11	Kottem keerthipriya	B.Com(CA)
12	Anjali Ummagani	MPCs
13	MANKENA shirisha	MPCs
14	L.Aishwarya	MPCs
15	Sana Farhana	B.Com(CA)
16	Bhukya mounika	B.Com(CA)
17	MD.NEHA	B.Com(CA)
18	Bitla.Pravalika	MPCs
19	Vanga.Bhavani	MPCs
20	Nalla Vandhana	MPCs
21	ALLENKI TEJASWINI	MPCs
22	ADIDALA BHARGAVI REDDY	MPCs
23	Sriramula Lalitha	MPCs
24	Kalyani	B.Com(CA)
25	Manasa amancha	B.Com(CA)
26	M. Deepa	B.Com(CA)
27	Neeraja Madishetty	B.Com(CA)
28	B.kavya	B.Com(CA)
29	G.Bhavya sri	MPCs
30	Sarikoppula Jyoshna	MPCs
31	Kathula Ravali	BSC(Data Science)

## Certificate:



# PINGLE GOVT. COLLEGE FOR WOMEN (A) WADEPPALLY, HANUMAKONDA

## DEPARTMENT OF COMPUTER SCIENCE & APPLICATION CERTIFICATE

This is to certify that Mr. / Mrs. \_\_\_\_\_ of PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA has successfully attended Bridge Course on "BASICS OF COMPUTER SKILLS AND POWERPOINT" Organized by Department of Computer Science and Application Conducted on 2<sup>nd</sup> MARCH 2021 to 20<sup>th</sup> MARCH 2021.

**Dr. D. Suresh Babu**  
CONVENER

**Prof. B. Chandramouli**  
PRINCIPAL



**BRIDGE COURSE**

**ON**

**INTRODUCTION TO PYTHON PROGRAMMING  
LANGUAGE**

**From**

**25<sup>th</sup> FEBRUARY, 2021 to 10<sup>th</sup> MARCH, 2021**

# BROCHURE

## ABOUT THE WORKSHOP

"Introduction to Python" workshop will be held at Pingle Govt. College for Women (Autonomous), Waddepally, Hanamakonda, on 07<sup>th</sup> February, 2023. The Aim of the workshop is to provide fundamental knowledge about Programming language and Python Programming. The faculty and students of department of computers attend the workshop.

## Python Introduction

Python Introduction  
Python Features  
Python Applications  
Getting started in python  
Programming in Immediate mode  
Programming in script mode  
Input statements  
output statements



## Introduction to Python Programming

- |                          |  |
|--------------------------|--|
| 1. Comments              | 11. Flow control: For Loops and While Loops                  |
| 2. Arithmetic Operators  | 12. Dictionaries and Structuring Data                        |
| 3. Variables             | 13. Exceptions   |
| 4. Data Type             | 14. Functions  |
| 5. Input/Output          | 15. Namespace  |
| 6. Boolean Operators     | 16. Read and Write Files                                     |
| 7. Lists                 | 17. Sets   |
| 8. Tuples                | 18. Introduction to IoT using Python and Cisco Packet Tracer |
| 9. Strings               |  |
| 10. Manipulating Strings |  |

Principal: Dr.G.Raja Reddy

## ORGANIZING COMMITTEE:

**Conveners** : B. Swarnalatha  
: P. Prathibha  
: T. Aruna  
**MEMBERS** : P. Bharathi

**Seminar hall (Room. No: 47)**

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INTRODUCTION TO PYTHON  
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25<sup>TH</sup> FEBRUARY, 2021  
TO  
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## Fundamentals of Python

- In Python, the selection statements are also known as Decision control statements or branching statements.
- The selection statement allows a program to test several conditions and execute instructions based on which condition is true.
- Conditional statements are handled by IF statements in Python.

### Some Decision Control Statements are:

- Simple if
- if-else
- nested if
- if-elif-else

Statement & Description
<b><u>if statements:</u></b> An <b>if statement</b> consists of a boolean expression followed by one or more statements.
<b><u>if...else statements:</u></b> An <b>if statement</b> can be followed by an optional <b>else statement</b> , which executes when the boolean expression is FALSE.
<b><u>nested if statements:</u></b> You can use one <b>if</b> or <b>else if</b> statement inside another <b>if</b> or <b>else if</b> statement(s).

### If Statement ( Simple if):

- *If statements* are control flow statements that help us to run a particular code, but only when a certain condition is met or satisfied.
- A *simple if* only has one condition to check.
- Python if Statement is used for decision-making operations.
- It contains a body of code which runs only when the condition given in the if statement is true.

#### **Syntax:**

If expression

Statement

**if-else statement:** The *if-else statement* evaluates the condition and will execute the body of **if** if the test condition is True, but if the condition is False, then the body of **else** is executed.

- An else statement can be combined with an if statement.
- The else statement is an optional statement and there could be at most only one else statement following if.

#### Syntax

If expression:

statement(s) else:

statement(s)

**nested if:** *Nested if statements* are an if statement inside another if statement.

**if-elif-else statement:** The *if-elif-else statement* is used to conditionally execute a statement or a block of statements.

- The elif statement allows you to check multiple expressions for TRUE and execute a block of code as soon as one of the conditions evaluates to TRUE.
- Similar to the else, the elif statement is optional.

- In Python, we generally have **loops/repetitive statements**:

- for loop
- while loop

### **While Loop:**

- A while loop statement repeatedly executes a target statement as long as a given condition is true.

#### **Syntax**

while expression:

statement(s)

- Here, statement(s) may be a single statement or a block of statements.
- The condition may be any expression, and true is any non-zero value. The loop iterates while the condition is true.
- When the condition becomes false, program control passes to the line immediately following the loop.

Example count = 0

```
while (count < 9):
```

```
print 'The count is:', count
```

```
count = count + 1
```

**for loop:** A *for loop* is used to iterate over a sequence that is either a list, tuple, dictionary, or a set.

We can execute a set of statements once for each item in a list, tuple, or dictionary.

#### **Syntax**

for iterating\_var in sequence:

statements(s)

If a sequence contains an expression list, it is evaluated first. Then, the first item in the sequence is assigned to the iterating variable *iterating\_var*. Next, the statements block is executed. Each item in the list is assigned to *iterating\_var*, and the statement(s) block is executed until the entire sequence is exhausted.

**Example:** for letter in 'Python':

```
print 'Current Letter :', letter
```

### **Python Lists**

Lists are used to store multiple items in a single variable.

Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are [Tuple](#), [Set](#) and [Dictionary](#), all with different qualities and usage.

Lists are created using square brackets:

```
Example: thislist = ["apple", "banana", "cherry"]
```

```
print(thislist)
```

**List Items:** List items are ordered, changeable, and allow duplicate values.

List items are indexed, the first item has index `[0]`, the second item has index `[1]` etc.

**Ordered:** When we say that lists are ordered, it means that the items have a defined order, and that order will not change. If you add new items to a list, the new items will be placed at the end of the list.

**Changeable:** The list is changeable, meaning that we can change, add, and remove items in a list after it has been created.

**Allow Duplicates:** Since lists are indexed, lists can have items with the same value:

```
Example: thislist = ["apple", "banana", "cherry", "apple",  
"cherry"] print(thislist)
```

**List Length:** To determine how many items a list has, use the `len()` function:

### List Items - Data Types: List items can be of any data type:

```
list1 = ["apple", "banana",  
"cherry"] list2 = [1, 5, 7, 9, 3]  
list3 = [True, False, False]
```

· A list can contain different data types:

· list1 = ["abc", 34, True, 40, "male"]

**type():** lists are defined as objects with the data type 'list': <class 'list'>

Example

```
mylist = ["apple", "banana", "cherry"]  
print(type(mylist))
```

**The list() Constructor:** It is also possible to use the list() constructor when creating a new list.

```
thislist = list(["apple", "banana", "cherry"])  
print(thislist)
```

### Python Tuple

Python Tuple is used to store the sequence of immutable Python objects. The tuple is similar to lists since the value of the items stored in the list can be changed, whereas the tuple is immutable, and the value of the items stored in the tuple cannot be changed.

#### Creating a tuple

A tuple can be written as the collection of comma-separated (,) values enclosed with the small () brackets. The parentheses are optional but it is good practice to use. A tuple can be defined as follows.

```
T1 = (101, "Peter", 22)  
T2 = ("Apple", "Banana", "Orange") T3 = 10,20,30,40,50  
print(type(T1))  
print(type(T2)) print(type(T3))
```

### Basic Tuple operations

The operators like concatenation (+), repetition (\*), Membership (in) works in the same way as they work with the list.

Let's say Tuple t = (1, 2, 3, 4, 5) and Tuple t1 = (6, 7, 8, 9) are declared.

Operator	Description	Example
Repetition	The repetition operator enables the tuple elements to be repeated multiple times.	T1*2 = (1, 2, 3, 4, 5, 1, 2, 3, 4, 5)
Concatenation	It concatenates the tuple mentioned on either side of the operator.	T1+T2 = (1, 2, 3, 4, 5, 6, 7, 8, 9)
Membership	It returns true if a particular item exists in the tuple otherwise false	print (2 in T1) printsTrue.
Iteration	The for loop is used to iterate over the tuple	for i in T1:print(i)
Length	It is used to get the length of the tuple.	len(T1) = 5

## Python Tuple inbuilt functions:

SN	Function	Description
1	cmp(tuple1, tuple2)	It compares two tuples and returns true if tuple1 is greater than tuple2 otherwise false.
2	len(tuple)	It calculates the length of the tuple.
3	max(tuple)	It returns the maximum element of the tuple
4	min(tuple)	It returns the minimum element of the tuple.
5	tuple(seq)	It converts the specified sequence to the tuple.

## Dictionaries

- Dictionaries are used to store data values in key: value pairs.
  - A dictionary is a collection which is ordered\*, changeable and do not allow duplicates.
- In Python dictionaries are written with curly brackets, and they have keys and values.

Key-value pairs

Unordered

We can construct or create dictionary like:

```
X={1:'A',2:'B',3:'c'}
```

```
X=dict([('a',3) ('b',4)])
```

Example:

```
>>> dict1 = {"brand": "mrcet", "model": "college", "year": 2004}
```

```
>>> dict1
```

```
{'brand': 'mrcet', 'model': 'college', 'year': 2004}
```

- Dictionary items are ordered, changeable, and does not allow duplicates.
- Dictionary items are presented in key: value pairs, and can be referred to by using the key name.
- When we say that dictionaries are ordered, it means that the items have a defined order, and that order will not change.
- Unordered means that the items does not have a defined order, you cannot refer to an item by using an index.
- Dictionaries are changeable, meaning that we can change, add or remove items after the dictionary has been created. Dictionaries cannot have two items with the same key

Example: thisdict = {

```
"brand": "Ford",
```

```
"model": "Mustang", "year": 1964,
```

```
"year": 2020
```

```
}
```

```
print(thisdict)
```

**Methods:** Methods that are available with dictionary are tabulated below.

Method	Description
<code>clear()</code>	Remove all items form the dictionary.
<code>copy()</code>	Return a shallow copy of the dictionary.
<code>get(key[,d])</code>	Return the value of key. If key does not exit, return d
<code>items()</code>	Return a new view of the dictionary's items (key, value).
<code>keys()</code>	Return a new view of the dictionary's keys.
<code>pop(key[,d])</code>	Remove the item with key and return its value or d if key is not found. If d is not provided and key is not found, raises KeyError.
<code>popitem()</code>	Remove and return an arbitrary item (key, value).
<code>setdefault(key[,d])</code>	If key is in the dictionary, return its value. If not, insert key with a value of d and return d (defaults to None).
<code>update([other])</code>	Update the dictionary with the key/value pairs from other, overwriting existing keys.
<code>values()</code>	Return a new view of the dictionary's values

### **Python Functions**

- A function is a block of code which only runs when it is called.
- You can pass data, known as parameters, into a function.
- A function can return data as a result.
- In Python a function is defined using the **def** keyword:

Example: `def my_function():`  
`print("Hello from a function")`

- To call a function, use the function name followed by parenthesis:

Example: `my_function()`

- Information can be passed into functions as arguments.
- Arguments are specified after the function name, inside the parentheses.

Example: `def my_function(fname):`

`print(fname + " Refsnes")`

`my_function("Rama")`

`my_function("Sony")` m

### **Defining a Function Syntax:**

`def functionname( parameters ):`

`"function_docstring" function_suite`

`return [expression]`

- To let a function return a value, use the return statement:

Example `def my_function(x):`

`return 5 * x`

`print(my_function(3))`

`print(my_function(5))`

- you can delete a function with the 'del' keyword.

Example: `del my_function`

**Calling a Function:** Once the basic structure of a function is finalized, you can execute it by calling it from another function or directly from the Python prompt.

Example printme()

```
def printme( str ):
```

```
"This prints a passed string into this function" print str
```

```
return;
```

```
printme("I'm first call to user defined function!") printme("Again second call to the same function")
```

### **Pass by reference vs value**

- All parameters (arguments) in the Python language are passed by reference.
- It means if you change what a parameter refers to within a function, the change also reflects back in the calling function.

EXAMPLE:

```
def changeme( mylist ):
```

```
"This changes a passed list into this function"
```

```
mylist.append([1,2,3,4]);
```

```
print "Values inside the function: ", mylist return changeme( mylist );
```

```
print "Values outside the function: ", mylist
```

### **Output:**

Values inside the function: [10, 20, 30, [1, 2, 3, 4]]

Values outside the function: [10, 20, 30, [1, 2, 3, 4]]

### **Python Strings**

- Strings in python are surrounded by either single quotation marks, or double quotation marks. 'hello' is the same as "hello".

Example: print("Hello")

- Python does not support a character type; these are treated as strings of length one, thus also considered a substring.

- To access substrings, use the square brackets for slicing along with the index or indices to obtain your substring.

For example –

```
var1 = 'Hello World!'
```

```
var2 = "Python Programming" print
```

```
"var1[0]: ", var1[0]
```

```
print "var2[1:5]: ", var2[1:5]
```

- Python Strings can join using the concatenation operator +.

```
>>> a=' Hello! '
```

```
>>> b='How are you?'
```

```
>>> a+b
```

**Output:** 'Hello! How are you?'

**String Methods:** Python has a set of built-in methods that you can use on strings.



Method	Description
<a href="#">capitalize()</a>	Converts the first character to uppercase
<a href="#">casefold()</a>	Converts string into lower case
<a href="#">center()</a>	Returns a centered string
<a href="#">count()</a>	Returns the number of times a specified value occurs in a string
<a href="#">find()</a>	Searches the string for a specified value and returns the position of where it was found
<a href="#">format()</a>	Formats specified values in a string
<a href="#">isalnum()</a>	Returns True if all characters in the string are alphanumeric
<a href="#">isalpha()</a>	Returns True if all characters in the string are in the alphabet
<a href="#">isdigit()</a>	Returns True if all characters in the string are digits
<a href="#">isidentifier()</a>	Returns True if the string is an identifier
<a href="#">islower()</a>	Returns True if all characters in the string are lower case
<a href="#">isnumeric()</a>	Returns True if all characters in the string are numeric
<a href="#">isspace()</a>	Returns True if all characters in the string are whitespaces
<a href="#">istitle()</a>	Returns True if the string follows the rules of a title
<a href="#">isupper()</a>	Returns True if all characters in the string are upper case
<a href="#">lower()</a>	Converts a string into lower case
<a href="#">maketrans()</a>	Returns a translation table to be used in translations
<a href="#">partition()</a>	Returns a tuple where the string is parsed into three parts
<a href="#">replace()</a>	Returns a string where a specified value is replaced with a specified value
<a href="#">split()</a>	Splits the string at the specified separator, and returns a list

● In all these circumstances, we must clean up the resource once it has been used, whether it was successful or not. These actions (closing a file, closing the GUI, or disconnecting from the network) are performed in the finally clause to guarantee execution.

**try:**

```
f = open("test.txt",encoding = 'utf-8') #
```

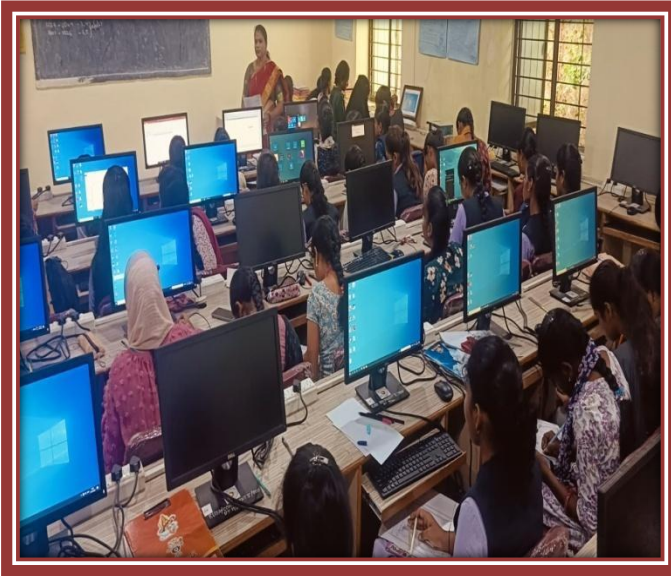
```
perform file operations finally: f.close()
```

Different types of exceptions in Python:

In Python, there are several built-in exceptions that can be raised when an error occurs during the execution of a program.



## Hands on Practice:



**Certificate:**



**PINGLE GOVT. COLLEGE FOR WOMEN (A)  
WADEPPALLY, HANUMAKONDA**

**DEPARTMENT OF COMPUTER SCIENCE & APPLICATION**

**CERTIFICATE**

This is to certify that Mr. / Mrs. \_\_\_\_\_ of **PINGLE GOVT. COLLEGE FOR WOMEN(A), HANUMAKONDA** has successfully attended Bridge Course on “**INTRODUCTION TO PYTHON PROGRAMMING LANGUAGE**” Organized by Department of Computer Science and Application Conducted on 25<sup>th</sup> FEB 2021 to 10<sup>th</sup> MARCH 2021.

**Smt. T. Aruna**  
CONVENER

**Prof. B. Chandramouli**  
PRINCIPAL