DEPARTMENT OF COMPUTER APPLICATIONS

DEPARTMENT VISION

- To develop professionals having good knowledge skills and attitude to be competent enough in the global environment, to serve the society and IT industry.

DEPARTMENT MISSION

- To establish an environment for education and skill development on par with global environment.
- Providing state of art facilities, to achieve high quality in computer applications.
- To inculcate social and ethical responsibilities among the students to serve society and industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO'S)

PEO 1 : Educate students to be successful computer application professional in a global environment.

PEO 2 : Enhance the student's prospects for a career in academics and provide access to higher degrees by research programs and practice lifelong learning.

PEO 3 : Provide exposure to cutting edge technologies and training to work on multidisciplinary projects in a team.

PEO 4: Develop a sense of social, ethical and professional responsibility with a capacity to demonstrate an understanding and application of the human dimension of technology and impact on mankind.

PROGRAMME OUTCOMES (PO'S)

PO 1 : An ability to apply knowledge of Mathematics, Data Structures, Algorithmic principles, Database Management & Programming Languages.

PO 2 : An ability to use to Schedule and Manage a Project.

PO 3 : An ability to use techniques and skills necessary for Computer Applications.

PO 4 : An ability to design and conduct experiments, as well as to analyze and interpret data.

PO 5 : An ability to design, implement and evaluate a computer based system, component or process to meet desired needs.

PO 6 : An ability to model and simulate real time systems to conduct experiments and analyze using modern tools.

PO 7 : An ability to design and construct a software system to meet desired needs, within realistic constraints such as economic, environmental, social, ethical, health and safety and sustainability.

PO 8:An understanding of professional, legal and ethical issues and responsibilities as it pertains to computer applications.

SIR M.VISVESVARAYA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS

PRAGATI

MCA NEWSLETTER (2017-18)

CONTENTS:

The department was set up in 1998 with an annual intake of 30 students and subsequently enhanced to 60 over the years. The department has well-equipped laboratories with internet facility and good library. If offers an excellent academic students for holistic personality development, capability building in niche areas and confidence to take up the challenges of the dynamic socio-technical world. The departmental forum "PRAYOG" facilitates exposure to state-of-art industrial practices. The department organizes seminar series and workshops by eminent personalities from industry, academia and professional bodies to upgrade the technical and teaching skills of the staff. The department encourages participating in National/International conferences to present papers and learning upcoming knowledge. The department has a team of experienced and competent faculty members. The department has associated with Computer Society of India, a professional body, where all the MCA students possess membership, which helps them to cater the needs of the industry by attending CSI sponsored workshop/ seminars.

TEACHING STAFFS:
Dr. Manjula Sanjay(HOD), Ms. Lakshmi.K, Ms. Sujatha Anand, Ms. Latha.R, Ms. Vani Harave, Mr. Muthuramalingam.B, Mr. Raghavendra Rao.B.G, Mr. Vasantha.S, Ms. Sneha Bharti, Ms. Komala.R.

NON-TEACHING STAFFS: Mr. Prabhakara.S, Ms. Ashwini.R, Ms. Nivedita.A, Mr.Lakshmappa.

PRINCIPAL MESSAGE:

HOD MESSAGE:

It gives me great pleasure to congratulate staff and students of department of Computer Applications for the publication of our newsletter “PRAGATI”. Newsletter is an amalgamation of all the events held in the department during April 2017-2018 and it plays an instrumental role in providing a greater exposure of the achievements accomplished by the students and the faculty.

We are very much grateful to our management and Principal for their continuous support, inspiration and encouragement in bringing out this newsletter.

EVENTS:

TECHNICAL FEST AVYUKTA-2k18 - April 11th, 2018

Target Audience: Under-Graduate Students

Chief Guest: Sri Gopala Krishna Bylahalli, Vice president , Digital Engineering , Cognizant Technology Solutions, Bengaluru.

WORKSHOP

TESTING TECHNIQUES TO TEST ARCHITECTURE - MARCH 26th & 27th ,2018

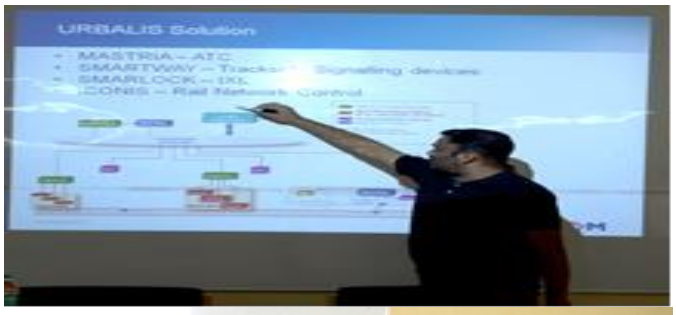
Target Audience: 4th Semester Students

Resource Person: Ms. Lakshmi Rajesh, Chief Technology & Strategy Officer, iFocus, Bengaluru.

TECHNICAL TALK
AUTOMATION AND CONTROL OF METRO TRAINS - February 24th ,2018.

Target Audience: 4th Semester Students.

Resource Person: Mr. Muralithara Sabapathy, Associate Lead Engineer, Alstom Transport India ltd., Bengaluru.

TECHNICAL TALK
DATA HANDLING AND RELATED JOB OPPORTUNITIES IN IT INDUSTRY
December 8th ,2017

Target Audience: 1st Semester Students

Resource Person: Mr. Amrut Tharapatti, Technical Leader, Royal Bank of Scotland, India Development Centre (P) Ltd. Bangalore.




FRESHER'S DAY - 25th October, 2017

Target Audience: 1st semester Students and 3rd semester lateral entry Students.

Chief Guest: Dr.Vasudev.T, professor, Dept of Computer Applications, Maharaja Institute of Technology, Mysore.

STAFF FOCUS:

Dr. Manjula Sanjay Koti:

- Member of Board of Examiner for Visvesvaraya Technological University, Belagavi for the academic year 2017-2018.
- Received Excellence Teaching in Higher Education award from International Research Institute, Bengaluru on March 8, 2018.

- Advisory Technical Committee member for the National Conference on Computer Applications and Communication system, BTLIT, Bengaluru, 2018
- Technical program Committee member for the International Conference on Next Generation Computing Technologies, University of Petroleum and Energy Studies, Dehradun, India, 2017
- Dr. Manjula Sanjay, A.H. Lalitha, BinduMalini, "A novel method for captcha as graphical user authentication using SHA-1 algorithm", International Journal of Engineering and Applications, Vol 12, Issue 1, Pg 191-199, 2018.

K. Lakshmi:

- K.Lakshmi, Dr.T.Meyappan, participated in "Spanning Tree-Properties, Algorithms and Applications" International Journal of Computer Sciences and Engineering , Volume-5, Issue-10 , PP : 54-58,2017.
- Participated in "Efficient Mining of Frequent Subgraphs", International Conference on Current Trends in Advanced Computing , E-ISBN -978-1-5090-4997-4 IEEE-Xplore 11/01/2018 , PP: 29-31,2017.
- Participated in FDP on " Latest Research Trends in Industry " organized by TCS at Dr. Ambedkar Institute of Technology, Bangalore on 10/2/2018.

Sujatha Anand:

- Participated in FDP on “Current trends in Engg. Mathematics & its Applications” held at SIR MVIT, Bangalore on 1/9/2017.

R.Latha:

- Participated in ”Internet of things for Innovative, Improved and Effective smart transport Management System in Smart city”, International Journal of Innovative Research in Computer and Communication Engineering , Volume 5, Issue 8 , PP : 4738-14742,2017.

Vani Harave:

- Participated in “Internet of Things for Innovative, Improved and Effective Smart Transport Management System in Smart City”, International Journal of Innovative Research in Computer and Communication Engineering , Volume 5, Issue 8 , PP : 14738-14742,2017.
- Participated in FDP on “Current trends in Engg. Mathematics & its Applications” held at SIR MVIT,BANGALORE on 1/9/2017.

Raghavendra Rao B G:

- Participated in“ Impact of Ajax in Web Application development”, International Conference on Computer Science and Technology allies in Research , 5 , PP : 129-133,2017.

Sneha Bharti:

- Participated in “Internet of Things for Innovative, Improved and Effective Smart Transport Management System in Smart City”, International Journal of Innovative Research in Computer and Communication Engineering , Volume 5, Issue 8 , PP : 14738-14742,2017.
- Participated in FDP on “Current trends in Engg. Mathematics & its Applications” held at SIR MVIT, BANGALORE on 1/9/2017.

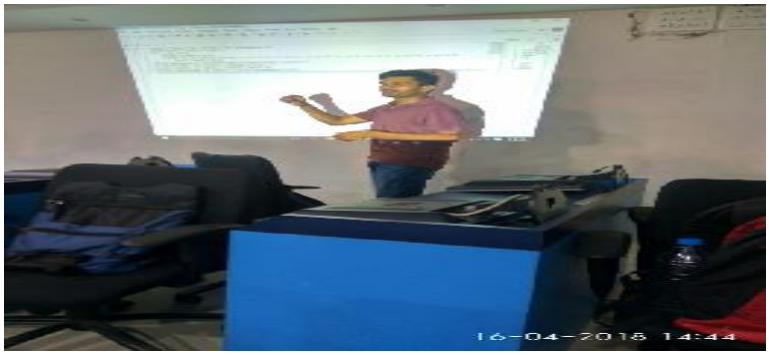
Komala R:

- Participated in FDP on “Cloud computing with Amazon Web Services” held at MSRIT, Bangalore during 31/7/2017 to 5/8/2017.

STUDENT FOCUS:

Co curricular activities:

- Shananth Kumar N, Veeranna D Mallur, Vanitha S. of 4th semester organized one-day workshop on 16/04/2018 , "Python Programming", at Indo-Asian Academy of Management Studies, Bangalore.



- N.S. Akshay Bharadwaj, Shreedhara N.Hegde, Vinayaka Bhat T.A, Pallavi P,Chinmayi Suryamath, of 4th semester and Nikita Joseph of 6th Semester participated in "Cloud Based IOT Program" at MSRIT , Bangalore during 16th to 21st Jan 2018.

- Venkatesh K.R of 4th Semester participated in a Workshop on "Machine Learning by Python" at Open Cube Labs , Bangalore on 1/14/2018

Art & Craft

Art by Sagar.S
4th sem MCA

Art & Craft

Wall-paintings by
Vani Harave
Associate Professor.
Dept of MCA.

SPORTS ACTIVITIES:

R.Latha & Vani Harave

- Participated in Sir MVIT Annual Sports Day and won prizes.

S. Prabhakara

- Participated in Sir MVIT Annual Sports Day and won prizes.

Satish R.

- Participated in Sir MVIT Annual Sports Day & won silver medal in 400 mts running race.
- Represented our college in VTU Bangalore north zone kho-kho tournament held at SJCIT college dated 6th and 7th April 2018.

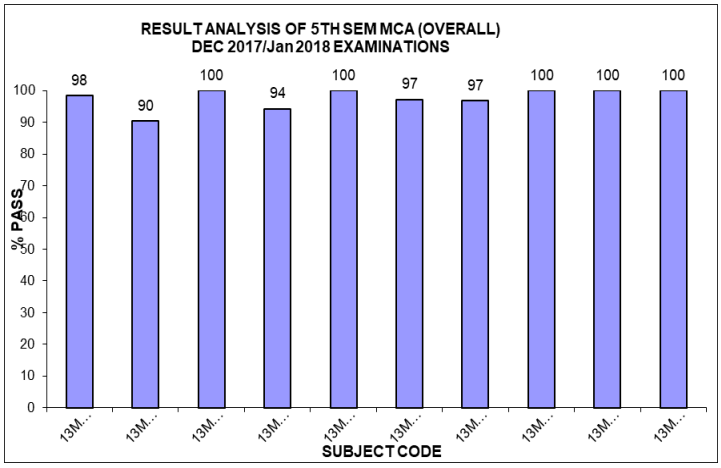
- Participated in intercollege kho-kho tournament organized by RV college dated 24th Feb 2018.
- Participated in 5k marathon dated 4th march -2018.

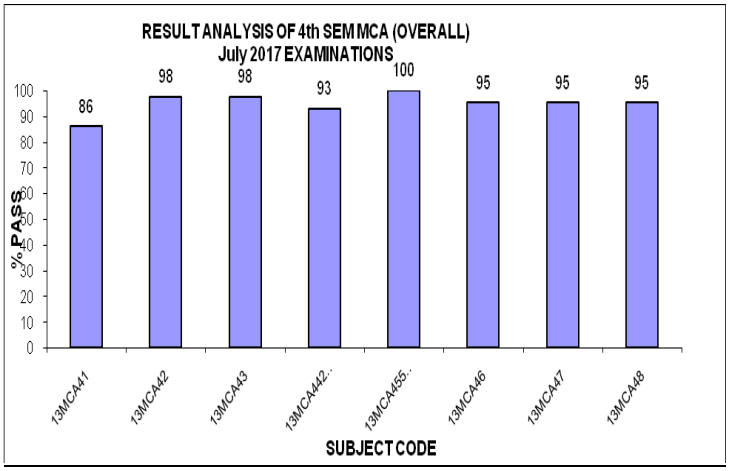
Sagar S.

- Participated in Sir MVIT Annual Sports Day & won silver medal in Javelin Throw.
- Represented South zone as player in 1st edition of National Inter-zonal senior men Rugby 15's championship 2018 held at GNDU Amrithsar Punjab dated 10-15 April 2018.

- Represented our college in VTU Bangalore North zone kabbadi tournament held at Dr. T. Thimmaiah Institute Of Technology dated 21 st and 22nd April 2018.
- Represented our college in Intercollege taekwondo championship held at Vemmana Institute Of Technology Koramangala in October 2017.
- Represented Karnataka in South zone senior Rugby 7's Championship.

RESULTS:



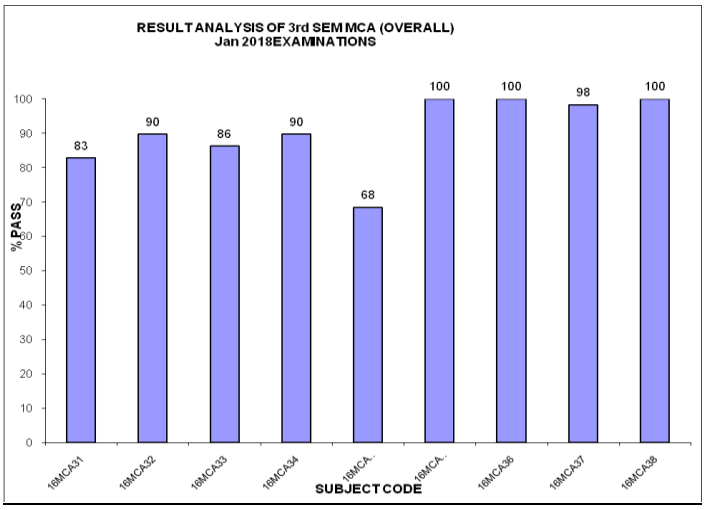


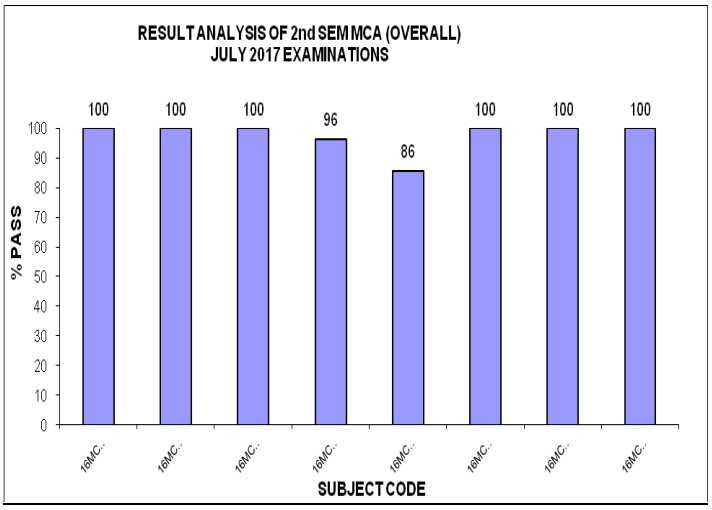
V SEM

AKSHATA NADKARNI
80.81%

NITESH D NAYAK
80%

MANJUNATH S
78%





III SEM

ANSHU AGARWAL

84%

N S AKSHAY BHARADWAJ

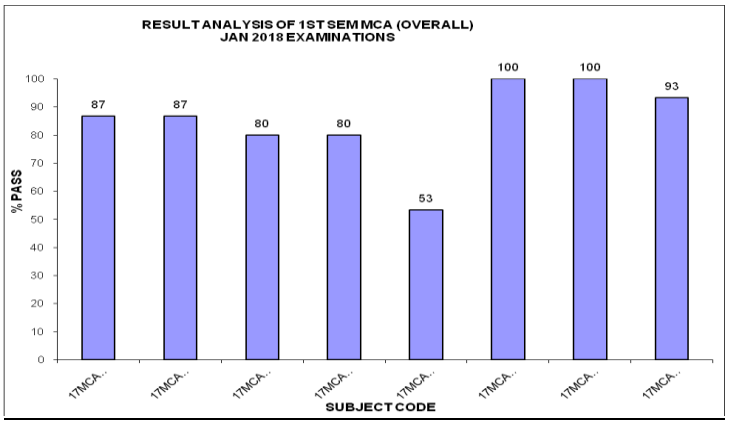
81%

ASHISH KUMAR

80%

TEJASHWINI B.M

80%



I SEM

SHREYA SONI

81.88%

POONAM PATEL

81.25%

PRANAVI B V

75.75%

TECH NEWS:

Best Web Application Development Frameworks

1) Angular JS

Angular JS is a open source , Javascript framework suitable for single page web page applications. It got to be the top place in every developer's favorite list based on its standard consistency and adaptability. From version 1 to version 5, every release of its newer version has got the most resolved and rectified solution from its older version which makes the developer have a convenient work phase.

2) Laravel

It is a Open source PHP framework. Its special features are dedicated dependency managing system, ability to access relational databases and Built-in three-tier architecture – Model-View-Controller(MVC).

3) React JS

ReactJS is an open source, and it's JavaScript library kept up by Facebook vast designers' group. This library is utilized broadly in making the single interface for web programs. This whole system developed to the point of setting up large projects with the information that changes continuously with the fixed time.

4) Node JS

Node.js is an open-source, cross-platform JavaScript run-time environment that executes JavaScript code server-side. Node JS has been the designer's most loved for a long time and still expected to remain the same. It's a complete environment that enables us to create extensible and fast network applications. Its suitable for those who are looking for the precise JavaScript environment.

5) Ruby on Rails

Ruby on Rails is open source software, so not only is it free to use, you can also help make it better. Ruby on Rails is marked as one of the popular frameworks for developers. If you want to enjoy your work, then you can take a chance for Ruby on Rails. It will make you excited & happy at the workplace with its funny programming proceedings.

6) Symphony

Symphony is an XSLT-powered open source content management system.Symfony is a PHP web utility structure that consists of reusable PHP components/libraries. The latest version of symphony allows developers to change the business requirements. Also, Symfony adopted with the most massive open source platforms like Drupal, PHP BB.

7) ASP.Net

ASP.NET is an open-source server-side web application framework designed for web development to produce dynamic web pages. With the open-source system, it occupied the matter of 15% of the marketplace.

8) Yii

Yii is an open source, object-oriented component based MVC PHP web utility structure. An open-source Internet framework that developed by PHP5 which uphold DRY design and supports fast building. Yii attempts to streamline utility building and helps to check whether the environment is friendly or extensible to work.

9) MeteorJS

Meteor, or MeteorJS, is a free and open-source isomorphic JavaScript web framework written using Node.js. Meteor allows for rapid prototyping and produces cross-platform (Android, iOS, Web) code. Meteor is developed with the collaborative ideas from various frameworks to provide a simple way for developing programs. It's flexible and calls for considerably less code, for the high quality and flexible application.

10) CakePHP

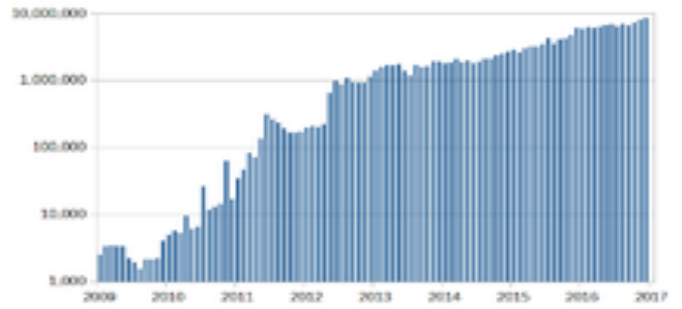
CakePHP is an open-source web, an ex-pedient building system that makes advanced web programs more compelling, snappier and requires substantially less code. And also it works based on Model – view– controller (MVC).

Compiled by,
K.Lakshmi,
Associate Professor. Dept of MCA.

Bitcoin

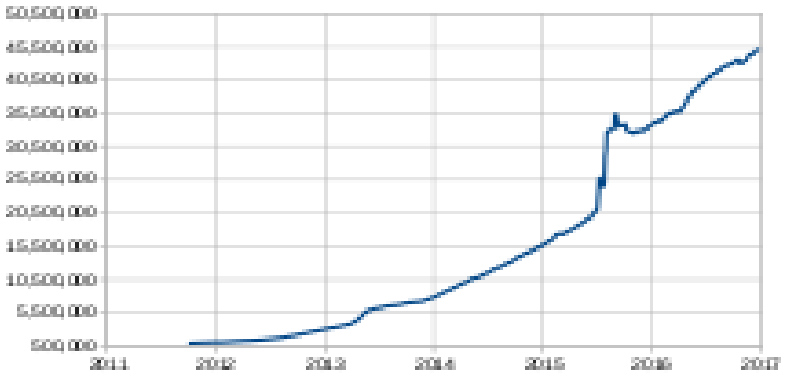
Bitcoin is a crypto currency and worldwide payment system. It is the first decentralized digital currency, as the system works without a central bank or single administrator. The network is peer-to-peer and transactions take place between users directly, without an intermediary. These transactions are verified by network nodes through the use of cryptography and recorded in a public distributed ledger called a blockchain. Bitcoin was invented by an unknown person or group of people under the name Satoshi Nakamoto and released as open-source software in 2009.

The blockchain is a public ledger that records bitcoin transactions. Transactions are defined using a Forth-like scripting language. Transactions consist of one or more inputs and one or more outputs. When a user sends bitcoins, the user designates each address and the amount of bitcoin being sent to that address in an output. To prevent double spending, each input must refer to a previous unspent output in the blockchain. The use of multiple inputs corresponds to the use of multiple coins in a cash transaction. Since transactions can have multiple outputs, users can send bitcoins to multiple recipients in one transaction. As in a cash transaction, the sum of inputs (coins used to pay) can exceed the intended sum of payments. In such a case, an additional output is used, returning the change back to the payer. Any input satoshis not accounted for in the transaction outputs become the transaction fee.



Number of bitcoin transactions per month (logarithmic scale)

A novel solution accomplishes this without any trusted central authority: the maintenance of the blockchain is performed by a network of communicating nodes running bitcoin software. Transactions of the form payer X sends Y bitcoins to payee *Z* are broadcast to this network using readily available software applications. Network nodes can validate transactions, add them to their copy of the ledger, and then broadcast these ledger additions to other nodes. The blockchain is a distributed database – to achieve independent verification of the chain of ownership of any and every bitcoin amount, each network node stores its own copy of the blockchain. Approximately six times per hour, a new group of accepted transactions, a block, is created, added to the blockchain, and quickly published to all nodes. This allows bitcoin software to determine when a particular bitcoin amount has been spent, which is necessary in order to prevent double-spending in an environment without central oversight. Whereas a conventional ledger records the transfers of actual bills or promissory notes that exist apart from it, the blockchain is the only place that bitcoins can be said to exist in the form of unspent outputs of transactions.



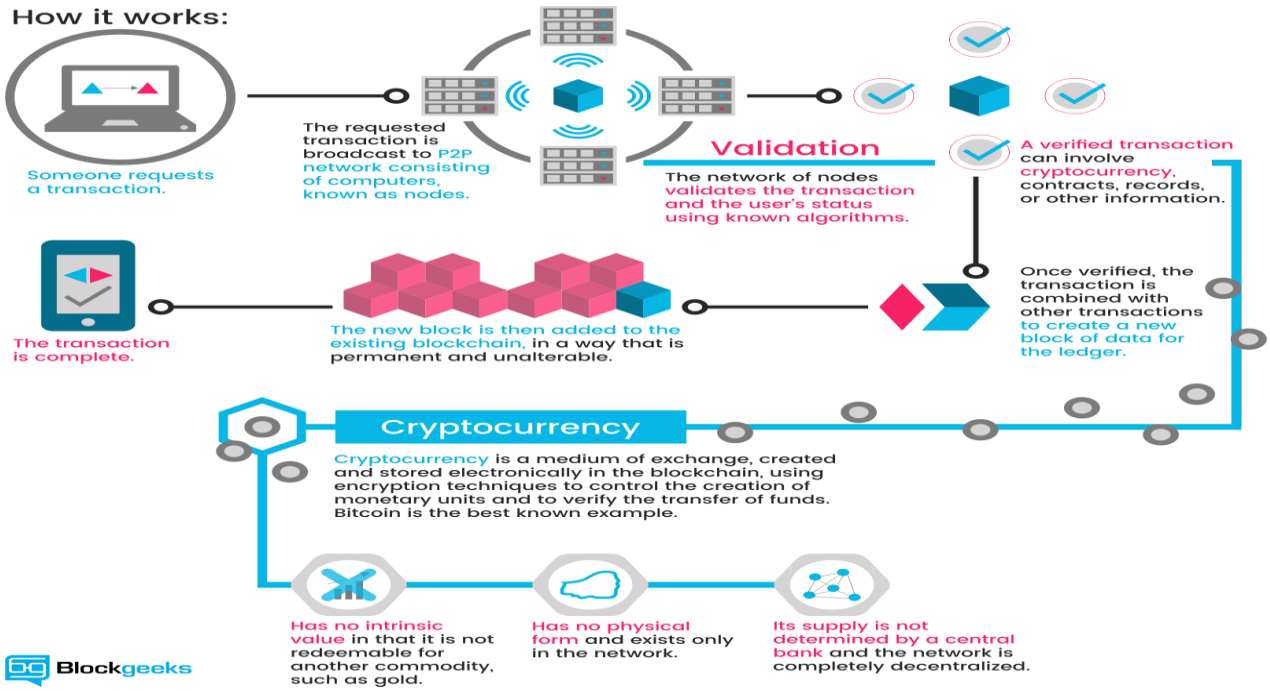
Number of unspent transaction outputs

In the blockchain, bitcoins are registered to bitcoin addresses. Creating a bitcoin address is nothing more than picking a random valid private key and computing the corresponding bitcoin address. This computation can be done in a split second. But the reverse (computing the private key of a given bitcoin address) is mathematically unfeasible and so users can tell others and make public a bitcoin address without compromising its corresponding private key. The network verifies the signature using the public key. If the private key is lost, the bitcoin network will not recognize any other evidence of ownership, the coins are then unusable, and effectively lost. For example, in 2013 one user claimed to have lost 7,500 bitcoins, worth $7.5 million at the time, when he accidentally discarded a hard drive containing his private key. A backup of his key(s) would have prevented this.

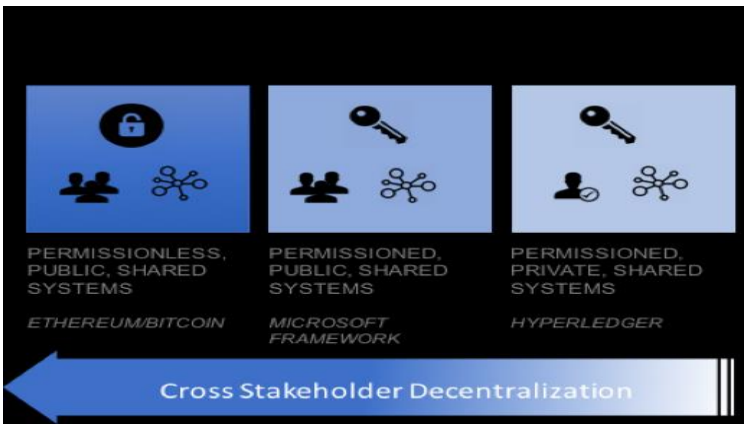
Compiled by
R. Latha,
Associate Professor,
Dept of MCA.

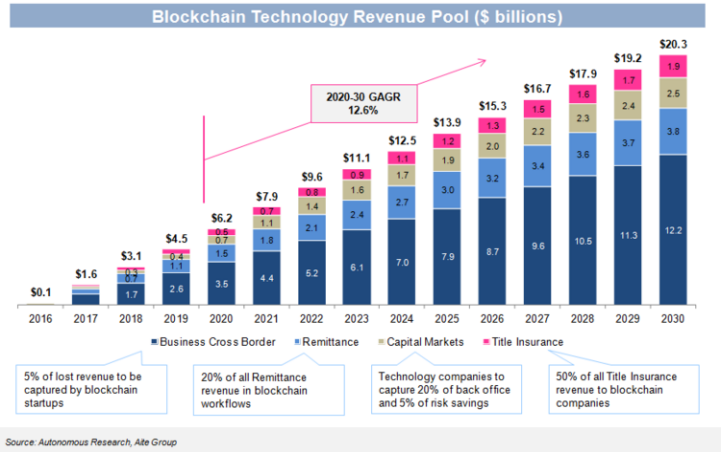
Blockchain Technology

Blockchain is a new technology, based on hashing, which is at the foundation of the platforms for trading cryptocurrencies and executing smart contracts. Blockchain was invented by Satoshi Nakamoto in 2008 for use in the cryptocurrency bitcoin, as its public transaction ledger. The invention of the blockchain for bitcoin made it the first digital currency to solve the double-spending problem without the need of a trusted authority or central server. The bitcoin design has the inspiration for other applications. Blockchains are secure by design & exemplify a distributed computing system with high byzantine fault tolerance consensus has therefore been achieved with a blockchain This makes blockchains potentially suitable for the recording of events, medical records,and other records management activities, such as identity management, transaction processing, documenting provenance, food traceability or voting.



Blockchain technology can be integrated into multiple areas. The primary use of blockchains today is as a distributed ledger for crypto currencies, most notably bitcoin. Blockchain technology can be used to create a permanent, public, transparent ledger system for compiling data on sales, storing rights data by authenticating copyright registration, and tracking digital use and payments to content creators, such as wireless users or musicians.





Blockchain has found its way into almost every industry and it's only a matter of time until every company realises how this technology can improve their revenue without having to change their business model. Blockchain technology has the potential to fundamentally change the way the world does business. Distributed ledger system offer very much real-world benefit to enterprises. Blockchain technology helps companies in increasing revenue, acquire more customers or boost the bottom line.

Compiled by
Sneha Bharathi,
Assistance Professor,
Dept of MCA.

Internet of Things

The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifier and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. IoT uses a network-connected devices, embedded in the physical environment, to improve some existing process or to enable a new scenario not previously possible.

These devices, or *things*, connect to the network to provide information they gather from the environment through sensors, or to allow other systems to reach out and act on the world through actuators. They could be connected versions of common objects you might already be familiar with, or new and purpose-built devices for functions not yet realized.

They could be devices that you own personally and carry with you or keep in your home, or they could be embedded in factory equipment, or part of the fabric of the city you live in. Each of them is able to convert valuable information from the real world into digital data that provides increased visibility into how your users interact with your products, services, or applications.

The specific use cases and opportunities across different industries are numerous, and in many ways the world of IoT is just getting started. What emerges from these scenarios is a set of common challenges and patterns.

Patterns in the software development are solutions to common challenges which help to create complex systems using reusable 'templates' to reduce duplicate effort. The Internet of Things, like any system, is made up of patterns which can solve many scenarios. The commonly used design patterns are: Data Ingestion, Control channel, Loose coupling, IoT Gateway, Business rules engine, Heart beat, State synchronization etc.

The major challenges of IoT are :

1. **Rapid application development for IoT**: Quickly and efficiently building user interfaces and applications for IoT use cases that require cost efficiency and fast time to market.
2. **Managing heterogeneity and diversity**: Handling large numbers of heterogeneous, constantly evolving assets and devices in the IoT.
3. **Building customizable IoT solutions**: Supporting IoT solution vendors in creating solutions that can be easily customized for different use cases.

Compiled by
Sujatha Anand
Associate Professor,
Dept of MCA.

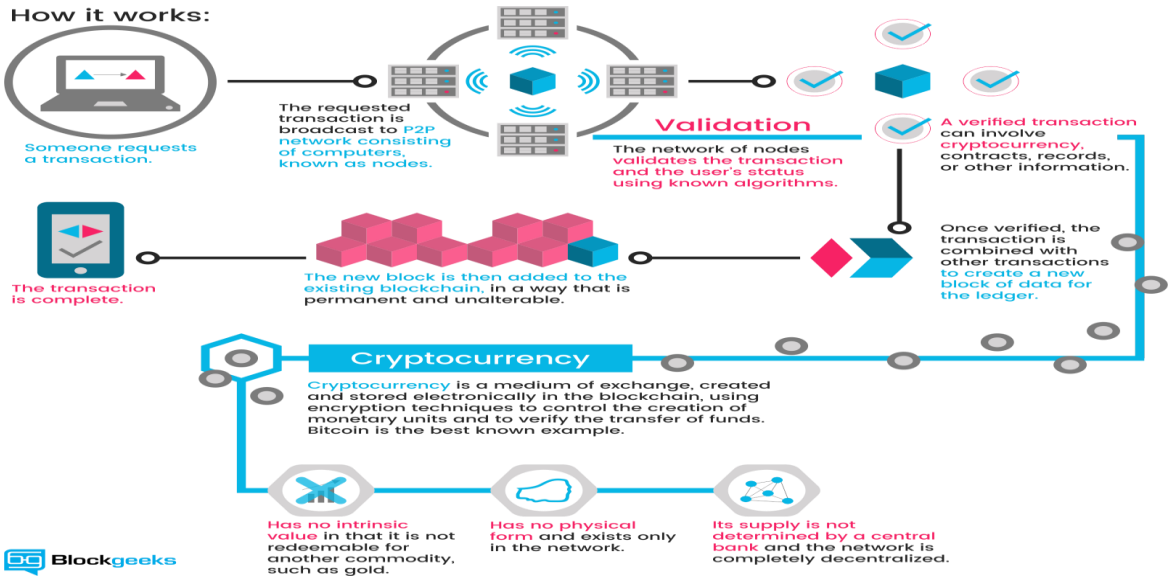
Cryptocurrency
The Future of Money

Cryptocurrency is an alternative currency in digital form, a digital asset designed to work as a medium exchange that uses cryptography to secure its transaction, to control creation of additional currency and to verify its transfer. There was an idea to develop a medium of exchange which is very transparent in nature. As digital revolution took a gear in world, most of the banks and financial institution took a step forward to create a centralized system to exchange the currencies in the form of electronic cash which was controlled and managed by an individual institution.

Cryptocurrency was found basically to oppose such centralized electronic money and use decentralized control of currency works through peer-to-peer network and uses Blockchain which is a public transaction database functioning as a distributed ledger to record the proof of transaction, open to public. Cryptocurrency works on peer-to-peer network with Blockchain technology and cryptography to verify each transaction before peer-to-peer adding it to the Blockchain ledger and completing the transaction.

Once a transaction is requested the transaction is sent to p2p network consisting of computer called nodes and these nodes in the network verifies the transaction and user using known algorithm like SHA3, SHA256, SCRYPT, etc. These nodes as to confirm the hashes the part of cryptographic function which witnesses the transaction on successful match of hashes adds a new block to the Blockchain and complete the transaction.

Anyone can get cryptocurrency you can Buy a cryptocurrency by a various cryptocurrency traders and exchanges by investing real money.The other way is to Mine your own cryptocurrency by using your Electronic gadgets computing power, this can be done by being a part of p2p network of the cryptocurrency network and running their respective algorithm to verify and confirm the transaction and in return a small amount of respective cryptocurrency is rewarded as an incentive, and person involved in this operation is known as miner and anyone can become miner, since a decentralized network has no authority to delegate this task.



There will be a news of new currency every now and then in the market, this is because there are well over 1600 cryptocurrency in existence and new one is being created frequently.
The most popular and long running Cryptocurrencies are:

- Bitcoin
- Bitcoin cash
- Etherium
- Monero
- NEM
- Ripple
- Lite coin
- Doge coin.etc.

As most of the countries are not having a secured digital infrastructure and having a lot of question about the legal regulation on cryptocurrency it is hard to imagine cryptocurrency as a future of medium of exchange but the idea of digital world is definitely incomplete without the cryptocurrency.

Thus Cryptocurrency may not sound good at present due to many regulatory question depending on the country but it will be the future in one or the other form

Basavaraj .V
4th sem MCA
(17MZMCA75)

PLACEMENTS :

All our students are undergoing internship in reputed IT firms & most of them are placed in top MNC's working on various technologies like Cloud Analytics, Social Media Mining & Mobile Computing.

WINGED BEAUTIES AT SIR MVIT

Tree pie

Drongo

Green Bee Eater

Barbet

Paradise Flycatcher

Munia

credits
Vani Harave