DEPARTMENT OF

COMPUTER SCIENCE & APPLICATIONS

FIELD TECH PROJECTS

Pingle Govt. College for Women (A), Waddepally

AUTONOMOUS

HANUMAKONDA -506370, TELANGANA

Field Tech Projects: A Hands-On Learning Experience for Students

Field tech projects offer a unique opportunity for students to bridge the gap between theoretical knowledge learned in classrooms and practical application in the real world. These projects take students outside the traditional learning environment, allowing them to:

Develop Practical Skills: Fieldwork exposes students to the tools and technologies used in their chosen field. Whether it's using specialized equipment to collect environmental data, troubleshooting connectivity issues in a simulated setting, or learning basic maintenance procedures, these projects provide valuable hands-on experience.

Apply Classroom Knowledge: Projects can be designed to directly apply concepts learned in class. For example, environmental science students might conduct water quality testing in a local stream, while engineering students could build and test a weather monitoring system in the field.

Boost Problem-Solving Skills: Fieldwork often presents unexpected challenges. Students need to think critically, adapt to changing situations, and troubleshoot problems on the fly. These experiences hone their problem-solving skills and build resilience.

Foster Teamwork and Communication: Field projects are rarely completed solo. Students learn to collaborate effectively, communicate clearly with their team members, and delegate tasks efficiently.

Examples of Student Field Tech Projects:

Environmental Monitoring: Students deploy a network of low-cost sensors to monitor air quality, temperature, or noise levels in a specific location.

Smart City Challenge: Teams design and prototype a technology solution to address a specific challenge faced by their city, such as improved traffic management or waste collection.

Disaster Preparedness Survey: A team surveys a local community to assess their preparedness for natural disasters, identifying areas where technology could play a role.

Considerations for Student Field Tech Projects:

Safety First: All projects must prioritize student safety. Proper training and supervision are essential, especially when working with equipment or in potentially hazardous environments.

Project Scope: The project's complexity should be tailored to the students' age, skill level, and available resources.

Community Engagement: Consider partnering with local organizations to benefit the community while providing students with a real-world context for their work.

Field tech projects can be a transformative learning experience for students. By combining classroom knowledge with practical application, these projects equip students with the skills and confidence they need to thrive in the ever-evolving world of technology.

ABSTRACT OF FIELD PROJECTS

Program Code	Project / Programme Title	No. of students enrolled
2022-2023		
FP5	Awareness on Fundamentals of Computers	05
FP4	Applications and Uses of Computers	05
2021-2022		
FP3	Computer Fundamentals and applications – Awareness	05
FP2	Fundamentals on Computers basics for School Children	06
FP1	Awareness on Online Transactions	15

STUDENT'S FIELD PROJECT REPORT

ON

AWARENESS ON FUNDAMENTALS OF COMPUTERS

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Awareness on Fundamentals of Computer: A presentation of Computer Fundamentals Module to the Students of Govt. High School, Warangal

To provide complete awareness about the hardware and basic electronic components of different types of computers like desk top, lap top, iPad and smart phones.

To provide complete awareness about the different types of operating systems commonly used in different types of computers and the popularly used application software for day to day applications like word processing, spreadsheets and presentation with hands on practical session.

To provide complete awareness about the usage and application of Internet Technology.

COMPUTER PARTS

A computer consists of many different parts that work together to perform different tasks. The main parts of a computer include:

Motherboard: The motherboard is the main circuit board that connects all the other parts of the computer.

Central Processing Unit (CPU): The CPU is the brain of the computer that performs all the calculations and processing.

Random Access Memory (RAM): RAM is a type of temporary memory that is used by the computer to store data and programs while they are being used.

Hard Disk Drive (HDD) or Solid State Drive (SSD): The hard drive is where the computer stores all its data, including the operating system, software programs, and personal files.

Power Supply Unit (PSU): The PSU is responsible for supplying power to all the other components of the computer.

Graphics Processing Unit (GPU): The GPU is responsible for rendering images and videos and is especially important for gaming and video editing.

Optical Drive: An optical drive is used to read and write data from CDs and DVDs.

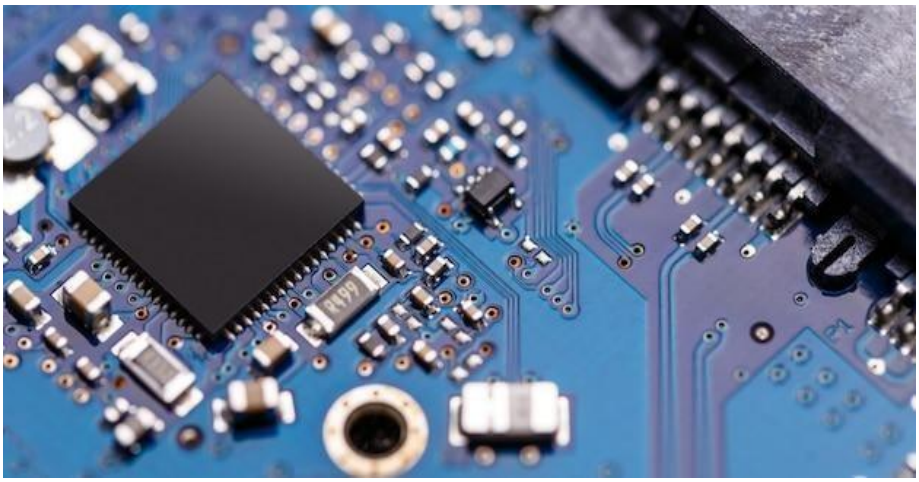
Input Devices: These include devices such as a keyboard, mouse, and microphone that are used to input data and commands into the computer.

Output Devices: These include devices such as a monitor, speakers, and printer that are used to display or output data from the computer.

Cooling System: The cooling system helps to regulate the temperature of the computer's components and prevent overheating.

These are the main parts of a computer, although there are many other components that can be added or upgraded depending on the needs of the user.

COMPUTER MEMORY



Computer memory is a hardware component that is used to store and retrieve data in a computer. It is an essential part of any computing system, as it allows the computer to access and process information quickly and efficiently.

Random Access Memory (RAM) - This type of memory is used to temporarily store data that the computer is currently working with. RAM is a volatile memory, which means that its contents are lost when the computer is turned off or restarted.

Read-Only Memory (ROM) - This type of memory contains data that cannot be modified or erased. It is used to store the computer's firmware or system software.

Cache memory - This is a type of memory that is used to temporarily store frequently used data or instructions. It is designed to improve the computer's processing speed by reducing the time it takes to access frequently used data.

Virtual memory - This is a type of memory that is created by using part of the hard drive as an extension of the computer's RAM. It is used to increase the amount of available memory and improve the performance of the computer.

Flash memory - This is a type of non-volatile memory that is commonly used in storage devices such as USB drives, memory cards, and solid-state drives. It is also used in mobile devices and cameras to store data and files.

Each type of memory has its own characteristics, advantages, and disadvantages, and is used for different purposes in a computer system.

STUDENT'S FIELD PROJECT REPORT

ON

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Applications of Computer: A presentation of Computer Fundamentals Module to the Students of Govt. High School, Hanamkonda

To provide complete awareness about the usage and application of Computers in Real World and also given knowledge about uses of Computer.

Computers play a role in every field of life. They are used in homes, business, educational institutions, research organizations, medical field, government offices, entertainment, etc.

Home

Computers are used at homes for several purposes like online bill payment, watching movies or shows at home, home tutoring, social media access, playing games, internet access, etc. They provide communication through electronic mail. They help to avail work from home facility for corporate employees. Computers help the student community to avail online educational support.

Medical Field

Computers are used in hospitals to maintain a database of patients' history, diagnosis, X-rays, live monitoring of patients, etc. Surgeons nowadays use robotic surgical devices to perform delicate operations, and conduct surgeries remotely. Virtual reality technologies are also used for training purposes. It also helps to monitor the fetus inside the mother's womb.

Entertainment

Computers help to watch movies online, play games online; act as a virtual entertainer in playing games, listening to music, etc. MIDI instruments greatly help people in the entertainment industry in recording music with artificial instruments. Videos can be fed from computers to full screen televisions. Photo editors are available with fabulous features.

Industry

Computers are used to perform several tasks in industries like managing inventory, designing purpose, creating virtual sample products, interior designing, video conferencing, etc. Online marketing has seen a great revolution in its ability to sell various products to inaccessible corners like interior or rural areas. Stock markets have seen phenomenal participation from different levels of people through the use of computers.

Education

Computers are used in education sector through online classes, online examinations, referring e-books, online tutoring, etc. They help in increased use of audio-visual aids in the education field.

Government

In government sectors, computers are used in data processing, maintaining a database of citizens and supporting a paperless environment. The country's defense organizations have greatly benefitted from computers in their use for missile development, satellites, rocket launches, etc.

Banking

In the banking sector, computers are used to store details of customers and conduct transactions, such as withdrawal and deposit of money through ATMs. Banks have reduced manual errors and expenses to a great extent through extensive use of computers.

Business

Nowadays, computers are totally integrated into business. The main objective of business is transaction processing, which involves transactions with suppliers, employees or customers. Computers can make these transactions easy and accurate. People can analyze investments, sales, expenses, markets and other aspects of business using computers.

USES OF COMPUTER

Communication: Computers are used to send and receive emails, instant messages, and video calls. They also allow people to access social media platforms and other online communication tools.

Education: Computers are used in schools, colleges, and universities for research, writing assignments, creating presentations, and taking online classes.

Business: Computers are used in offices for various purposes, including creating and editing documents, managing accounts, and communication.

Entertainment: Computers are used for gaming, watching movies, listening to music, and accessing social media.

Healthcare: Computers are used in healthcare for medical record-keeping, managing patient information, and for medical imaging and diagnosis.

Science and research: Computers are used in scientific research for data analysis, simulations, and modelling.

Design and graphics: Computers are used in graphic design, animation, and architecture for creating digital designs and models.

E-commerce: Computers are used for online shopping and conducting business transactions on e- commerce platforms.

Transportation: Computers are used in the transportation industry for scheduling and managing logistics, as well as for navigation and GPS systems.

Manufacturing: Computers are used in manufacturing for automated processes, quality control, and inventory management.

Overall, computers are versatile tools that are used in many different industries and fields for a wide range of purposes.

FIELD PROJECT RECORD INDEX 2021-22

Program Code	Project / Programme Title	No. of students enrolled
2021-2022		
FP7	Computer Fundamentals and applications – Awareness	11
FP6	Fundamentals on Computers basics for School Children	14
FP5	Awareness on Online Transactions	22

STUDENT'S FIELD PROJECT REPORT

ON

Computer Fundamentals and applications

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Computer Fundamentals and applications – Awareness: A presentation of Computer Fundamentals Module to the Students of Govt. High School , Waddepally, Hanumakonda

To provide complete awareness about the hardware and basic electronic components of different types of computers like desk top, lap top, iPad and smart phones.

To provide complete awareness about the different types of operating systems commonly used in different types of computers and the popularly used application software for day to day applications like word processing, spreadsheets and presentation with hands on practical session.

To provide complete awareness about the usage and application of Internet Technology.

INPUT UNIT:

Input unit is defined as an input device, a piece of computer hardware apparatus used to supply a data processing system.

Input Devices

Keyboard, Mouse, Light Pen, Optical/magnetic Scanner, Touch Screen, Microphone for voice as input.

OUTPUT UNIT:

It displays the result of a program. It receives information from the CPU and presents it to the user in the desired form. The processing of extracting the data from CPU through some suitable devices is called Output.

- Output Devices

  Monitor (Visual Display Unit), Printers, Plotter, Speakers etc.,.

Digital Payment Service

Field project for creating the awareness on the usage of Unified Payment Interface in Waddepally, Hanumakonda.

Purpose: The Indian Banking sector is striving hard to popularize digital payments and has gained momentum after demonetization and digital India initiatives. To facilitate digital payments, "National Payment Corporation of India (NPCI)" launched the "Unified Payment Interface (UPI)", which is an amazing, revamped, and cost-effective breakthrough for enabling digital payment services for all. Proliferation of smart phones, technological innovations, and effective internet communications has signified the usage of mobile payment facility for Smartphone users, financial institutions and particularly the banks. To achieve paperless and cashless economy, Unified Payment Interface (UPI) is a potentially innovative way of transferring funds using a virtual payment address established by the National Payment Corporation of India (NPCI). Hence, it is needed to be assessed for its potential to contribute towards achievement of digital economy.

Introduction:

India has predominantly been a cash driven economy and the culturally the deep rooted trends of cash based purchases has widely been the economic culture. In wake of the government initiatives towards transformation towards digital economy, and many private companies emerging in the space of **Digital Transaction** solutions like the **E-Wallets, Mobile App solutions (UPIs)** , **Payment Bank** licenses issued by **RBI**, it is imperative that the market is gearing up towards more transparent and compliance based system, and of digital trends. For successful implementation of digital transactions and digital banking system, certain key processes that are very essential are **net/mobile banking**, more of e-commerce presence in rural segments, digital transaction solutions like the **PoS** solutions usage in merchandise, usage of plastic currency etc. In the effects of demonetization, use of mobile wallets and digital transactions has increased in rural India. "Illiterate people do not know how to use digital transactions, though they know how to use a **Smartphone**. But we are trying to spread financial literacy,"

DIGITAL PAYMENTS:

`Digital payments refer to "payments made using digital instruments, such as mobile payment applications, mobile wallets, and other electronic payment methods". The use of technology in performing seamless financial transactions is termed Digital Banking.

Due to the popularization of digital payment among customers, the priorities of bank clients' have been shifted from a paper-based payment method of a monetary transaction to the electronic mode. E-

payment systems in the retail business segment have made a significant contribution in promoting financial inclusion in a larger space. Ongoing progress in new technology, innovative payment products, the emergence of inhibitory market players, and regulatory interventions have aided and accelerated the growth of the digital payment ecosystem".


The primary goal of this case study is to look into the prospects of the Unified Payment Interface (UPI) and its impact. In this context, the following objectives are framed.

1. To understand the Unified Payment Interface (UPI) system's.
2. To assess UPI's position in the digital payment ecosystem.
3. To know the progression of UPI in retail digital payments.

UNIFIED PAYMENTS INTERFACE (UPI) :

Under the provisions of 'The Payments and Settlements System Act, 2007' The Reserve Bank of India (RBI) and the Indian Banks Association (IBA) established the umbrella corporation – 'National International Journal of Case Studies in Business, IT, and Payments Corporation of India (NPCI)' to operate retail payments and settlements systems in India's payment ecosystem. To facilitate digital payments NPCI has developed an innovative payment instrument called 'Unified Payment Interface (UPI)'. It is a digital payment framework designed to perform various banking functions and retail business payments using any mobile application of member banks.

Initially, UPI was operationalized as a pilot launch with 21 member banks. It was inaugurated on April 11, 2016, in Mumbai by then-RBI Governor Dr. Raghuram G Rajan. Unified Payment Interface (UPI) is a tech-enabled payment arrangement allowing money to be transferred from one bank account to another in

only a few clicks in no time. One can use any UPI client app, and a single app can be connected to multiple Bank accounts. Various payment methods like; Virtual Payment Address, Mobile Number, Account Number & IFSC, AADHAR, and QR Code can be used to send or request money. The key drivers of UPI are SIASC - Simplicity, Innovation, Adoption, Security, and Cost

RETAIL PAYMENT:

Retail transactions are referred to as transactions having low-value denominations and high in number. A variety of characteristics are exhibited by retail payment systems. They deal with numerous low value individual payments in particular. Retail payments differ from large-value transactions. They are used in a wider range of circumstances than interbank transactions, namely in-person payment using **POS**

Computers and payment over the internet. Next, in comparison to large-value transactions, retail payments use a wide range of payment instruments, including both paper-based and digital methods. Third, unlike large-value payments, which rely significantly on central bank-operated **NEFT** and **RTGS** systems, retail payments are typically handled by a variety of payment service providers such as banks, post offices, FinTech companies, and so on.

Threats: The following are the obstacles that UPI must overcome:

1. Awareness: UPI usage awareness creation among the rural and illiterate population of the country is most challenging.
2. Cash is the King: Even though many e-commerce sites have adopted digital payment methods, consumers still prefer to pay with cash. This trend is linked to concerns about cyber security in digital transactions.
3. Emergence of FinTech players: Strengthening of the traditional Banking system to compete with tech generation companies i.e., FinTech Players.
4. Grievance redressal: Pathetic Grievance redressal system for transactions performed over UPI platform.
5. Tax on UPI service: Levy of Tax/GST on UPI payment service in future days may demotivate usage of UPI platform. The regulators need to be cautious in this regard.
6. Restoration of Merchant Discount Rate: Users may shift to cash payments in retail payments after the government reinstates the exempted MDR fee on UPI payments. Considering the opportunities and challenges according to the existing scenario, the Computer Applications students with sound commerce concepts knowledge taken an initiation to create **Awareness on Online Transactions** by visiting remote places in Khammam Town. Arouse the activity and encouraged many illiterate people to use mobile Apps to perform online transactions for paytm.


GOLDEN TASTE
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