*e*IT Mirror

E-Magazine of Dept. Of Computer Sc., Golaghat Commerce College

✏️ Editorial

At the very beginning I like to thanks to those who have been continuously motivating me to publish this edition of the e-magazine. Only thinking to do something is not sufficient to fulfill it, needs additional support such as time and dedication. May be remain some lack as these two factors as obstacle in the way to prepare the magazine in due time.

Finally grow of strong willingness in mind try to start preparing this magazine. Hopping in the coming days I can continue this effort to bring next editions of this magazine with supports from my colleagues, friends and students.

Though the department has been yearly publishing a departmental wall magazine and name of the magazine is "IT Mirror", this is Electronic form of magazine from the Department of Computer Sc., GCC. In both forms of Computer Sc. Departmental magazine mainly focusing to publish Computer Sc and IT field related different aspects such as current updates in technologies and applications of IT in different dimensions in human life.

Aim of this effort to aware, recharge existing knowledge and create environment to find way of possibility in modern era, the era of IT.

Hopping reader will like the articles in the magazine and their suggestion will help us to publish next edition of the magazine in more attractive and informative way.

—- **D. Palit**

ARTICLES IN THIS ISSUE

===

Search Engine & SEO

Dibyendu Palit
Asst. Professor
HOD, Dept. Of Computer Science
Golaghat Commerce College

Search Engine- **The smart librarian on the Internet**

Before going to know about this approach of digital marketing let us try to understand what is search engine, necessity of search engine and how search engine provides us information about our expected information from Internet.

Search engine is a client program/software/application use by us in our digital gadgets such as computer or mobile to access our desire information from Internet without our knowledge of the websites providing such information. We just type some word or phrase about our desire information in search text box on search engine screen and press search button. After such action, search engine provides a list of relevant websites with direct expected information. Example of search engine: Google, Yahoo, Yandex (Russian) and many more.

Let us try to understand the necessity of a Search engine. Consider the situation of finding a particular information in a library without any idea of the name of book. It is almost impossible or time consuming matter because either you have to search each book or guess some possible books can have expected information. An prudent librarian can help you by telling the name of the book have such information. Like the prudent librarian, Search engine helps us to find information from Internet otherwise we have to know website address which provides such information.

Now question arise how a search engine provides website addresses and/or direct information about our expectation as SERP (Search Engine Result Page) of the search engine? Answer behind this secret is a technique adopted to solve our problem. Search engine drop an intelligent program on Internet to visit every website on Internet and such program is called Crawler also known as spider or bot. This program visit every website, analysis WebPages of each website based on keywords provided inside meta description of the WebPages, collect information about WebPages and websites and finally build an index file (i.e. database). When we want to search some information from Internet by providing a few words/phrases in search engine's search box and press search button, the words/phrases reach to the search engine server, then special program in the server search the database for the provided words/phrases to find the website and/webpage has such information and finally provides links of the websites/WebPages as result in SERP to help us to find information from a huge pool of information on Internet.

SEO-Search Engine Optimization

SEO is a Digital marketing technique to achieve top rank in SERP (Search Engine Result Page)

In digital marketing different approaches are apply to introduce existence of your business entity or product. Listing your website or product in SERP is one of such approaches and listing at the very beginning in SERP is a challenging task. Different strategies or efforts are applied to bring rank of a website or product high in a SERP.

In Search Engine Optimization (SEO) effort, the applied strategies can be divided into two different categories:

· On-page SEO
· Off-page SEO

Both are crucial to the success of an SEO campaign, but they're on completely different approaches to make your website's ranking high during search result of user.

On-page SEO focuses on optimizing parts of your website that are within your control, while Off-page SEO focuses on the actions taken outside of your own website to impact on ranking of your website within search engine results pages.

Effort given for On-page SEO includes providing good content, good keyword, putting keywords in correct places, giving an appropriate title for every page etc.

Techniques that are used in on-page SEO: Publish high-quality content, Optimize page titles and Meta descriptions, Optimize page content such as: Headings and content formatting, SEO Images and other multimedia elements, URL optimization, Internal links, External links, Mobile Friendly, Image Alt Text, Page loading Speed in user's browser etc.

Off-page SEO refers to SEO factors and strategies that are focused on promoting your site or brand around the web and thereby improves the position of a website on a Search Engine Results Page (SERP). Many people associate off-page SEO with link building but it is not only that. It is also used in promotion methods like blogging, website design, social bookmarking, etc.

Meta description: To understand about meta description first of all you should know that web pages are prepared by coding in different computer language such as HTML. Output of such codes is the webpage. Generally we can't see the code but result as webpage information. Meta description is **one type of information inserted during coding to prepare web pages and such information are** typically used to specify character set, page description, keywords, author of the webpage etc. Meta description will not be display on the web page, but use by search engines like Google, Yahoo etc to collect information about the web sites of the web page and later on with the help of such information do listing web sites or webpage as search result when we are searching something in a search engine.

AI- Artificial Intelligence

Uday Subba
HS 2ⁿᵈ Yr 2022 (Commerce)
Golaghat Commerce College

Artificial Intelligence (AI) is a wide-ranging branch of Computer Science concerned with building smart machines capable of performing tasks that typically require human intelligence.

AI allows machines to model, and even improve upon the capabilities of the human mind. From the development of self-driving car, AI feature in our smart mobile, washing machine, space mission, to the improvement of smart assistants like Google assistance, Siri (Siri is the world's most popular intelligent assistant) and Alexa, AI is a growing part of everyday like. As a result, many tech companies across various industries are investing in AI technologies.

AI generally works by combining large amounts of data with fast, interactive processing and intelligent algorithms (i.e. procedure consists of a set of steps to solve a problem), allowing the software to learn automatically from patterns or features in the data.

The main factors which is allowing the development of AI is the computational cost and the technical data infrastructure running behind AI but actually execution an AL in a large scale is a very complex and costly process, which requires high degree of knowledge and time.

Now a day realizing the importance of AI technology every countries stressing on AI research and development.

CLOUD COMPUTING

Pabitra Kumar Das
B.Com 6th Semester, 2022
Golaghat Commerce College

Cloud Computing Is an Emerging Trend in the field of Information Technology (IT), where Computer-Based services are delivered over the Internet or the cloud, and it is accessible to the user from anywhere using any device. Cloud computing is becoming dominant day by day. It is the most happening and driven from modern technological features in order to create a novel computing environment that can serve various growing business requirement with greater flexibility, integrity and agility. Cloud based business applications can be an inexpensive approach as it reduces the overall complexity and saves costs from expensive real-estate, hardware, network bandwidth, cooling equipment, electricity, operational costs, software licenses, physical security and human resources. Unlike traditional computing, it is scalable and consumes less time to start up. General public can access these hosted data or application from cloud servers over internet through their devices. It delivers quality services at much lower costs that often discourage small firms to invest in expensive computing resources. Instead, they can concentrate more on customer requirements, which in terms effect in competitive advantage, and produce solutions that can contribute to make new innovations. Cloud service providers are usually charge on a pay per use basis, like the way we pay for electricity usage, so better accountability and transparency of costs.

India's Annual Technology Performance FY 2022

Atul Kr Das
Asst. Professor
Dept. Of Commerce, Golaghat Commerce College

For both global and Indian end-user enterprises, technology was the panacea that enabled firms to not just keep the lights on, but also pivot their business models to online mode, adapt products & services to emerging market forces and customer needs and enable collaboration in a distributed work model.

FY2022 therefore has been a spectacular year of India's technology industry; it recorded a 15.5% growth (highest ever) to reach $227 Bn in revenue. A combination of Digital and innovation was the industry's winning formula; Platformisation and XaaS were instrumental in accelerating tech adoption; it was also the year of the start-ups – when Tech start-ups leapfrogging into scale-up mode. The industry doubled down on operational excellence to manage margin pressures; and the eCommerce sector saw the deeper penetration of the O+O model (Offline+Online).

Another landmark that the industry achieved was to cross 5 Mn in total direct workforce, a highest-ever net addition of 445K. The industry's "people first employee-centric" approach saw tech firms quickly adapt to Hybrid work models and scale up the industry's digital capacity/capability building programs.

Today, the share of digital to total revenue stands at 30-32% with 1 in 3 employees being digitally skilled stamping India's position as the Global Digital Talent Nation.

These factors have pushed India's share in global sourcing market to 59% - a testament to India's new tech value proposition.

Source: The Strategic Review: The Technology Sector in India ,retrieved from https://nasscom.in/knowledge-center/publications/technology-sector-india-2022-strategic-review on 08/12/2022 .

BLOCKCHAIN

Ankita Paul
B.com 6th Sem, 2022
Golaghat Commerce College

The advent of the internet is a blessing to mankind. It has now become an integral part of our lives. Internet is required in everything that we do either it is education, traveling, shopping, health, etc. There are several applications of the internet and they are used in different sectors. The use of these applications and technologies reduces the workload and makes the work easier. Block chain technology has also emerged because of the advent of computers and the internet. This technology came into the limelight after the discovery of crypto currency named Bit coin.

Traditionally, we perform digital transactions by storing Data in a centralized database and the transactions performed are updated one by one on the database. That is how the ticket booking websites or banks operate. The block chain technology works on the concept of Decentralized and shared database where each computer has a copy of the database. A block can be thought as a secured chunk of data or valid transaction. Each Block has some data called its header. "Block chain can be define as a system that allows a group of Connected computers to maintain a single updated and Secure ledger."

Safety and security of the transactions are ensured because all the members in the network keep a copy of the block chain and so it is not possible for a single member of the network to make changes or Alter data.

For example The PayPal platform allows users and businesses to quickly send and receive money from several countries across the world. For crypto users, you can also use the application to buy, store and exchange Bit coin, Bit coin Cash, Ethereum and Litecoin currencies. PayPal boasts over 400 million global users, making it a popular money transfer app option.

Data Engineer & Data Scientist

-The Demanding Careers

Pratiksha
B.Sc 1st Sem, 2022
D.R. College, Golaghat

Big data is changing the way we do business and creating a need for data engineers who can collect and manage large quantities of data. The **data engineer** is someone who develops, constructs, tests and maintains databases and large-scale processing systems. The **data scientist**, on the other hand, is someone who cleans, massages, and organizes (big) data. Generally speaking, the efforts that the both computer professions will need to get the data in a usable format are considerably different.

The data engineer is someone who develops, constructs, tests and maintains architectures, such as databases and large-scale processing systems. The data scientist, on the other hand, is someone who cleans, massages, and organizes (big) data.

Generally speaking, the efforts that both parties will need to do to get the data in a usable format are considerably different.

Data engineers deal with raw data that contains human, machine or instrument errors. The data might not be validated and contain suspect records; It will be unformatted and can contain codes that are system-specific.

The data engineers will need to recommend and sometimes implement ways to improve data reliability, efficiency, and quality. To do so, they will need to employ a variety of languages and tools to marry systems together or try to hunt down opportunities to acquire new data from other systems so that the system-specific codes, for example, can become information in further processing by data scientists.

Very closely related to these two is the fact that data engineers will need to ensure that the architecture that is in place supports the requirements of the data scientists and the stakeholders, the business.

Lastly, to deliver the data to the data science team, the data engineering team will need to develop data set processes for data modeling, mining, and production.

In general, the data science industry is made up of professionals that come from all different types of backgrounds: it is not uncommon that physicists, biologists, or meteorologists find their way to data science. Others have made a career switch to data science and come from web development, database administration, etc.

Data Scientists' Responsibilities

Data scientists will usually already get data that has passed a first round of cleaning and manipulation, which they can use to feed to sophisticated analytics programs and machine learning and statistical methods to prepare data for use in predictive and prescriptive modeling. Of course, to build models, they need to do research industry and business questions, and they will need to leverage

large volumes of data from internal and external sources to answer business needs. This also sometimes involves exploring and examining data to find hidden patterns.

Once data scientists have done the analyses, they will need to present a clear story to the key stakeholders and when the results get accepted, they will need to make sure that the work is automated so that the insights can be delivered to the business stakeholders on a daily, monthly or yearly basis.

It is clear that both parties need to work together to wrangle the data and provide insights to business-critical decisions. There is a clear overlap in skillsets, but the two are gradually becoming more distinct in the industry: while the data engineer will work with database systems, data API's and tools for ETL purposes, and will be involved in data modeling and setting up data warehouse solutions, the data scientist needs to know about stats, math and machine learning to build predictive models.

The data scientist needs to be aware of distributed computing, as he will need to gain access to the data that has been processed by the data engineering team, but he or she'll also need to be able to report to the business stakeholders: a focus on storytelling and visualization is essential.

Educational Background

Besides all of this, data scientists and data engineers might also have something in common: their Computer Science backgrounds. This study area is widely popular for both professions. Of course, you'll also see that data scientists have often studied econometrics, mathematics, statistics and operations research. They often have a little bit more business acumen than data engineers. You often see that data engineers also come from engineering backgrounds, and more often than not, they have had some prior education in computer engineering.

However, all of this doesn't mean at all that you won't find data engineers that have gathered knowledge in operations and business acumen from prior studies.

Sources:
- **https://www.datacamp.com**
- **https://www.coursera.org**

UPI—Unified Payments Interface

Dibyendu Palit
Asst. Professor
HOD, Dept. Of Computer Science
Golaghat Commerce College

The way we undertake money transactions in India is expected to change dramatically with the introduction of the Unified Payment Interface (UPI), which aims to move the country towards a more cashless economy at the retail level. Developed by The National Payment Corporation of India (NPCI), the payment interface is expected to be a game changer in mobile banking. The Reserve Bank of India (RBI) in its Payment System Vision Document (2012-2015) had mentioned the use of UPI for achieving its goal of a lower cash-intensive society and financial inclusion using the latest technology.

UPI is important for implementation of the JAM (Jhan Dhan Yojana, Aadhar and Mobile) trinity which Finance Minister Arun Jaitley spoke of during his Union Budget presentation. Raj Jain, chairman and managing director of RS Software, the company that helped NPCI launch UPI, said: "The launch of UPI will go down in history as amongst the most important initiatives to transform India."

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience.

With the above context in mind, NPCI (National Payments Corporation of India) conducted a pilot launch with 21 member banks. The pilot launch was on 11th April 2016 by Dr. Raghuram G Rajan, Governor, RBI at Mumbai. Banks have started to upload their UPI enabled Apps on Google Play store from 25th August, 2016 onwards.

News About UPI Payment App, 6 October 2022

UPI records 11.17 trillion transactions in September

According to the most recent National Payments Corporation of India (NPCI) data, the Unified Payments Interface (UPI) platform completed 6.8 billion transactions in September, totalling Rs.11.17 trillion. On a month-to-month (MoM) basis, it has increased by 3.05% in volume and 4.06% in value. Year on year (YoY), the volume of transactions increased by 85.55%, while the value rose by 70.61%.

What are the key drivers of UPI?

The NPCI document points out that the key goal of implementing UPI was to simplify and provide a single interface across all segments. The key drivers for this are:

Simplicity: The thinking behind the UPI was to make the application as simple as possible. Paying and receiving payments should be as easy as swiping a phonebook entry and making a call on mobile phone, says the document. An account holder should be able to send and receive money from their mobile phone with just an identifier without having any other bank/account details. All they need to do is to "pay to" or "collect from" a "payment address" (such as Aadhaar number, Mobile number, RuPay Card, virtual payment address, etc.) with a single click.

Innovation: The idea here was to come up with a solution so that innovations on both payee and payer side can evolve without having to change the whole interface. It should allow application providers to take advantage of enhancements in mobile devices, provide integrated payments on new consumer devices provide innovative user interface features, take advantage of newer authentication services, etc.

Adoption: Given the size of the potential user base, the key was to have a solution which should not crash and be scalable to a billion users and enable large scale adoption. It should allow gradual adoption across Smartphone and feature phone users and provide full interoperability across all payment players, phones, and use cases. People using Smartphone should be able to send money to others who are not yet using any mobile application and vice versa. Similarly, it should allow full interoperability between multiple identifiers such as Aadhaar number, mobile number, and new virtual payment addresses.

Security: One of the key areas of concern among users is security. The solution had to provide end-to-end strong security and data protection. The trick here was not to reveal too much data like banking or other personal details which could be misused. For convenience, the solution also had to offer 1-click 2-factor authentication, protection from phishing, risk scoring, etc.

Cost: India is a cost-conscious country and any product with a high cost is likely to have a short life. Since mobile phone number is used as an authentication (credential capture) device, use of virtual payment addresses, and use of third party portable authentication schemes such as Aadhaar should allow both acquiring side and issuing side cost to be driven down.

Who can use UPI?

Anyone with a mobile phone and a bank account will be able to take benefit of UPI for either receiving or transferring money.

How is it different from the existing system?

In the present system, in order to make any transaction the account holder's bank IFSC code is needed, which reveals bank account details. But using UPI, all one needs is a virtual address which is unique to you and it camouflages the bank and personal detail of the user or the receiver behind it.

What is the level of security in UPI?

UPI has **a single click-two factor authentication system** which means that with one click the transaction is authenticated at two levels. The user will need a mobile phone with a mobile pin called MPIN and a virtual ID offered by the provider. With a click the transaction is checked if the mobile pin matches with the virtual address only then does the transaction goes through. For example, suppose you have bought some goods at a mall and need to make a payment for it. You have to inform your virtual address to the person at the counter who enters the address in his or her system. The mall's system then sends an authentication message to the virtual address which is mapped to your mobile. Only after receiving the message and acknowledging it by entering your password is the transaction complete and the amount debited from your bank account or wallet. Virtual addresses offered by the provider need not be permanent. For example, a provider may offer "one time use" addresses or "amount/time limited" addresses to customers. In addition, innovative usage of virtual addresses such as "limit to specific payees" (e.g., a virtual address that is white listed only for transactions from IRCTC) can help increase security without sacrificing convenience. PSPs can allow their customers to create any number of virtual payment addresses and allow attaching various authorisation rules to them.

How is UPI unique?

- Immediate money transfer through mobile device round the clock 24*7 and 365 days.
- Single mobile application for accessing different bank accounts.
- Single Click 2 Factor Authentication – Aligned with the Regulatory guidelines, yet provides for a very strong feature of seamless single click payment.
- Virtual address of the customer for Pull & Push provides for incremental security with the customer not required to enter the details such as Card no, Account number; IFSC etc.
- QR Code
- Best answer to Cash on Delivery hassle, running to an ATM or rendering exact amount.
- Merchant Payment with Single Application or In-App Payments.
- Utility Bill Payments, Over the Counter Payments, QR Code (Scan and Pay) based payments.
- Donations, Collections, Disbursements Scalable.
- Raising Complaint from Mobile App directly.

Participants in UPI

- Payer PSP (Payment Service Providers) is a banking company that is a member of UPI and connects to the UPI platform for providing UPI payment facility to the PSP and TPAP (Third Party Application Providers e.g. Google Pay) which in turn enables the users and merchants to complete payment transactions over UPI. TPAP is a service provider to the PSP and participates in UPI through PSP.
- Payee PSP
- Remitter Bank
- Beneficiary Bank
- NPCI
- Bank Account holders
- Merchants

Roles and Responsibilities of NPCI, PSP and TPAPs in UPI

- ## Roles & Responsibilities of NPCI
    a) NPCI owns and operates the Unified Payments Interface (UPI) platform.
    b) NPCI prescribes rules, regulations, guidelines, and the respective roles, responsibilities and liabilities of the participants, with respect to UPI. This also includes transaction processing and settlement, dispute management and clearing cut-offs for settlement.
    c) NPCI approves the participation of Issuer Banks, PSP Banks, Third Party Application Providers (TPAP) and Prepaid Payment Instrument issuers (PPIs) in UPI.
    d) NPCI provides a safe, secure and efficient UPI system and network.
    e) NPCI provides online transaction routing, processing and settlement services to members participating in UPI.
    f) NPCI can, either directly or through a third party, conduct audit on UPI participants and call for data, information and records, in relation to their participation in UPI.
    g) NPCI provides the banks participating in UPI access to system where they can download reports, raise charge backs, update the status of UPI transactions etc.

- ## Roles & responsibilities of PSP Bank
    a) PSP Bank is a member of UPI and connects to the UPI platform for availing UPI payment facility and providing the same to the TPAP which in turn enables the end-user customers / merchants to make and accept UPI payments.
    b) PSP Bank, either through its own app or TPAP's app, on-boards and registers the end-user customers on UPI and links their bank accounts to their respective UPI ID.
    c) PSP Bank is responsible for authentication of the end-user customer at the time of registration of such customer, either through its own app or TPAP's app.
    d) PSP Bank engages and on-boards the TPAPs to make the TPAP's UPI app available to the end-user customers.
    e) PSP Bank has to ensure that TPAP and its systems are adequately secure to function on UPI platform)
    f) PSP Bank is responsible to ensure that UPI app and systems of TPAP are audited to safeguard security and integrity of the data and information of the end-user customer including UPI transaction data as well as UPI app security
    g) PSP Bank has to store all the payments data including UPI Transaction Data collected for the purpose of facilitating UPI transactions, only in India
    h) PSP Bank is responsible to give all UPI customers an option to choose any bank account from the list of Banks available on UPI platform for linking with the customer's UPI ID.
    i) PSP Bank is responsible to put in place a grievance redressal mechanism for resolving complaints and disputes raised by the end-user customer

Roles & responsibilities of TPAP
    a) TPAP is a service provider and participates in UPI through PSP Bank
    b) TPAP is responsible to comply with all the requirements prescribed by PSP Bank and NPCI in relation to TPAP's participation in UPI
    c) TPAP is responsible to ensure that its systems are adequately secure to function on the UPI platform

d) TPAP is responsible to comply with all applicable laws, rules, regulations and guidelines etc. prescribed by any statutory or regulatory authority in relation to UPI and TPAP's participation on the UPI platform including all circulars and guidelines issued by NPCI in this regard

e) TPAP has to store all the payments data including UPI Transaction Data collected by TPAP for the purpose of facilitating UPI transactions, only in India

f) TPAP is responsible to facilitate RBI, NPCI and other agencies nominated by RBI/ NPCI, to access the data, information, systems of TPAP related to UPI and carry out audits of TPAP, as and when required by RBI and NPCI

g) TPAP shall facilitate the end-user customer with an option to raise grievance through the TPAP's grievance redressal facility made available through TPAP's UPI app or website and such other channels as may be deemed appropriate by the TPAP like email, messaging platform, IVR etc.

UPI Transaction Type:

Basically there are two types of transactions in UPI:

PUSH - Send Money

- User logs in to UPI application
- After successful login, user selects the option of Send Money/PaymentUser enters beneficiary's/Payee virtual id, amount and selects account to be debited
- User gets confirmation screen to review the payment details and clicks on Confirm
- User now enters UPI PIN
- User gets successful or failure message

Can learn from the video:
https://youtu.be/AWlrP3-lmL4

PULL - Request Money

- User logs in to his bank's UPI application
- After successful login, user selects the option of collect money (request for payment)
- User enters remitters/payers virtual id, amount and account to be credited
- User gets confirmation screen to review the payment details and clicks on confirm
- The payer will get the notification on his mobile for request money

Can learn for the video:

https://youtu.be/gjy1wo4Xj9k

* UPI can be accessed on all platforms viz. Android / iOS – The Apps have been developed by members on Android 4.2.2 and above/iOS 8.1 and above platforms.

UPI - Benefits to the Ecosystem participants

Banks:

- Single click Two Factor authentication
- Universal Application for transaction
- Leveraging existing infrastructure
- Safer, Secured and Innovative
- Payment basis Single/ Unique Identifier
- Enable seamless merchant transactions

Customers:

- Round the clock availability
- Single Application for accessing different bank accounts
- Use of Virtual ID is more secure, no credential sharing
- Single click authentication
- Raise Complaint from Mobile App directly

Merchants:

- Seamless fund collection from customers - single identifiers
- No risk of storing customer's virtual address like in Cards
- Tap customers not having credit/debit cards
- Suitable for e-Com & m-Com transaction
- Resolves the COD collection problem
- Single click 2FA facility to the customer - seamless Pull
- In-App Payments (IAP)

Services Provided by UPI system

Financial Transactions:

UPI supports the following financial transactions viz.

- Pay Request: A Pay Request is a transaction where the initiating customer is pushing funds to the intended beneficiary. Payment Addresses include Mobile Number & MMID, Account Number & IFSC and Virtual ID
- Collect Request: A Collect Request is a transaction where the customer is pulling funds from the intended remitter by using Virtual ID.

Non-Financial Transactions:

UPI will support following types of non-financial transactions on any PSP App viz.

- Mobile Banking Registration*
- Generate One Time Password (OTP)
- Set/Change PIN
- Check Transaction Status
- Raise Dispute/Raise query

Apps with UPI Feature in India

Sr. No.	Third Party UPI App	PSP Banks
1	Amazon Pay	Axis Bank
		Yes Bank
2	Bajaj Finserv	Axis Bank
3	Bajaj MARKETS (Finserv Markets)	Axis Bank
4	CoinTab	Federal Bank
5	CRED	Axis Bank
6	Fave (Pinelabs)	IDFC FIRST Bank
7	Goibibo	ICICI bank
8	Google Pay	Axis Bank
		HDFC Bank
		ICICI
		State Bank of India
9	Groww	Axis Bank
10	Jupiter Money	Axis Bank Limited
11	Make My Trip	ICICI
		IndusInd Bank
12	MobiKwik	HDFC Bank
13	Phonepe	Yes Bank
		ICICI Bank
		Axis Bank
14	Samsung Pay	Axis Bank
15	Slash	ICICI Bank
16	slice	Axis Bank
17	SuperPay (Chintamoney)	Kotak Mahindra Bank
18	TataNeu	ICICI Bank
19	Timepay	The Cosmos Co-Operative Bank Ltd.
20	tvam (Atyati)	Yes Bank
21	Ultracash	IDFC Bank
22	WhatsApp*	ICICI Bank

Source: https://www.npci.org.in

Photo Gallery

Wall Magazine

Dept. Of Computer, GCC
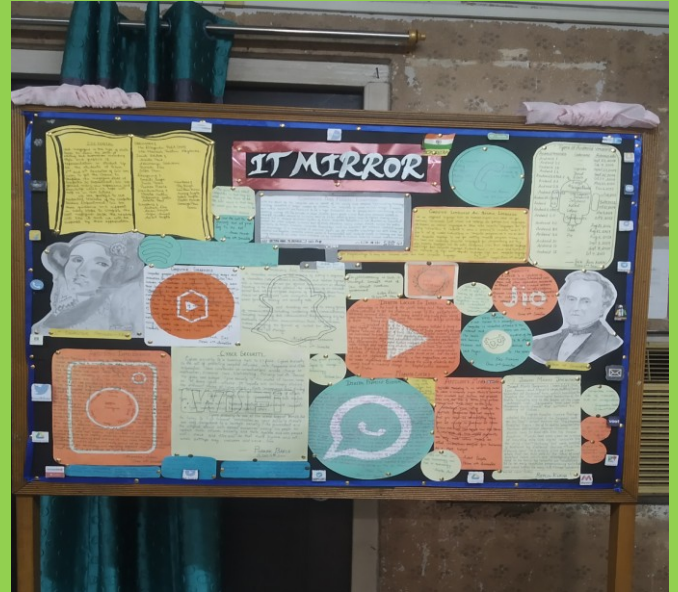
Practical Classes in Computer Lab.,

Golaghat Commerce College