TECHZONE

An IT Magzine - Department of Computer Science

HINDUSTAN FIRST GRADE COLLEGE
(Affiliated to University of Mysore)
A Unit of Hindustan Group of Institutions, Chennai
J P Nagar, Mysuru - 570008

Dr. K.C.G VERGHESE

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Special Lecture on "BIOMETRICES" & Release of TECHZONE

"TECHZONE" IT magazine was released on **19th July, 2019** followed by a seminar on **"BIOMETRICS APPLICATIONS"** by **Dr. MANJUNATH K.S,** HoD & Associate Professor, Department of Computer Science, Maharani's College for Women, Mysuru.

The inaugural program commenced with a prayer by Mr. Shreyas. N, III BCA followed by a welcome address and introduction to the resource person by Mrs.Savitha KV, HoD, Department of Computer Science, and Mrs .Sukshma R.D Program Co-Ordinator, highlighted the visions of the **TECHZONE** and the importance of the magazine. Dr. Priya C.J. Principal graced the occasion and Mr.Abel Mathew Prasad Special Officer were present. Ms.Ashwini PN, II BCA, was the master of the ceremony.

One Day Workshop on Hardware Components

One day Workshop on **"Hardware Components"** was conducted on **20/08/2019. Mr. Venkatachala V, Technical Trainer, and Mr. Dhananjay, System Administrator, QDP Technologies Training Division, Mysore, were the resource person.**

Dr. Priya C.J. Principal graced the occasion, with her presence the workshop was conducted in two sessions. In the first session **Mr. Venkatachala V** explained the hardware components of a system such as Mother board, SMPS, SATA, LAN Crimper. He gave an information about how to install LAN connection. In the second session, where hands on experience was conducted. **Mr. Venkatachala V and Mr. Dhananjay** discussed about the importance of BIOS, gave a live demo on how to assemble and disassemble the system, and explained how to format the system and installation of an Operating system.

The inaugural program commenced with a prayer by Ms. Preethi & Group of BCA, followed by a welcome address and introduction to the resource person by Mrs.Savitha KV, HoD, Department of Computer Science, HFGC, Mysuru. Mrs.Sukshma R D, Assistant professor, Department of Computer Science, HFGC, Mysuru rendered the vote of thanks. Ms.Ashwini PN, II BCA, was the master of the ceremony.

Orientation Program on "Hackathon"

Mr. Cloudin, Associate Professor, Department of Computer Science, KCG, Chennai, had visited to HFGC on **3rd January 2020**, to give more information about "Hackathon".

He interacted with our BCA students and educated about how the hackathon event will be organized. He highlighted about the various issues comes in conducting the event like what would be the problem statements, from where to get the problem statements, how to find the solution. Explained the role of the mentors in this event and briefed about the recent technology called IoT (Internet of Things) to the students.

Seminar on "ARTIFICIAL INTELLIGENCE"

One day Seminar on **"Artificial Intelligence"** was conducted on **21/01/2020.**

Mr. Manjunatha Guru VG, HoD, Department of Computer Science, Government First Grade College, Honnali, Davangere District has invited as a resource person. Dr. C.J. Priya, Principal graced the occasion.

The resource person explained how human intelligence is processed by machines, especially computer systems by using Artificial Intelligence (AI), types of AI, AI branches, applications of AI include expert systems, natural language processing (NLP), speech recognition and machine learning. Discussed about pros and cons of various biometric data, described how the pattern recognition helps in AI. Explained the role of Artificial Intelligence in Internet of Things (IoT). Internet of Things is used to collect and handle the huge amount of data that is required by the Artificial Intelligence algorithms. In turn, these algorithms convert the data into useful actionable results that can be implemented by the IoT devices, gave few live examples on how Artificial Intelligence works on IoT. Highlighted the challenges facing in spoofing and he suggested liveness detection is the solution for spoofing. He encouraged the students to take up real life problems and provide solutions using Artificial Intelligence and Machine Learning techniques.

The inaugural program commenced with a prayer by Mr.Shreyas. N, III BCA, followed by a welcome address and introduction to the resource person by Mrs.Savitha KV, HoD, Department of Computer Science, HFGC, Mysuru and Mrs.Sukshma R D,

Assistant professor, Department of Computer Science, HFGC, Mysuru rendered the vote of thanks. Ms.Ashwini PN, II BCA, was the master of the ceremony
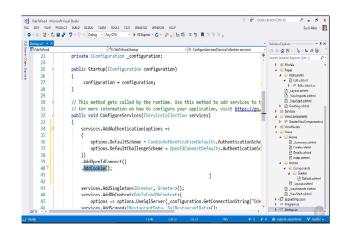
STUDENTS' PARTICIPATION IN 2 DAYS WORKSHOP

The students from BCA department Mr. Shreyas N, VI sem BCA, Ms. Tanya and Ms. Bojamma of II sem BCA had taken an active participation in the 2 days Workshop on **ASP.NET** (web application) & Project Development held on **23ʳᵈ & 24ᵗʰ December 2019** at organised by MIT Engineering College, Mysuru.

The students by attending the workshop gained knowledge of ASP.NET. ASP.NET is an open-source server-side web-application framework designed for web development to produce dynamic web pages developed by Microsoft to allow programmers to build dynamic web sites, applications and services. The students got the confidence to do projects on their own, learnt ASP.NET with database and complete project development life cycle.

TWO DAY WORKSHOP ON HACKATHON

Hindustan First Grade College, J P Nagar Mysuru organised a workshop on **"HACKATHON"** on **5th and 6th February 2020**. The workshop was organised for the participants of HACKATHON event, to be conducted as a part of **SPECTRA 2020 – National Level Management, IT and Cultural fest on 12th and 13th February 2020.**

The college conducts SPECTRA - Management, IT and Cultural Fest to identify and nurture the various managerial, IT and cultural skills in students. . The Fest is open to all Under Graduate, Post Graduate and Engineering students.

HACKATHON, is an unique event which will be conducted for about 10 hours. With a view of providing platform for the students to interact and establish rapport with the professionals, The Department of Computer Science hosted the workshop for the participants of HACKATHON event.

Mr.Ashish Thomas Cherian, Software Developer, iMorph Innovation Centre, Chennai and Ms.Shinny.S.U. Mentor, KCG College, Chennai were invited as the resource persons for the workshop. 90 participants from various colleges participated in the workshop. The workshop was inaugurated by lighting the lamp by Mr.Ashish Thomas Cheria, Ms.Shinny.S.U, Dr.C.J.Priya, Principal, HFGC , Ms. Savitha.K.V. HoD of Computer Science, HFGC and one of the participants.

The participants were trained and the trainers gave them the insight knowledge about HTML, CSS and Javascript. The participants had a hands on experience related to HACKATHON event. The workshop witnessed 107 participants from various colleges which include Hindustan College of Arts & Science, Chennai, KCG College of Technology, Chennai, Jain School of Commerce & Computer Science, Bangalore, Government College(Autonomous), Mandya, St. Joseph's First Grade College, Jayalakshmipuram, Mysuru, Amrita School of Arts & Science, Mysuru, JSS College Arts, Commerce and Science, Mysuru, Vidhyaashram First Grade College, Mysuru, SJCE College, Mysuru, Cresta First Grade College, Mysuru, MIT First Grade College, Mysuru, Christ College, Mysuru. On **12th** Hackathon event was witnessed **33 teams comprising 66 participants.**

Mentors

1. Mr.Ashish Thomas Cherian, Software Developer, iMorph Innovation Centre, Chennai
2. Mr. Jayram B, Software Developer, Elephant Tree Technology Pvt Ltd, Bangalore
3. Ms. Vidyashree SK, Software Developer, Arohaka Technology Pvt Ltd, Mysuru.

Judges

1. Mr. Dorai Thodla, Founder/CTO, iMorch, Chennai
2. Mr. Cloudin, Associate Professor, KCG College, Chennai.
3. Mr. Pannesh Kumar MP, Senior Software Enginner, Galvanize India Pvt Ltd, Banglore.

Ms. Savitha.K.V. HOD of Computer Science, HFGC briefed about HACKATHON event . Ms.Sukshma.R.D. Assistant Professor of Computer Science introduced the resource persons. Ms.Shakthy III BCA welcomed the gathering, Ms. Pooja III BCA rendered the Vote of Thanks. Ms. Ashwini of II BCA was the Master of the ceremony.

Paper Presentation and Publication of Article

Ms. Savitha KV, HoD, Department of Computer Science, Ms. Sukshma RD, Assistant Professor, Department of Computer Science and Mr. Lakshmikanth V, Assistant Professor, Department of Computer Science had participanted in **Two Day National Conference** organised by the department of Computer Science and Commerce & Management Govt. College (Autonomous) Mandya held on 15th and 16th February 2020. **Ms. Savitha KV presented a paper on"Exploring the possible new dimensions in e-Governance". Ms. Sukshma RD and Mr. Lakshmikanth V presented papaer on "Role of IoT in e-Goverance".** Their papers was published in the proceedings of CEG sponsored National Conference on "Current Trends in e-Governance" with **ISBN:978-81-928778-3-9.**

CRYPTOGRAPHY

Cryptography crypt means "hidden" and graph stands for writing. Cryptography is a method of protecting information and communications through the use of codes so that only those for whom the information intended can read and process it. Cryptography includes techniques such as microdots, merging words with images, and other ways to hide information in storage or transit. In today's computer centric world, cryptography is most often associated with scrambling plaintext (ordinary text, sometimes referred to as clear text) into ciphertext (a process called encryption) then back again (known as decryption).

Encryption: is a process which transforms the original information into an unrecognizable form.

Decryption: is a process of converting encoded data in a form that is understood by a human or a computer. Individuals who practice this field are known as cryptographers.

MAJOR GOALS OF CRYPTOGRAPHY

The major goal of cryptography is to prevent data from being read by any third party.

Most transmission systems use a private key cryptography.

This system uses a secret key to encrypt and decrypt data which is shared between the sender and receiver. The private keys are distributed and destroyed periodically.
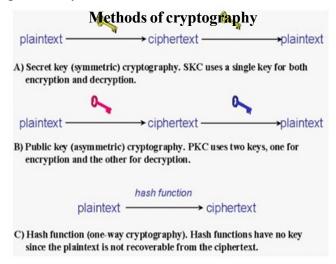

Methods of cryptography

plaintext → ciphertext → plaintext

A) Secret key (symmetric) cryptography. SKC uses a single key for both encryption and decryption.

plaintext → ciphertext → plaintext

B) Public key (asymmetric) cryptography. PKC uses two keys, one for encryption and the other for decryption.

hash function
plaintext → ciphertext

C) Hash function (one-way cryptography). Hash functions have no key since the plaintext is not recoverable from the ciphertext.

Fig: Three types of cryptography: secret key, public key & hash function

Secret key cryptography(SKC): Uses a single key for both encryption and decryption; also called symmetric encryption. Primarily used for privacy and confidentiality.

Public key cryptography(PKC): Uses one key for encryption and another for decryption; also called asymmetric encryption. Primarily used for authentication, non repudiation, and key exchange .

Hash function: Uses a mathematical transformation to irreversibly "encrypt" information providing a digital fingerprint. Primarily used for message integrity.

Benefits and drawbacks of cryptography

Benefits

Cryptography is an essential information security tool. It provides the four most basic services of information security "

Confidentiality: Encryption technique can guard the information and communication from unauthorized revelation and access of information.

Authentication: The cryptographic techniques such as MAC and digital signatures can protect information against spoofing and forgeries.

Data Integrity: The cryptographic hash functions are playing vital role in assuring the users about the data integrity.

Non-repudiation: The digital signature provides the non-repudiation service to guard against the dispute that may arise due to denial of passing message by the sender. All these fundamental services offered by cryptography has enabled the conduct of business over the networks using the computer systems in extremely efficient and effective manner.

Drawbacks

Apart from the four fundamental elements of information security, there are other issues that affect the effective use of information.

♦　　A strongly encrypted, authentic, and digitally signed information can be difficult to access even for a legitimate user at a crucial time of decision-making.

The network or the computer system can be attacked and rendered non-functional by an intruder.

♦　　High availability, one of the fundamental aspects of information security, cannot be ensured through the use of cryptography. Other methods are needed to guard against the threats such as denial of service or complete breakdown of information system.

♦　　Another fundamental need of information security of selective access control also cannot be realized through the use of cryptography. Administrative controls and procedures are required to be exercised for the same.

♦　　Cryptography does not guard against the vulnerabilities and threats that emerge from the poor design of systems, protocols, and procedures. These need to be fixed through proper design and setting up of a defensive infrastructure.

♦　　Cryptography comes at cost. The cost is in terms of time and money-

1. Addition of cryptographic techniques in the information processing leads to delay.

2. The use of public key cryptography requires setting up and maintenance of public key infrastructure requiring the handsome financial budget.

♦　　The security of cryptographic technique is based on the computational difficulty of mathematical problems. Any breakthrough in solving such mathematical problems or increasing the computing power can render a cryptographic technique vulnerable.
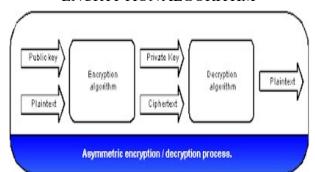
What Is a Cryptocurrency?

A cryptocurrency is a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend. Many cryptocurrencies are decentralized networks based on blockchain technology-a distributed ledger enforced by a disparate network of computers. A defining feature of cryptocurrencies is that they are generally not issued by any central authority, rendering them theoretically immune to government interference or manipulation.

How Cryptocurrency Works

Cryptocurrencies are systems that allow for the secure payments online which are denominated in terms of virtual "tokens," which are represented by ledger entries internal to the system. "Crypto" refers to the various encryption algorithms and cryptographic techniques that safeguard these entries, such as elliptical curve encryption, public-private key pairs, and hashing functions

ENCRYPTION ALGORITHM

Asymmetric encryption / decryption process.

Rc4 generates a pseudorandom stream of bits (a keystream). As with any stream cipher, these can be used for encryption by combining it with the plaintext using bit-wise exclusive-or; decryption is performed the same way (since exclusive-or with given data is an involution). This is similar to the one-time pad except that generated pseudorandom bits, rather than a prepared stream, are used.

To generate the keystream, the cipher makes use of a secret internal state which consists of two parts

1. A permutation of all 256 possible bytes (denoted "S" below).

2. Two 8-bit index-pointers (denoted "I" and "J")

Tanya R
II sem BCA

The permutation is initialize with a variable length key, typically between 40 and 2048 bits, using the key-scheduling algorithm (KSA). Once this has been completed, the stream of bits is generated using the pseudo-random generation algorithm(PRGA).

Key-scheduling algorithm (KSA)

The key-scheduling algorithm is used to initialize the permutation in the array "S". "keylength" is defined as the number of bytes in the key and can be in the range 1 d" keylength d" 256, typically between 5 and 16, corresponding to a key length of 40 – 128 bits. First, the array "S" is initialized to the identity permutation. S is then processed for 256 iterations in a similar way to the main PRGA, but also mixes in bytes of the key at the same time.

```
for i from 0 to 255
    S[i] := i
endfor
j := 0
for i from 0 to 255
    j := (j + S[i] + key[i mod keylength]) mod 256
    swap values of S[i] and S[j]
endfor
```

Pseudo-random generation algorithm (PRGA)

For as many iterations as are needed, the PRGA modifies the state and outputs a byte of the keystream.

In each iteration, the PRGA:

1. Increments i

2. Looks up the ith element of S, S[i], and adds that to j

3. Exchanges the values of S[i] and S[j] then uses the sum S[i] + S[j] (modulo 256) as an index to fetch a third element of S (the keystream value K below)

4. then bitwise exclusive ORed (XORed) with the next byte of the message to produce the next byte of either ciphertext or plaintext.

Each element of S is swapped with another element at least once every 256 iterations.

```
i := 0
j := 0
while GeneratingOutput:
    i := (i + 1) mod 256
    j := (j + S[i]) mod 256
    swap values of S[i] and S[j]
    K := S[(S[i] + S[j]) mod 256]
    output K
endwhile
```

SKINPUT TECHNOLOGY

The Microsoft company have developed Skinput , a technology that appropriates the human body for acoustic transmission, allowing the skin to be used as an input surface. In particular, we resolve the location of finger taps on the arm and hand by analyzing mechanical vibrations that propagate through the body. We collect these signals using a novel array of sensors worn as an armband. This approach provides an always available, naturally portable, and on-body finger input system. We assess the capabilities, accuracy and limitations of our technique through a two-part, twenty-participant user study. To further illustrate the utility of our approach, we conclude with several proof-of-concept applications we developed.
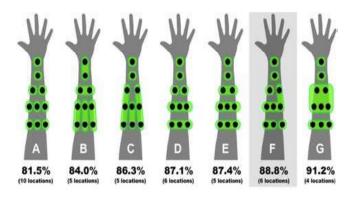
Introduction of Skinput Technology

The primary goal of Skinput is to provide an always available mobile input system - that is, an input system that does not require a user to carry or pick up a device. A number of alternative approaches have been proposed that operate in this space. Techniques based on computer vision are popular These, however, are computationally expensive and error prone in mobile scenarios (where, e.g., non-input optical flow is prevalent). Speech input is a logical choice for always-available input, but is limited in its precision in unpredictable acoustic environments, and suffers from privacy and scalability issues in shared environments. Other approaches have taken the form of wearable computing.This typically involves a physical input device built in a form considered to be part of one's clothing. For example, glove-based input systems allow users to retain most of their natural hand movements, but are cumbersome, uncomfortable, and disruptive to tactile sensation. Post and Orth present a "smart fabric" system that embeds sensors and conductors into abric, but taking this approach to always-available input necessitates embedding technology in all clothing, which would be prohibitively complex and expensive.

The SixthSense project proposes a mobile, alwaysavailable input/output capability by combining projected information with a color-marker-based vision tracking system. This approach is feasible, but suffers from serious occlusion and accuracy limitations. For example, determining whether, e.g., a finger has tapped a button, or is merely hovering above it, is extraordinarily difficult

Bio-Sensing : Skinput leverages the natural acoustic conduction properties of the human body to provide an input system, and is thus related to previous work in the use of biological signals for computer input. Signals traditionally used for diagnostic medicine, such as heart rate and skin resistance, have been appropriated for assessing a user's emotional state. These features are generally subconsciouslydriven and cannot be controlled with sufficient precision for direct input. Similarly, brain sensing technologies such as electroencephalography (EEG) & functional near-infrared spectroscopy (fNIR) have been used by HCI researchers to assess cognitive and emotional state; this work also primarily looked at involuntary signals.

In contrast, brain signals have been harnessed as a direct input for use by paralyzed patients, but direct brain computer interfaces (BCIs) still lack the bandwidth requiredfor everyday computing tasks, and require levels of focus, training, and concentration that are incompatible with typical computer interaction.

A	B	C	D	E	F	G
81.5%	84.0%	86.3%	87.1%	87.4%	88.8%	91.2%
(10 locations)	(5 locations)	(5 locations)	(6 locations)	(5 locations)	(6 locations)	(4 locations)

There has been less work relating to the intersection of finger input and biological signals. Researchers have harnessed the electrical signals generated by muscle activation during normal hand movement through electromyography (EMG). At present, however, this approach typically requires expensive amplification systems and the application of conductive gel for effective signal acquisition, which would limit the acceptability of this approach for most users. The input technology most related to our own is that of Amento et al who placed contact microphones on a user's wrist to assess finger movement. However, this work was never formally evaluated, as is constrained to finger motions in one hand.

The Hambone system employs a similar setup, and through an HMM, yields classification accuracies around 90% for four gestures (e.g., raise heels, snap fingers). Performance of false positive rejection remains untested in both systems at present. Moreover, both techniques required the placement of sensors near the area of interaction (e.g., the wrist), increasing the degree of invasiveness and visibility. Finally, bone conduction microphones and headphones - now common consumer technologies - represent an additional bio-sensing technology that is relevant to the present work. These leverage the fact that sound frequencies relevant to human speech propagate well through bone.Bone conduction microphones are typically worn near the ear, where they can sense vibrations propagating from the mouth and larynx during speech. Bone conduction

eadphones send sound through the bones of the skull and jaw directly to the inner ear, bypassing transmission of sound through the air and outer ear, leaving an unobstructed path for environmental sounds.

Nithin Kumar G M
VI sem BCA

WINNERS

Mr.Hemanth Kumar B, III BCA has got Second place in **Coding** event organised by Yuvaraja's College, Mysuru on **23rd January 2020**.

Ms.Shree Shakthy, III BCA has got Second place in **Google Hunt** event organised by GSSS College, Mysuru on **15th February 2020**.

Mr.Karthik R, Mr.Shreyas N, Mr.Mallikarjun, Ms.Bojamma N B, Ms.Bhoomika has got First place in **Science Expo** event organised by Christ College, Mysuru on **19th February 2020**.
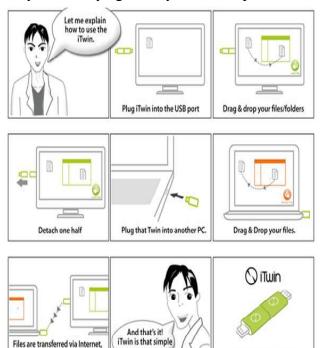
I-TWIN TECHNOLOGY

iTwin is a revolutionary new file sharing and remote access device brought to you by a company called iTwin. It's like two ends of a cable, without the cable. It's as simple to use as a flash drive. It's literally plug and play. iTwin can connect any two online computers anywhere in the world. iTwin enables you to have access to any or all of your home computer's files and folders while you're on-the-go. Similarly, you can also use iTwin to access to any or all of your office computer's files and folders while on-the-go. There's no in-built limit to the amount of storage you can access with iTwin while you're on-the-go. The only limit is the size of your hard drives. The only other "limit" is the speed of your Internet connection. The faster it is, the better your experience. You can select files for accessing later on-the-go, or you can edit them remotely, without the files leaving your computer. You can also back-up files to your home or office computer while you're out on-the-go. It's so easy, it's unbelievable.

iTwin is like two ends of an rod, without rod. It is simple to use as a flash drive. It is exactly like plug and play. iTwin enables you to have access to your desktop's files while you are traveling. Similarly, you can also use iTwin to access your office desktop's files while on the go. The only drawback is the speed of your internet connection. The faster it is better is your experience. You can edit files on your desktop remotely when you have access to the desktop. You can also backup files to your desktop or office desktop.

Working of iTwin

■   When you plug-in iTwin, you will see a pop-up window, just as you would if you connect USB device.

■   Drag and drop files into this window to share as many as you want. Leave one of the iTwin connected to the computer.

■   Plug-in the other halves of the iTwin to the computer, to which you want to view, edit or remove those files. Even though, if you remotely edit or remove files on the second computer, files on the first computer will not be lost This is the another advantage of iTwin Be sure that the two computers are online.

■   Detach one half of the itwin and take it with you.

■   You can access the shared files, by plugging the half you are carrying into any online computer.

Features of iTwin

Like a Limitless Capacity Secure USB Drive iTwin allows you to securely access your entire hard drive. It's as if you are carrying an access-key to all your files in a device that fits in the palm of your hand. And unlike portable storage, iTwin lets your data stay safely at home (or in office).

Remotely edit shared files

Remotely edit any shared file from any location. iTwin allows you to keep a single version on one computer, with you and your chosen iTwin partner collaborating directly on this version. Say goodbye to multiple versions of files flying around by email. Say goodbye to the headaches of needless re-work. Say hello to iTwin.

Backup your data from anywhere

When you are on the road, you can use iTwin to move copies of files from your laptop to your home or office computer. If you are traveling and taking lots of pictures, you can free up your SD card by moving files onto your laptop and transferring them back home. It keeps your data safe and secure.

One-time cost. No fees, ever

Don't pay for cloud storage. Don't pay subscription fees for file access. Don't get locked in. You have all the storage you need on your computer and home hard drive. With iTwin, share it and access it from anywhere. Create your own personal cloud. Secured by hardware-grade encryption.

Windows and Mac OS X compatible

You can use iTwin on any of both Windows and Mac OSX platforms. iTwin works on Microsoft® Windows® XP (Service Pack 2 and above), Windows® Vista, Windows® 7 (32-bit and 64-bit). iTwin also works on Apple® Mac OSX® 10.6 and above, i.e. Snow Leopard and Lion (32-bit and 64-bit).

Data security

iTwin doesn't store any data on itself. It just enables a secure connection between two computers. Your remote data can only be accessed if you have the physical iTwin with you. Additionally, you can set up your iTwin to require a password. iTwin is a secure USB device providing Two-Factor Authentication (hardware device + password).We also allow you to remotely disable iTwin with our remote disable feature. So you can rest assured that your data is safe, even if you lose your iTwin device. If you have ever lost a portable memory device, you know that terrible feeling. We want to make sure this never happens to you again.

Advantages of iTwin

1. In the case of network interruption itwin files transfers pause.

2. When the Internet connection is resumed itwin software continues the file transfer from where it is left of.

3. Itwin progress bar indicates the amount left to be transferred.

4. If the itwin is lost you can easily disable it.

5. If password is forgotten we can change it easily by attaching both the half and set a new one.

6. Itwin connect is compatible with both Windows and Mac OS.

7. VPN protects you on hotel and public Wi-Fi networks.

Disadvantages of iTwin

1. Itwin connect is 3.5 inches long in total which means when the parts are divided they are very easy to lose.

2. When the itwin connect USB dongle is plugged in it can low down network performance.

3. You must set up files to share in advance in order to access them.

Technical Specifications

A Software requirements:

Requires minimum of 512 MB RAM, but 1GB RAM is recommended.

Requires 15 MB hard disk space.

USB 2.0 port.

Compatible with windows/OS X.

Requires broadband internet access.

Shreyas N
VI sem BCA

DISTINCTION HOLDERS

Harshitha M
III BCA - 87%

Shree Shakthy
III BCA - 80%

Megha S
II BCA - 9.19 GPA

Hemashree K
II BCA - 8.63 GPA

Amrutha S
II BCA - 8.44 GPA

Preethi V.M
II BCA - 8.38 GPA

Sowjanya
II BCA - 8.38 GPA

Ashwini P N
II BCA - 7.81 GPA

Chandan Kakade M
II BCA - 7.81 GPA

Akhila K J
II BCA - 7.69 GPA

Abhishek Nayak R
I BCA - 7.61 GPA

Congratulations

Editorial Team

Mrs. Savitha K V   **Mrs. Sukshma R D**   **Mr. Shreyas N**   **Ms. Hemashree K**