

GURU NANAK COLLEGE BUDHLADA

Under the management of SGPC Sri Amritsar Sahib

NAAC Accredited "A"Grade College

Skill Hub Institute Selected by NSDC



2018-19 DEPARTMENT OF COMPUTER SCIENCE

CONSISTENCY DISCIPLINE

FOCUS













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From Principal's Desk

Guru Nanak College, Budhlada is one of the premier institutions of higher education in the state and a leading educational institution established on the sacred name of Sri Guru Nanak Dev Ji, first Guru of Sikhs. The college has consistently been enlightening its glory in the state and of course nationally. So many Courses under different Departments are there in this College. Among the all departments, Computer Science Department is running with a great strength of Students. I think Future of any nation depends on how the young generation is being groomed. Although training of youth is important in all fields but technical fields



assume more importance in present era. Our budding Computer Science Students have to come up to the expectations of global MARKET. Therefore we have developed excellent academic infrastructure including modern lecture halls, seminar halls, laboratories, workshops and are having qualified, experienced and dedicated faculty.

Well STOCKED library including digital library and e-journals, Magazines and round the clock internet facilities are available. Students are encouraged to arrange workshops and seminars. Emphasis is also given to improve communication skills and personality development of students. To improve team work and Research, the Computer Science Department provides more facilities. Now, the Department has published its magazine having name Computer Science - 2018-19.

It is a great initiative taken by Faculty members and students to publish a Computer Science Magazine 2018-2019. Computer Science Department gives the result of all activities at the end of year in a form of magazine. I hope, This Magazine will enhance the technical, Research and general skills of students. I congratulate to Head of the department, Faculty members and students for taking this step.

Dr. Kuldeep Singh Bal

From the Department of Computer Science



Dear readers,

I am extremely happy to bring out this message for our Department magazine released for the academic year 2018–2019. This magazine provides a platform for students and staff to share information, spread the latest technical knowledge and cultivate right ways that will equip all of us to stay competent in our respective fields of study and research.

Have faith in God and in yourself, fix your goals and achieve your goals. It is hard to be focused on these. Without focus we cannot achieve our goals. Knowledge helps us to achieve the goals. I am sure this issue (Department magazine) will send a positive signal to the staff, students and the persons who are interested in the educational and literary activities.

A magazine is like a mirror which reflects the clear picture of all sorts of activities undertaken by the institution and develops writing skills among students in particular and students in general. From the last some years Computer Science Department is running with a great growth of students. This type of creativities enhances the skills of students. This department magazine will provide a better platform to the students to sharpen their writing talent and will strength en the academic activities of the college. I congratulate and thank all faculty members of Computer Science Department for putting their sincere efforts to make this Magazine.

Mrs. Rekha Kalra Head, Department of Computer Science

(Editor-in-Chief)

Editorial Committee

Patrons

Dr. Kuldeep Singh Bal (Principal)

Associate Editor-in-Chief

Mrs. Rekha Kalra

(Head, Department of Computer Science)

Advisory Committee

Mr. Narinder Singh

(Assistant Professor)

Mrs. Deepali

(Assistant Professor)

Coordinators

Parmeet Kaur (A.P.)

Buta Singh (A.P.)

Gurinder Kaur (A.P.)

Student Members

Satnam Singh (MCA-II, sem-III)

Ramanjeet Kaur (M.Sc.. IT, Sem-I)

Overview of the Department

Department of Computer Science was build up in 2004 and running with great strength of approximately 400 students. The department functions as a Nodal agency for the department wide networking across the entire institutes and provide internet connectivity to various departments through its servers, radio links and switches. The department has five well designed labs.

The institute has been provided the Wi-Fi connectivity throughout the campus. The department is having 200 computer systems of latest configuration and latest licensed software as per course requirements. Core competencies of the department are in the area of Artificial Intelligence, Network Security, Image processing, Wireless sensor Network and Web development. Post Graduate Department of Computer Science is also running 3 PG courses, 2 UG courses and 2 Add-on courses.



Faculty Profile

Name of Faculty	Qualification	Designation	Specialization	
Rekha Kalra	MCA, M.Phil, Ph.D (Pursing)	Head of Department, Assistant Professor	Programming Languages C, C++, Java	
Narinder Singh	MCA, M.Phil, Ph.D (Pursing)	Assistant Professor	Artificial Intelligence, Cloud Computing	
Lal Singh	M.Tech	Assistant Professor	Linux, Computer Graphics, Data Structure	
Geetu	MCA, M.Phil Ph.D (Pursing)	Assistant Professor	Visual Basic, DBMS, Networking	
Sandhya vats	MCA, M.Phil	Assistant Professor	Computer Architecture, Operating System, Computer Network, System Software	
Nitika Goyal	B.Tech, M.Tech	Assistant Professor	Software Engineering, System Analysis & Design Management Information System	
Deepali	B.Tech, M.Tech, JRF UGC(NET), GATE	Assistant Professor	Data Structure, Theory of Computation, Wireless Sensor Network	
Gagandeep Kaur	B.Tech, M.Tech, Ph.D Pursing	Assistant Professor	Data Structure, Scripting Languages, Microprocessor, Digital	
Gurinder Kaur	MCA, M.Tech	Assistant Professor	Computer Network, Operating System	
Buta Singh	B.Tech, M.Tech	Assistant Professor	Computer Graphics, UML, Data Structure	
Shabeena	MCA	Assistant Professor	Management of Information System, Programming Language C	
Sandeep Singh	MCA	Assistant Professor	Programming Language C, Fundamental of Information Technology	
Parmeet kaur	B.Tech., M. Tech	Assistant Professor	Programming (C, Asp.net)	
Lovejeet kaur	M.Tech (CE)	Assistant Professor	Data Structure, TOC	
Sukhjeet Singh	MCA,NET	Assistant Professor	Artificial Intelligence, TOC,ASP.net	
Sukhdeep Kaur	MCA	Assistant Professor	OS, FOC	

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Faculty as members:-

a) National committees b) International Committees c) Editorial Boards....

Faculty	National Committees/International Committees/Editorial Board/Memberships
Rekha Kalra	Editor-in-chief, International journal of Information management and Technology
Narinder Singh	Managing Editor, International journal of Information management and Technology. Member of board of studies Faculty of physical sciences, Punjabi University Patiala. Member of Paper Setter Panel in Khalsa College, Patiala
Lal Singh	Managing Editor, International journal of Information management and Technology. Corporate Member of The Institution of Engineers (India), Kolkata.
Geetu	Associate Editor, International journal of Information management and Technology.
Sandhya vats	Associate Editor, International journal of Information management and Technology.
Nitika Goyal	Associate Editor, International journal of Information management and Technology.
Deepali	Managing Editor, International journal of Information management and Technology.
Gagandeep Kaur	Associate Editor, International journal of Information management and Technology.

Top Rankers of the Department

SR No	Class	Roll No	NAME	Total
1	B.C.A 3	14106	KAMALPREET KAUR	81.275
2	B.VOC SD 3	1004	SUKHVIR KAUR	9
3	B.VOC SD 3	1005	SUKHPREET SINGH	9
4	B.VOC SD 3	1008	MANINDER	9
5	B.VOC SD 3	1009	AMANJEET SINGH	9
6	B.VOC SD 3	1010	TANIA	9
7	B.VOC SD 3	1011	HARPREET KAUR	9
8	B.VOC SD 3	1014	PARDEEP KAUR	9
9	B.VOC SD 3	1022	EKNOOR KAUR	9
10	B.VOC SD 3	1024	BALJINDER SINGH	9
11	B.VOC SD 3	1026	HARPREET KAUR	9
12	B.VOC SD 3	1027	SUBEGH SINGH	9
13	M.C.A 3	1163	RAMANDEEP KAUR	9
14	PGDCA	2045	ISHA MITTAL	398

Shining Stars of the Department





RAJVIR KAUR (MCA)

UGC NET IN COMPUTER SCIENCE

RAMANDEEP KAUR (MCA)

UGC NET IN COMPUTER SCIENCE

Student Participations/Achievements

AIIU	AIIU games						
Rollno Reg no.		Student Name	Game	Level	Achievement		
1827	716-13-1254	Rekha Devi	Vollyball	AIIU	Participation		
1849	7124-11-553	Gundeep Singh chauhan			Participation		
1885	2124-12-402	Ramanpreet Kaur	1 5		Participation		
1872	5111-16-2274	Bakhshinder Singh	Hockey	AIIU	Silver		
Khals	Khalsai Games						
Rolln	o Reg no.	Student Name	Game	Level	Achievement		
1851	511-12-1679	Naresh Kumar	Kabaddi	Khalsai Games	Bronze		
1852	51113-1755	Makhan Singh	Kho-Kho	Khalsai Games	Gold		
1857	912-13-669	Kuldeep Singh	Basketball	Khalsai Games	Gold		
1864	716-11-721	Arun Sharma	Basketball	Khalsai Games	Gold		
1865	511-16-2276	Tushar Makkar	Kabaddi	Khalsai Games	Gold		
1869	412-11-571	Sukhjinder Singh	Basketball		Gold		
1870	5111-16-2275	Gurmukh Singh	Hockey	Khalsai Games	Silver		
1873	5111-13-1160	Parminder Singh	Kabaddi	Khalsai Games	Bronze		
Inter College Games							
Rolln	o Reg no.	Student Name	Game	Level	Achievement		
1853	511-13-1755	Gurpreet Singh	Kho Kho	Inter College	Silver		
1843	Z(P)2014-12012	Simerjeet Kaur	Gatka	Inter College	Gold		
1868	GNC(B)2010-477	Satnam Singh	Sepak takraw	Inter College	Gold		

Extension Activities

Organized workshop

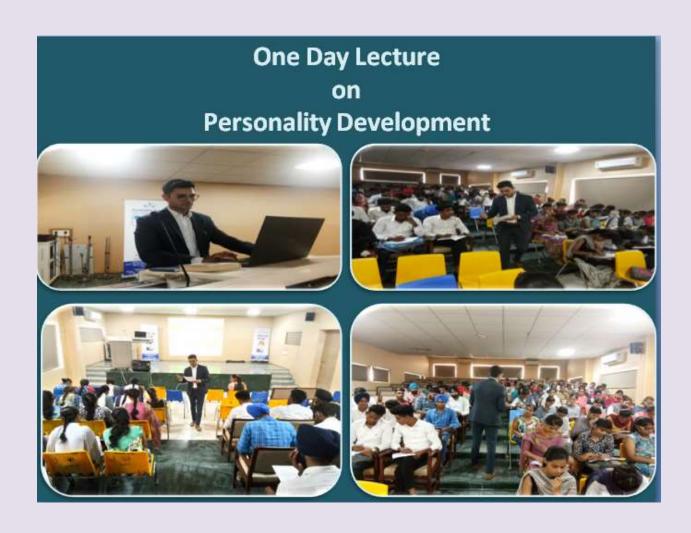
Five day workshop on Core and Advance Java by Skycon technology



The PG department of Computer Science has organized workshop for the upliftment of the students in different fields related to industry sector. In this workshop one of the reynold company i.e. Skycon technology from Bathinda organized a workshop on 17th October 2018 for final year students.

Organized seminar

In order to enhance the personality of the students for future, one day seminar was organized by the department that was presented by Adit Goswami on Personality development on 27th august 2018.



Students of the Department participating in one day lecture on Personality Development organized by Department of Computer Science and Presented by Mr. Adit Goswami.

Extracurricular activities of the Department

Cultural Program

Extracurricular activities increase opportunities for social interaction and new relationship development. As most of these activities are group-oriented which have students from different niches, hence it gives them a chance to more know about people of different passions and cultures. Besides, this they can also find clubs or groups that share similar social, religious or even entertainment interest for socialization. Interaction with people of different backgrounds helps in development of interpersonal skills of students.

Practical Benefits:-

Extracurricular activities teach students how to work for a common goal and this ultimately develops a sense of responsibility in them. It increases the level of confidence and also teaches them how to cooperate and work with people in different conditions. They learn to face the challenges that come in education and career. So keeping all these things in mind department tries to organize various events for the students. This cultural program had been celebrated by the department on 6th april 2019.



Department Tours and Trips

Two day Historical tour at Shri Amritsar Sahib on 23-24 MARCH 2019



Students of Department of Computer Science at SADA PIND and other locations during two day Tour at Shri Amritsar Sahib

Department Tours and Trips

One Day Trip at "MG Club Hisar" on 7-April-19

In order to make students familiar with the rich traditional culture of India, Students of the Department visited MG Club Hisar on 7th April 2019.



Students of the Department during visit at M.G. Club Hisar with Staff members of the the Department

Special day celebrations

Teacher's day

Teachers' day is celebrated across the world on various dates. In India, Teachers' day is celebrated on 5th September, the birthday of the former President Sarvpalli Radhakrishnan, a well-known scholar, teacher and promoter of education.

On this special day, students celebrate the contribution of teachers in their lives and shaping up the society.



Staff Member of Department of Computer Science Celebrating Teachers Day on 5th Sept. 2018

Lohri Celebration

The ancient significance of the festival is both as a winter crop season celebration and a remembrance of the Sun deity (Surya). Lohri songs mention the Indian Sun god asking for heat and thanking him for his return. Other legends explain the celebration as a folk reverence for fire (Agni) or the goddess of Lohri. This day is celebrated on 13th January 2019.



Students and Staff during Lohri Celebration in the Department

Voter Day

Voting is a basic process that helps to form a country's government. One can choose their representatives through voting as voting rights enables people with the right to question the government about issues and clarifications. It also provides a sense of freedom to express opinion in major decision making for the benefit of the country in a democratic nation. By remembering the importance of this department has celebrated this day on 25th January 2019.



Essay Writing Competition that was held on Voters Day and Students and Staff of the Department taking oath on Voters Day on dated 25 Jan. 2019

International Women's day

A woman is a full circle. Within her is the power to create, nurture and transform." Understanding a woman is a mystery and it needs lots of perseverance and knowledge. A woman is the epitome of love, sacrifice, care and ability to nurture life.

The quality of a woman can be understood with these thoughts "If a woman has to choose between catching a fly ball and saving an infant's life, she will choose to save the infant's life without even considering there are men at the base." Such is the power of a woman.

The ability to nurture life makes a woman the most powerful and strongest being. She can play different roles with ease be it that of a dutiful wife, obedient daughter, caring mother or adoring sister.

On this day (8th march 2019) the department organized a competition by giving a chance to students to write an essay on this day.



Department of Computer Science organized a Chart Making Competition on the eve of International Women's Day focusing on the Importance and Rights women in the society.

Creativity Competition

The Post graduate department of Computer Science celebrated logo and collage making competition to motivate and enhance the creative skills of the students on 20^{th} march 2019.



Rangoli, Collage and Logos made by students of Department of Computer Science on the occasion of Holi Festival on 20th March 2019.

Teacher Corner

Top 8 Technology Trends

Technology is now evolving at such a rapid pace that annual predictions of trends can seem outof-date before they even go live as a published blog post or article. As technology evolves, it enables even faster change and progress, causing an acceleration of the rate of change, until eventually it will become exponential.

Technology-based careers don't change at the same speed, but they do evolve, and the savvy IT professional recognizes that his or her role will not stay the same. And an IT worker of the 21st century will constantly be learning (out of necessity if not desire).

Top 8 Technology Trends for 2020

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What does this mean for you? It means staying current with technology trends. And it means keeping your eyes on the future, to know which skills you'll need to know and what types of jobs you want to be qualified to do. Here are eight technology trends you should watch for in 2020, and some of the jobs that will be created by these trends.

1. Artificial Intelligence (AI)

Artificial Intelligence, or AI, has already received a lot of buzz in recent years, but it continues to be a trend to watch because its effects on how we live, work and play are only in the early stages. In addition, other branches of AI have developed, including Machine Learning, which we will go into below. AI refers to computers systems built to mimic human intelligence and perform tasks such as recognition of images, speech or patterns and decision making. AI can do these tasks faster and more accurately than humans.

Five out of six Americans use AI services in one form or another every day, including navigation apps, streaming services, smartphone personal assistants, ride-sharing apps, home personal assistants, and smart home devices. In addition to consumer use, AI is used to schedule trains,

assess business risk, predict maintenance, and improve energy efficiency, among many other money-saving tasks.

AI is one part of what we refer to broadly as automation, and automation is a hot topic because of potential job loss. Experts say automation will eliminate 73 million more jobs by 2030. However, automation is creating jobs as well as eliminating them, especially in the field of AI: Pundits predict that jobs in AI will number 23 million by 2020. Jobs will be created in development, programming, testing, support and maintenance, to name a few. Artificial Intelligence architect is one such job. Some say it will soon rival data scientist in need for skilled professionals. To learn more about potential jobs in AI, read about building a career in AI or why you should earn an AI certification.

2. Machine Learning

Machine Learning is a subset of AI. With Machine Learning, computers are programmed to learn to do something they are not programmed to do: they learn by discovering patterns and insights from data. In general, we have two types of learning, supervised and unsupervised.

While Machine Learning is a subset of AI, we also have subsets within the domain of Machine Learning, including neural networks, natural language processing (NLP), and deep learning. Each of these subsets offers an opportunity for specializing in a career field that will only grow.

Machine Learning is rapidly being deployed in all kinds of industries, creating a huge demand for skilled professionals. The Machine Learning market is expected to grow to \$8.81 billion by 2022. Machine Learning applications are used for data analytics, data mining and pattern recognition. On the consumer end, Machine Learning powers web search results, real-time ads and network intrusion detection, to name only a few of the many tasks it can do.

In addition to completing countless tasks on our behalf, it is generating jobs. Machine Learning jobs rank among the top emerging jobs on LinkedIn, with almost 2,000 job listings posted. And these jobs pay well: In 2017, the median salary for a machine learning engineer was \$106,225. Machine Learning jobs include engineers, developers, researchers, and data scientists.

3. Robotic Process Automation or RPA

Like AI and Machine Learning, Robotic Process Automation, or RPA, is another technology that is automating jobs. RPA is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replying to emails. RPA automates repetitive tasks that people used to do. These are not just the menial tasks of a low-paid worker: up to 45 percent of the activities we do can be automated, including the work of financial managers, doctors and CEOs.

Although Forrester Research estimates RPA automation will threaten the livelihood of 230 million or more knowledge workers, or approximately 9 percent of the global workforce, RPA is

also creating new jobs while altering existing jobs. McKinsey finds that less than 5 percent of occupations can be totally automated, but about 60 percent can be partially automated.

4. Edge Computing

Formerly a technology trend to watch, cloud computing has become mainstream, with major players AWS (Amazon Web Services), Microsoft Azure and Google Cloud dominating the market. The adoption of cloud computing is still growing, as more and more businesses migrate to a cloud solution. But it's no longer the emerging technology.

As the quantity of data we're dealing with continues to increase, we've realized the shortcomings of cloud computing in some situations. Edge computing is designed to help solve some of those problems as a way to bypass the latency caused by cloud computing and getting data to a datacenter for processing. It can exist "on the edge," if you will, closer to where computing needs to happen. For this reason, edge computing can be used to process time-sensitive data in remote locations with limited or no connectivity to a centralized location. In those situations, edge computing can act like mini datacenters. Edge computing will increase as use of the Internet of Things (IoT) devices increases. By 2022, the global edge computing market is expected to reach \$6.72 billion. As with any growing market, this will create various jobs, primarily for software engineers.

5. Virtual Reality and Augmented Reality

Virtual Reality (VR) immerses the user in an environment while Augment Reality (AR) enhances their environment. Although VR has primarily been used for gaming thus far, it has also been used for training, as with VirtualShip, a simulation software used to train U.S. Navy, Army and Coast Guard ship captains. The popular Pokemon Go is an example of AR.

Both VR and AR have enormous potential in training, entertainment, education, marketing, and even rehabilitation after an injury. Either could be used to train doctors to do surgery, offer museum goers a deeper experience, enhance theme parks, or even enhance marketing, as with this Pepsi Max bus shelter.

There are major players in the VR market, like Google, Samsung and Oculus, but plenty of startups are forming and they will be hiring, and the demand for professionals with VR and AR skills will only increase. Getting started in VR doesn't require a lot of specialized knowledge. Basic programming skills and a forward-thinking mindset can land a job, although other employers will be looking for optics as a skill-set and hardware engineers as well.

6. Blockchain

Although most people think of blockchain technology in relation to cryptocurrencies such as Bitcoin, blockchain offers security that is useful in many other ways. In the simplest of terms, blockchain can be described as data you can only add to, not take away from or change. Hence

the term "chain" because you're making a chain of data. Not being able to change the previous blocks is what makes it so secure. In addition, blockchains are consensus-driven, so no one entity can take control of the data. With blockchain, you don't need a trusted third-party to oversee or validate transactions. You can refer to our Blockchain tutorial for a detailed and thorough understanding of the technology.

Several industries are involving and implementing blockchain, and as the use of blockchain technology increases, so too does the demand for skilled professionals. In that regard, we are already behind. According to Techcrunch.com, blockchain-related jobs are the second-fastest growing category of jobs, with 14 job openings for every one blockchain developer. A blockchain developer specializes in developing and implementing architecture and solutions using blockchain technology. The average yearly salary of a blockchain developer is \$130,000. If you are intrigued by Blockchain and its applications and want to make your career in this fast-growing industry, then this is the right time to learn Blockchain and gear up for an exciting future.

7. Internet of Things (IoT)

Many "things" are now being built with WiFi connectivity, meaning they can be connected to the Internet—and to each other. Hence, the Internet of Things, or IoT. The Internet of Things is the future and has already enabled devices, home appliances, cars and much more to be connected to and exchange data over the Internet. And we're only in the beginning stages of IoT: the number of IoT devices reached 8.4 billion in 2017 is expected to reach 30 billion devices by 2020.

As consumers, we're already using and benefitting from IoT. We can lock our doors remotely if we forget to when we leave for work and preheat our ovens on our way home from work, all while tracking our fitness on our Fit bits and hailing a ride with Lyft. But businesses also have much to gain now and in the near future. The IoT can enable better safety, efficiency and decision making for businesses as data is collected and analyzed. It can enable predictive maintenance, speed up medical care, improve customer service, and offer benefits we haven't even imagined yet.

8. Cyber security

Cyber security might not seem like emerging technology, given that it has been around for a while, but it is evolving just as other technologies are. That's in part because threats are constantly new. The malevolent hackers who are trying to illegally access data are not going to give up any time soon, and they will continue to find ways to get through even the toughest security measures. It's also in part because new technology is being adapted to enhance security. As long as we have hackers, we will have cyber security as an emerging technology because it will constantly evolve to defend against those hackers.

As proof of the strong need for cyber security professionals, the number of cyber security jobs is growing three times faster than other tech jobs. However, we're falling short when it comes to filling those jobs. As a result, it's predicted that we will have 3.5 million unfilled cyber security jobs by 2021.

Many cyber security jobs pay six-figure incomes, and roles can range from ethical hacker to security engineer to Chief Security Officer, offering a promising career path for someone who wants to get into and stick with this domain.

<u>Deepali Goyal</u> Assistant Professor

The Science of Happiness

As far as possible without surrender, be on good terms with all persons. Speak the truth quietly and clearly and listen to others, even the dull and ignorant; they too have their story. Avoid loud and aggressive persons, they are vexations to the spirit. If you compare yourself to others you may become vain and bitter, for always there will be greater and lesser persons than yourself. Enjoy your achievements as well as your plans. Keep interested in your career however humble; it is a real possession in the changing fortune of time. Exercise caution in your business affairs, for the world is full of trickery. But let this not blind you from what virtue there is. Many persons strive for high ideals and everywhere life is full of heroism. Be yourself, especially do not feign affection. Neither be cynical about love; for in the face of all aridity and disenchantment, it is as perennial as the grass. Take kindly the counsel of the years, gracefully surrendering the things of youth. Nurture the strength of spirit of shield in sudden misfortune. But do not distress yourself with imagination. Many fears are born of fatigue and loneliness. Beyond a wholesome discipline, be gentle with yourself. You're a child of the Universe, no less than the trees and the stars; you have right to be here. And whether or not it is clear to you, no doubt the Universe is unfolding as it should be. Therefore be at peace with God, whatever you conceive him to be and whatever labours and aspirations, in the noisy confusion of life, keep peace with your soul. With all it shams, drudgery and broken dreams, it is still A BEAUTIFUL WORLD. BE CHEERFUL. STRIVE TO BE HAPPY.

> Sandeep Singh Assistant Prof.

Student Corner Cyber bullying

Cyber bullying is when a child or teen becomes a target of actions by others: using computers, cell-phones or other devices – that are intended to embarrass, humiliate, torment, threaten or harass. With the increasing use of internet services and mobile technologies, cyber bullying has become frequent, especially among teens. It includes communications that seek to control, defame, manipulate, harass or falsely discredit an individual. The actions are frequent, intentional and hostile intended to tarnish reputation of another individual. These actions are performed in social media, public forums or other online information sites. A cyber bully may be online stranger or it can be an individual whom the victim knows.

Today, the majority of people, particularly young people between age of 12 to 18 spend more time on social networking sites such as Facebook, Twitter and the like. There are numerous risks associated with these sites, among which cyber bullying is most common and widespread. The cyber bully usually posts

offensive photos and videos, misleading information or expose secrets about target on these sites to defame him/her. Cyber bullying activities are so harmful that sometimes it compels the victim to commit suicide. There have been a number of cases that involve teenagers committing suicide because of being mistreated or humiliated over the internet.

There are several ways through which cyber bullies, who send nasty emails, can be tracked by police with the help of Internet service providers and thus necessary actions can be



taken against cyber bullies. All electronic messages carry information that shows the path that the message has taken to get to the victim's computer and ISPs are able to track it down.

If an individual is targeted by a cyber bully, it is important not to respond to any posts or message shared by him, regardless of how untrue or harmful it is. Responding to such posts will only worsen the situation as bullies generally intend to provoke a reaction from the target. Sending a threatening message will only encourage the bully to continue bad behavior and it may make the situation out of control. Instead of replying to abusive text messages, emails or other communications; one must save it as evidence against cyber bully and report them to concerned individual, family member or school counsellor and most importantly police so that actions of cyber bully can be prosecuted by law. Recording the date, time and message will also help in determining how to deal with cyber bully. One must also inform incident of any kind of online bullying to parents, guardian, counsellor or trusted friend. Parents should also take the matter seriously and deal with it immediately. They should keep close attention to online activities of their child and should talk with them about what they are doing and with whom they are communicating. As well, parents should encourage their child to inform if he/she receives any malicious messages or is targeted by any cyber bully.

A victim can also delete cyber bully from their social media contacts and can block phone number or email address of cyber bully. Immediately blocking the bully from direct communication will put an end to most invasive threats to great extent. Changing the online account settings as well as limiting the access of personal information to trusted people will also prevent individual against getting bullied.

Schools should also ensure proper safety of their students against bullying. Anti-bullying code of conduct should be implemented by schools that specify what type of behaviors and actions will not be tolerated and its consequences. Safer environment should be created and students should be motivated to freely communicate their concerns or problems they are facing. In addition, anti-bullying programs should be frequently conducted with the help of students in order to create more and more awareness about cyber bullying – what it is, what are its implications and how it can be tackled.

There are various laws that not only address cyber harassment, but also protect cyber bullying victims of any age. Many government and non-government organizations are working to raise awareness about online harassment and promoting positive usage of internet. YouTube has launched Anti-Bullying Channel for youth named as Beat Bullying, involving celebrities to promote awareness and ways to tackle cyber bullying.

Apart from all these ways to tackle cyber bullying, one must also understand the needs of preventing cyber bullying before it starts. Following are some steps that can be taken to prevent getting bullied online:

Never share personal information like home address, date of birth, phone number, name of school/college, etc. or any confidential information online

Don't post explicit photos online; it can be used against to harass you. Only limited information should be shared online and that too with close friends.

Try not to discuss private matters on social networking sites, even with friends.

Don't let others take your pictures or videos without your consent.

Don't share internet passwords or account details with others

Be cautious while posting your pictures, messages, attachments or files on the internet or on social media.

Don't respond to any instant messages or emails from the harasser. Instead of this, report the incident to police as well as parents so that necessary action can be taken to stop the cyber bully.

Block any kind of communication with harasser.

To recapitulate, cyber bullying can be more serious than bullying. Awareness is key to prevent from getting harassed online. Children must be made aware about the consequences of sharing personal information online. Regular campaigns and programs should be conducted at school to teach students about cyber bullying and prevent them against such activities. Cyber bullying cannot be ignored and it is the responsibility of every individual to report such type of behavior immediately to the appropriate authorities so that perpetrator can be accordingly punished.

Angular:

In this article, I'm going to give you a general overview of a very popular and widely used client-side framework called Angular. This Angular introduction is mostly aimed at newcomer developers who have little experience with JS frameworks and wish to learn the basic idea behind Angular as well as understand its differences from AngularJS.

A JavaScript framework is a kind of buzzword these days: everyone keeps discussing these frameworks, and many developers are arguing about the best solution.

Why Do I Need a Framework?

If you're not sure what a JavaScript (or client-side) framework is, that's a technology providing us the right tools to build a web application while also defining how it should be designed and how the code should be organized.

Most JS frameworks these days are opinionated, meaning they have their own philosophy of how the web app should be built and you may need to spend some time to learn the core concepts. Other solutions, like Backbone, do not instruct developers on how they should craft the project, thus some people even call such technologies simply libraries, rather than frameworks.

Actually, JavaScript frameworks emerged not that long ago. I remember times where websites were built with poorly structured JS code (in many cases, powered by jQuery). However, client-side UIs have become more and more complex, and JavaScript lost its reputation as a "toy" language. Modern websites rely heavily on JS and the need to properly organize (and test!) the code has arisen. Therefore, client-side frameworks have become popular and nowadays there are at least dozen of them.

Mohit Garg MCA-2 Roll No

Artificial Intelligence

Artificial Intelligence (A.I.), and its many different applications from machine learning to computer vision to robotics, have been the popular buzzwords in the past couple of years or so, and not without its reasons.

The fact is, A.I. technologies have developed at an amazing — or alarming — rate for the past few years. On the one hand, it opens up many new opportunities. On the other hand, many people fear that A.I. will bring negative effects, especially on the issue of employment and the workforce.

In 2020 and onwards, we can expect this trend to continue, if not to grow even bigger than before, probably with the release of more mass-reaching A.I. applications.

While there can be various different implementations of A.I., in general, we can divide them into two big categories:

1. Data Learning

Here, the A.I. is implemented to collect and analyze data, including changes in real-time. As a result, A.I. can analyze data far faster than humans ever could, and then can take the necessary decision based on this data, or provide suggestions for human users.

2. Automation

A.I. is able to take automated actions based on its data analytics process and has the ability to reprogram itself — what we know as "machine learning". This opens up many different automation applications that are previously unavailable, for example, A.I. can analyze the trends on social media networks and automatically generate an appropriate post to capitalize on the trend. A.I. is also powering some of the marketing automation tools that help businesses streamline their marketing.

As a result, A.I.-related IT careers are increasing in demand, and employees with properly equipped skills will be very valuable in 2020 and onwards.

Nishu Rani MCA 2102

Cloud Computing

Cloud computing is not just a trendy application that people can use to store their photos and videos online. It is part of a business model that is taking the world by storm. Cloud computing not only changes how so many businesses store and access data, but it is also changing how many of these businesses operate.

How it named-

It is named as such because the information being accessed is found remotely in the cloud or a virtual space. Companies that provide cloud services enable users to store files and applications on remote servers and then access all the data via the Internet. This means the user is not required to be in a specific place to gain access to it, allowing the user to work remotely. Importance of Cloud Computing-

Cloud computing is so important because it offers flexibility, data recovery, little to no maintenance, easy access and a higher level of security.

Large businesses have an advantage when it comes to the cloud. They can work with the major cloud providers and get every service perk they need. But one of the great things about the cloud is that even small and medium-sized operations can benefit from it.

It is far more than just accessing files on multiple devices. Thanks to cloud computing services, users can check their email on any computer and even store files using services such as Drop box and Google Drive. Cloud computing services also make it possible for users toback uptheir music, files, and photos, ensuring those files are immediately available in the event of a hard drive crash.

It is not a single piece of technology like a microchip or a cellphone. Rather, it's a system primarily comprised of three services: software-as-a-service (SaaS), infrastructure-as-a-service (IaaS), and platform-as-a-service (PaaS).

Service Provide

Services can be both public and private—public services are provided online for a fee while private services are hosted on a network to specific clients.

The cloud structure allows individuals to save storage space on their desktops or laptops.

Aman MCA-2nd year 2103

BLOCK CHAIN

The blockchain is an undeniably ingenious invention – the brainchild of a person or group of people known by the pseudonym, Satoshi Nakamoto. But since then, it has evolved into something greater.

A blockchain is, in the simplest of terms, a time-stamped series of immutable records of data that is managed by a cluster of computers not owned by any single entity. Each of these blocks of data (i.e. block) is secured and bound to each other using cryptographic principles (i.e. chain).

The block-chain network has no central authority — it is the very definition of a democratized system. Since it is a shared and immutable ledger, the information in it is open for anyone and everyone to see. Hence, anything that is built on the block-chain is by its very nature transparent and everyone involved is accountable for their actions.

What exactly is Block chain?

A block chain carries no transaction cost.

(An infrastructure cost yes, but no transaction cost.) The blockchain is a simple yet ingenious way of passing information from A to B in a fully automated and safe manner. One party to a transaction initiates the process by creating a block. This block is verified by thousands, perhaps millions of computers distributed around the net. The verified block is added to a chain, which is stored across the net, creating not just a unique record, but a unique record with a unique history. Falsifying a single record would mean falsifying the entire chain in millions of instances. That is virtually impossible. Bit-coin uses this model for monetary transactions, but it can be deployed in many other ways.

How Does a Block chain Work?

Information held on a blockchain exists as a shared — and continually reconciled — database. This is a way of using the network that has obvious benefits. The blockchain database isn't stored in any single location, meaning the records it keeps are truly public and easily verifiable. No centralized version of this information exists for a hacker to corrupt. Hosted by millions of computers simultaneously, its data is accessible to anyone on the internet.

The reason why the blockchain has gained so much admiration is that:

- It is not owned by a single entity, hence it is decentralized
- The data is cryptographically stored inside
- The blockchain is immutable, so no one can tamper with the data that is inside the blockchain
- The blockchain is transparent so one can track the data if they want
- The three main properties of Blockchain Technology which have helped it gain widespread acclaim are as follows:

- Decentralization
- Transparency
- Immutability

Inderpreet Singh MCA-2nd year, 2130

Expert system:



Expert systems are rapidly growing in diversity of application and usage worldwide. Expert system is a computer system that emulates the decision making ability of a human expert. Expert system uses artificial intelligence methods to solve problems within a specialized domain that ordinarily requires human

expertise. The first expert system was developed in 1965 by Edward Feigenbaum and Joshua Lederberg of Stanford University in California.

Typically, such a system contains a knowledge base containing accumulated experience and a set of rules for applying the knowledge base to each particular situation that is described to the program. Expert systems can explain why data is needed and how conclusions were reached. Expert systems are meant to solve real problems which normally would require a specialized human expert. Expert systems have been used to solve a wide range of problems in domains such as medicine, mathematics, engineering, geology, computer science, business, law, defense and education. The Stanford researchers tried to identify domains where expertise was highly valued and complex, such as diagnosing infectious diseases (Mycin) and identifying unknown organic molecules (Dendral).

Expert systems were the first commercial systems to use knowledge based architecture. A knowledge based system is essentially composed of two sub-systems: the knowledge base and the inference engine. The knowledge base is used to store expert system expertise, including facts and rules. The inference engine is an automated reasoning system that evaluates the current state of the knowledge-base, applies relevant rules, and then asserts new knowledge into the knowledge base. Inference engines can also include explanation and debugging abilities. After decades of efforts, people have gradually developed a variety of expert systems based different principles. From the rule based Expert system to the Expert system based on neural network, each generation of expert system has its own advantages. In the future, with the further

development of neural network technology ,we can expect a more powerful expert system based on this technology.

Sandeep Kaur MSC-IT 10551

INFORMATION TECHNOLOGY

Information Technology Is specially based on computer science. It is a wonderful invention of modern science. Besides computers, it also includes telephone, television, radio, wireless, email, fax, the internet etc.

The Internet is a giant member information technology. It is the source of news and information. There is no information but is available in the internet. Thus, internet fulfills the demand of every individual.

In Old generation if we want to contact anyone we have to write a letter and it goes too late but now, we can contact anyone with video from our house, all are the gift of technology.

IT has proved to be a great blessing for the youngsters! We are living in an IT revolution era. Computers and IT have already taken over each and every field. Tell me an area or sphere where computers and IT are not being used! Education, industry, finance, defense, teaching, learning, research, medicine, accounting, entertainment, internet, online teaching, telecommunication, media, and space research and exploration. It is computer, computer and IT everywhere. The modern world will look void without computers and IT. Computers have created such an order in every field. They are so adroitly efficient in data storing and handling. They have man's life much more organized, systematic, simple, colourful, and awesomely efficient.

The younger generation is reaping huge benefits of IT. Everything is available online. Books, latest learning material and information, courses, online teaching, access to the best of universities, teachers, etc., everything wonderful has become so easily accessible. Educational sites have come into being owing to this IT revolution. Millions of students are using such sites to improve their academic skills and subject knowledge. Information Technology has not only simplified education, many other luxuries of life such movies, songs, video lectures, audio books, job opportunities, working and earning online, also.

Technology refers to enhance the meaning of life by the use of knowledge. Due to technological development, there are many types of equipment which we use in our day to day lives. The scientists come with the newest idea by conducting experiments and researches. To develop newer idea the technologists use creative ideas. Nowadays, people cannot withstand without the use of technology an are extremely accustomed to it. People await forte more advanced and

newer devices to be launched, examples are cars and mobiles. People look for the newest model majorly in cars and mobiles. '

The phones offer so much experience that it gives instant connectivity in any corner of the world with anyone. Hence, one should balance the use of such devices and help in maintaining a balance between nature and science in order to keep surrounding healthy and lead a peaceful life.

Today, the younger generation is reaping the benefits of technology in every possible way. Let it be books, games, learning material, teachers and so forth the students have access to everything in just a click. Also, technology has enabled the younger generation to search for jobs and universities by just sitting at home

In conclusion it can be said that the contemporary generation is really so fortunate to have all the wonderful benefits of IT. But information technology is not free from demerits. Social and antisocial movement, hijacking, fraudulence and many other crimes can take place for the misuse of information technology.

Just a notice for everyone, plz don't use technology for any bad work, use the innovation for good works and help to grow the human civilization.

Isha Mittal

PGDCA

2045

Smartphone

The convergence of communication and computing for mobile consumer devices is on the evolutionary course to bring interoperability and leverage the services and functions from each and every industry. In this process of convergence the Smartphone's are the leading devices taking the front end and playing the role of universal mobile terminal. As a marketing strategy the Smartphone term was introduced in the market, referring a new class of



mobile phones that provides integrated services from communication, computing and mobile sectors including voice communication, messaging, personal information management (PIM) applications and wireless communication capability. In real sense Smartphone is a mobile phone with advanced features and functionality beyond traditional functionalities like making phone calls and sending text messages. The Smartphone are equipped with the capabilities to display photos, play games, play videos, navigation, built-in camera, audio/video playback and recording, send/receive e-mail, built in apps for social web sites and surf the Web, wireless Internet and much more. Due to same reasons the Smartphone's now become a common choice for consumers along with the use in business as it was initially intended for business users only. The latest surveys shows that the popularity of Smartphone's is increasing in general public with the more paces then it is increasing in Corporations. Initially the Smartphone's were only perceived for business use due to their cost and application, but not today, today we are in a frenetic Smartphone

Impact of Smartphone's on Society 217 society populated with the Smartphone's from many vendors providing a range of advanced functionalities and services on a piece of hardware. Today Smartphone's enable consumers, advertisers and publishers how to better engage, socialize using the ubiquitous experience this advanced platform by leveraging it's of the firm. The focus of income statement is on the operating revenues and expenses. User groups of financial reports for decision—making require data related to all easy to use and availability characteristic. Due to its ubiquitous nature and social acceptance we can find Smartphone in educational institutes, hospitals, public places and shopping malls etc

Rajinder Kaur BCA-2nd year 1257

Cyber Security

Cyber Security plays an important role in the field of information technology .Securing the information have become one of the biggest challenges in the present day. Whenever we think about the cyber security the first thing that comes to our mind is cyber crimes which are increasing immensely day by day. Various Governments and companies are taking many measures in order to prevent these cyber crimes. Besides various measures cyber security is still a very big concern to many. Cyber security refers to the body of technologies, processes, and practices designed to protect networks, devices, programs, and data from attack, damage, or unauthorized access. Cyber security may also be referred to as information technology security. Cyber security is important because government, military, corporate, financial, and medical organizations collect, process, and store unprecedented amounts of data on computers and other devices. A significant portion of that data can be sensitive information, whether that be intellectual property, financial data, personal information, or other types of data for which unauthorized access or exposure could have negative consequences. Organizations transmit sensitive data across networks and to other devices in the course of doing businesses, and cyber security describe the discipline dedicated to protecting that information and the systems used to process or store it. As the volume and sophistication of cyber attacks grow, companies and organizations, especially those that are tasked with safeguarding information relating to national

security, health, or financial records, need to take steps to protect their sensitive business and personnel information. As early as March 2013, the nation's top intelligence officials cautioned that cyber attacks and digital spying are the top threat to national security, eclipsing even terrorism. The most difficult challenge in cyber security is the everevolving nature of security risks themselves. Traditionally, organizations and the government have focused most of their cyber security resources



on perimeter security to protect only their most crucial system components and defend against known treats. Today, this approach is insufficient, as the threats advance and change more quickly than organizations can keep up with. As a result, advisory organizations promote more proactive and adaptive approaches to cyber security.

Veerpal kaur BCA-2nd year 1207

Artificial intelligence

From Cortana to autonomous vehicles, the rapid progress of AI development is showing no signs of slowing down. Artificial intelligence can encompass nearly anything, from search engine algorithms to robotics. Here's a more detailed definition of AI: Artificial intelligence (AI) is an interdisciplinary branch of computer science that builds smart machines. These machines are capable of performing complex tasks, even ones that require human intelligence. AI uses a variety of approaches, such as deep learning and machine learning, to make jobs more natural to do. The vast improvement of these two capabilities has caused a paradigm shift in all sectors of the technology industry. There are two types of artificial intelligence: narrow AI (weak AI), and general AI (AGI or strong AI).

AI in the Criminal Justice System



As crazy as it sounds, AI has already made it in the criminal justice system. Many police departments and courts are turning to artificial intelligence to mitigate bias. A machine now handles profiling and risk assessment. AI looks for patterns in criminal records and historical data to make a recommendation. The analysis should be free from racial,

sexual, or other biases - in theory. There have been reports that AI is using data to send people to jail for the wrong reasons. Predicting a person has a "high risk" of future criminal activity without any context is wrong. It's like the movie "Minority Report," where people get arrested before they commit a crime. If the justice system is going to use AI for the long term, it has to be 100% vetted and accurate because lives are at stake. One welcome benefit of AI in the justice system is that the retrieval of information is going to be faster. Algorithms can help people check someone's criminal background or any public documents online. Lines at the courthouse or police department will be shorter, putting less strain on police officers and court officials.

Manpreet kaur BCA-2nd year 1238

Ethical hacking

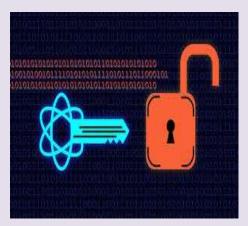


Ethical Hacking is the way to find out the weaknesses and vulnerabilities in the system or computer network. It is a way to describe the procedure of hacking in an ethical way for any network. The ethical hacker has the good purpose to do it. Actually it has become the general perception in our mind for hacker that he will be bad, fanatic, criminal and unethical. Basically some of the hacker has even done very badly with some organizations like they have stolen very important information of their customers. In some of the government organizations they have damaged very confidential information like social security numbers and other sensitive information. That is the reason hackers are not having very good reputation. To avoid such conditions many organization have hired many ethical hackers to keep a track on their system and computer network. Ethical hackers are supposing to test and check vulnerabilities and weaknesses in the present system. There is one another face of the coin which tells that without hackers the vulnerabilities and holes of software would remain undiscovered [1]. In this paper I have tried to explain the good and bad face of hacker and even of ethical hackers also and what re the different impact on the different areas of our society. A study shows that almost 90% attacks happen on the inside which shows that easy it is to invade into the system or network for insiders. I have tried to explore the ethics behind the ethical hacking and the problems lie with this particular field of information technology where security is concerned. Though ethical hacking has become a very upcoming technological subject from the last few years, now the doubt remains the true intentions of the hacker. Hackers in this context have had a very measurable impact on society. There are several fields in computing where hackers made measurable impact on society. In this article I have tried to look into different ways how we can make ethical hacking safe and ethical.

Depinder Joshi BCA-2nd year

CRYPTOGRAPHY

Cryptography is a method of protecting information and communications through the use of codes so that only those for whom the information is intended can read and process it. The pre-fix "crypt" means "hidden" or "vault" and the suffix "graphy" stands for "writing."



In computer science, cryptography refers to secure information and communication techniques derived from mathematical concepts and a set of rule-based calculations called algorithms to transform messages in ways that are hard to decipher. These deterministic algorithms are used for cryptographic key generation and digital signing and verification to protect data privacy, web browsing on the internet and confidential communications such as credit card transactions and email.

Modern cryptography concerns itself with the following four objectives:

Confidentiality: the information cannot be understood by anyone for whom it was unintended Integrity: the information cannot be altered in storage or transit between sender and intended receiver without the alteration being detected

Non-repudiation: the creator/sender of the information cannot deny at a later stage his or her intentions in the creation or transmission of the information

Authentication: the sender and receiver can confirm each other's identity and the origin/destination of the information.

Nishu Bansal MCA-2nd year 2101

INFORMATION TECHNOLOGY

In the world as we can't survive without food and water, technology is also very essential for the



survival of human beings. Information technology means any technology through which we get information. They even can't imagine their life without technology. In every work it is indeed necessary.

As we know the technology is developed by humans, from every small things to big things it contains everything for example mobile phones, computers, laptops, internet, electronic gadgets, robotics etc.

Mostly it s connected to Computer Science as we know in every field the technology is compulsory like that in Schools, Colleges, Hospitals, Offices, etc.

As if we compare today's generation with the old times it is very different and very difficult to compare because in earlier times people can't contact each other easily, it take lots of time to talk to another city but nowadays it is very easy to talk to another city by calling or by social media,

it is all due to the vast development of the technology.

Nowadays we can easily get any information through internet. As we see earlier all the works were done manually but today all the machines are developed by which manual work has been decreased. It is because IT have already taken over each and every field. Education, industry, finance, defense, teaching, learning, research, medicine,



accounting, entertainment, internet, online teaching, telecommunication, media, and space research and exploration.

As by the technology people have become more modern like digitalization, as all the works are done online, for example online payments, billings, shopping etc.



IT has proved to be a great blessing for the all the people who are using it properly. By it human's life has become very easy because without it the life is very unimaginable and complicated. The modern world will look void without computers and IT. Computers have created such an order in every field. They are so adroitly efficient in data storing and handling. They have man's life much more organized, systematic, simple, colorful, and awesomely efficient.

To sum up it can be said that the contemporary generation is really so fortunate to have all the wonderful benefits of IT.

Rajeev Goyal B.Voc(Sd)-2nd year 11119

NETWORK SECURITY



System and Network Technology is a key technology for a wide variety of applications. It is a critical requirement in current situation networks, there is a significant lack of security methods that can be easily implemented. There exists a "communication gap" between the developers of security technology and developers of networks. Network design is a developed process that is depends on

the Open Systems Interface (OSI) model. The OSI model has several advantages when designing network security. It offers modularity, easeĞofĞuse, flexibility and standardization of protocols. The protocols of different layers can be easily combined to create stacks which allow modular development. In contrast to secure network design is not a well developed process. There isn't a methodology to manage the complexity of security requirements. When considering about network security, it should be emphasized that the complete network is secure. It does not only concern with the security in the computers at each end of the communication chain. When transferring from one node to another node data the communication channel should not be vulnerable to attack. A hacker will target the communication channel, get the data, and decrypt it and reĞinsert a duplicate message. Though securing the network is just as important as securing the computers and encrypting the message. While developing a secure network, the following needs to be considered.

Amandeep kaur BCa-2nd year 1277

Internet of Things

There's a lot of noise at the moment about the Internet of Things (or IoT) and its impact on everything from the way we travel and do our shopping to the way manufacturers keep track of inventory. But what is the Internet of Things? How does it work? And is it really that important?

What is the Internet of Things?

In a nutshell, the Internet of Things is the concept of connecting any device (so long as it has an on/off switch) to the Internet and to other connected devices. The IoT is a giant network of connected things and people – all of which collect and share data about the way they are used and about the environment around them.

That includes an extraordinary number of objects of all shapes and sizes – from smart microwaves, which automatically cook your food for the right length of time, to self-driving cars, whose complex sensors detect objects in their path, to wearable fitness devices that measure your heart rate and the number of steps you've taken that day, then use that information to suggest exercise plans tailored to you. There are even connected footballs that can track how far and fast they are thrown and record those statistics via an app for future training purposes.

How does it work?

Devices and objects with built in sensors are connected to an Internet of Things platform, which integrates data from the different devices and applies analytics to share the most valuable information with applications built to address specific needs.

These powerful IoT platforms can pinpoint exactly what information is useful and what can safely be ignored. This information can be used to detect patterns, make recommendations, and detect possible problems before they occur.

For example, if I own a car manufacturing business, I might want to know which optional components (leather seats or alloy wheels, for example) are the most popular. Using Internet of Things technology, I can:

Use sensors to detect which areas in a showroom are the most popular, and where customers linger longest;

Drill down into the available sales data to identify which components are selling fastest;

Automatically align sales data with supply, so that popular items don't go out of stock.

The information picked up by connected devices enables me to make smart decisions about which components to stock up on, based on real-time information, which helps me save time and money.

With the insight provided by advanced analytics comes the power to make processes more efficient. Smart objects and systems mean you can automate certain tasks, particularly when these are repetitive, mundane, time-consuming or even dangerous. Let's look at some examples to see what this looks like in real life.

Scenario #1: IoT in your home

Imagine you wake up at 7am every day to go to work. Your alarm clock does the job of waking you just fine. That is, until something goes wrong. Your train's cancelled and you have to drive to work instead. The only problem is that it takes longer to drive, and you would have needed to get up at 6.45am to avoid being late. Oh, and it's pouring with rain, so you'll need to drive slower than usual. A connected or IoT-enabled alarm clock would reset itself based on all these factors, to ensure you got to work on time. It could recognize that your usual train is cancelled, calculate the driving distance and travel time for your alternative route to work, check the weather and factor in slower travelling speed because of heavy rain, and calculate when it needs to wake you up so you're not late. If it's super-smart, if might even sync with your IoT-enabled coffee maker, to ensure your morning caffeine's ready to go when you get up.

Scenario #2: IoT in transport

Having been woken by your smart alarm, you're now driving to work. On comes the engine light. You'd rather not head straight to the garage, but what if it's something urgent? In a connected car, the sensor that triggered the check engine light would communicate with others in the car. A component called the diagnostic bus collects data from these sensors and passes it to a gateway in the car, which sends the most relevant information to the manufacturer's platform. The manufacturer can use data from the car to offer you an appointment to get the part fixed, send you directions to the nearest dealer, and make sure the correct replacement part is ordered so it's ready for you when you show up.

Varinder Singh

BCA-2 1229

Department in News





ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਦਾ ਨਤੀਜਾ ਸ਼ਾਨਦਾਰ

ਪੱਤਰ ਪ੍ਰੇਰਕ, ਬੁਢਲਾਡਾ : ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ ਵੱਲੋਂ ਐੱਮਸੀਏ ਭਾਗ ਪਹਿਲਾ ਸਮੇਸਟਰ ਦੂਜਾ ਦਾ ਨਤੀਜਾ ਐਲਾਨਿਆ ਗਿਆ। ਇਸ ਪ੍ਰੀਖਿਆ ਵਿੱਚ ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਆਪਣਾ ਸ਼ਾਨਦਾਰ ਪ੍ਰਦਰਸ਼ਨ ਕਰਦੇ ਹੋਏ ਅਮਨਦੀਪ ਕੌਰ ਨੇ 93 ਐਸ.ਜੀ.ਪੀ.ਏ. ਲੈ ਕੇ ਪਹਿਲਾ ਸਥਾਨ ਅਮਨਦੀਪ ਕੌਰ ਅਤੇ ਰੋਹਿਤ ਮਹਾਜਨ ਨੇ 8.78 ਐਸ.ਜੀ.ਪੀ ਏ. ਲੋਕੇ ਦੂਜਾ ਸਥਾਨ ਅਤੇ ਸੁਖਦੀਪ ਕੌਰ ਤੇ ਮੀਨੂੰ ਸ਼ਰਮਾ 8.65 ਐਸ.

ਜੀ ਪੀ.ਏ. ਲੈਕੇ ਸਾਂਝੇ ਤੌਰ ਤੇ ਤੀਜਾ ਸਥਾਨ ਹਾਮਿਲ ਕੀਤਾ। ਇਸ ਮੋਕੇ ਕੰਪਿਊਟਰ ਵਿਭਾਗ ਦੇ ਮੁਖੀ ਪ੍ਰੋ: ਰੇਖਾ ਕਾਲੜਾ ਨੇ ਵਿਦਿਆਰਥੀਆ ਅਤੇ ਸਟਾਫ ਨੂੰ ਵਧਾਈ fellow face fa fee fellowerfort ਅਤੇ ਸਟਾਫ਼ ਦੀ ਸਖਤ ਮਿਹਨਤ ਦਾ ਨਤੀਜਾ ਹੈ। ਕਾਲਜ ਪ੍ਰਿੰਸੀਪਲ ਡਾ. ਭਲਦੀਪ ਸਿੰਘ ਬੱਲ ਨੇ ਵਿਦਿਆਰਥੀਆਂ ਅਤੇ ਸਟਾਫ ਤ ਵਧਾਈ ਦਿੱਤੀ ਤੇ ਕਿਹਾ ਕਿ ਕਾਲਜ ਨੂੰ ਫ਼ਬਾਈ ਦਿਤੀ ਤੇ ਵਿੱਚ ਚੱਲ ਰਿਹਾ ਇਹ ਕਿੱਤਾ ਮੁਖੀ ਕੋਰਸ

ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਕੰਪਿਊਟਰ ਵਿਸ਼ੇ ਦੀ ਪ੍ਰੈਕਟੀਕਲ ਸਿੱਖਿਆ ਵਿੱਚ ਨਿਪੁੰਨ ਬਣਾ ਰਹੇ ਹਨ ਅਤੇ ਅਧਿਆਪਕਾਂ ਦੇ ਪੜਾਉਣ ਦੇ ਤਰੀਕੇ ਨੂੰ ਮੰਦੇਨਜ਼ਰ ਰੱਖਦੇ ਹੋਏ ਆਉਣ ਵਾਲੇ ਸਮੇਂ ਵਿੱਚ ਇਹਨਾਂ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਪਲੇਸਮੇਂਟ ਯਕੀਨੀ ਹੈ ਅਤੇ ਵਿਇਆਰਥੀਆਂ ਨੂੰ ਨੌਕਰੀ ਤੋਂ ਵਾਂਝੇ ਨਹੀਂ ਹੋਣਾ ਪਵੇਗਾ। ਇਸ ਮੌਕੇ ਪੇ: ਠਰਿੰਦਰ ਸਿੰਘ, ਦੀਪਾਲੀ, ਪਰਮੀਤ ਕੋਰ, ਸ਼ਬੀਨਾ, ਅਨੁਪ ਸਿੰਘ, ਅਮਨਪੀਤ ਸਿੰਘ ਆਦਿ ਹਾਜ਼ਰ ਸਨ।



ਸ਼ੁਰੂ ਨਾਨਕ ਕਾਲਜ ਬੁਢਲਾਡਾ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਨਾਲ ਪ੍ਰਿੰ ਕੁਲਦੀਪ ਸਿੰਘ ਬੱਲ।

ਆਂ ਦੀ ਸ਼ਖ਼ਸੀਅਤ ਉਸਾਰੀ 'ਤੇ ਸੈਮੀਨਾਰ



ਸੈਮੀਨਾਰ ਦੇ ਬੁਲਾਰਿਆਂ ਦਾ ਸਨਮਾਨ ਕਰਦੇ ਹੋਏ ਕਾਲਜ ਪ੍ਰਬੰਧਕ। ਫੋਟੋਐਨਪੀ ਸਿੰਘ

ਦਾ ਕਹਿਣਾ ਸੀ ਕਿ ਵਿਦਿਆਰਥੀਆਂ ਸਾਰਥਿਕ ਬਣਾਉਣਾ ਸਮੇਂ ਦੀ ਮੁੱਖ ਲੋੜ ਨਾਲ ਇਮਤਿਹਾਨਾਂ ਦੇ ਦਿਨਾਂ ਵਿੱਚ ਕੰਮ ਹੈ। ਉਨ੍ਹਾਂ ਕਿਹਾ ਕਿ ਕਿਸੇ ਵੀ ਆਉਣ ਵਾਲੇ ਸਰਲ ਤਰੀਕਿਆਂ ਨੂੰ ਇੰਟਰਵਿਊ ਸਮੇਂ ਜਾ ਸਰਕਾਰੀ ਨੌਕਰੀ

ਲਈ ਹੋਣ ਵਾਲੇ ਮੁਕਾਬਲਿਆਂ ਦੀ ਤਿਆਰੀ ਨੂੰ ਗੰਭੀਰਤਾ ਨਾਲ ਲੈਣਾ ਜ਼ਰੂਰੀ ਹੈ। ਉਨ੍ਹਾਂ ਕਿਹਾ ਕਿ ਅਜਿਹਾ ਤਾਂ ਹੀ ਸਹੀ ਸਿੱਧ ਹੋ ਸਕਦਾ ਹੈ ਜੋ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੜ੍ਹਾਈ ਸਮੇਂ ਮੋਬਾਇਲ ਫੋਨਾਂ ਤੋਂ ਦੂਰ ਰੱਖਿਆ ਜਾਵੇ। ਉਨ੍ਹਾਂ ਕਿਹਾ ਕਿ ਆਮ ਗਿਆਨ ਲਈ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਅਖ਼ਬਾਰਾਂ ਅਤੇ ਕਰੰਟ ਦੇਸ਼ ਵਿਆਪੀ ਮਸਲਿਆਂ ਨਾਲ ਜੋੜਨਾ ਵੀ ਮੁੱਖ ਵਿਸ਼ਾ ਹੈ। ਕਾਲਜ ਪ੍ਰਿੰਸੀਪਲ ਡਾ. ਕੁਲਦੀਪ ਸਿੰਘ ਬੱਲ ਨੇ ਕਿਹਾ ਕਿ ਮੌਜੂਦਾ ਯੁੱਗ ਵਿੱਚ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਤਕਨੀਕੀ ਸਿੱਖਿਆ ਨਾਲ ਹਰ ਖੇਤਰ ਵਿੱਚ ਮੋਹਰੀ ਬਣਾਉਣ ਲਈ ਬਹਪੱਖੀ ਵਿਕਾਸ ਦਾ ਹੋਣਾ ਜ਼ਰੂਰੀ ਹੋ ਗਿਆ ਹੈ। ਇਸ ਮੌਕੇ ਵਿਭਾਗ ਦੀ ਮੁਖੀ ਰੇਖਾ ਕਾਲੜਾ ਵੀ ਹਾਜ਼ਰ ਸਨ।



ਬੱਚਿਆਂ ਨੂੰ ਹੈਕਿੰਗ ਤੇ ਵੈੱਬਸਾਈਟਸ ਦੀ ਸਕਿਓਰਿਟੀ ਸਬੰਧੀ ਦਿੱਤੀ ਜਾਣਕਾਰੀ

ਭੁਵਨਾਲਾਂ, 16 ਅਕਤੂਬਰ (ਸਾਮਨ)-ਸਥਾਨਕ ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਦੇ ਕੰਪਿਊਟਰ ਕਿਜ਼ਾਗ ਵੱਲੋਂ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਨਵੇਂ ਸ਼ੁਰੂ ਕੀਤੇ ਗਏ ਵੀ ਵਾੜ ਸਾਈਬਰ ਸੰਗਰਿਰਿਟੀ ਕਰਸ ਸੰਬੰਧੀ ਉਚੇਰੀ ਜਾਣਕਾਰੀ ਦੇਣ ਲਈ ਬਾਹਰ ਤੋਂ ਅੰਗਸਮਤਟ ਨੈਕਚਰਾਜ ਬਲਾ ਕੇ ਲਗੇ ਗੁਰੂ ਕੀਤੀ ਗਈ ਸੀ, ਜਿਸ ਤੁਹਿਤ ਅੱਜ ਗੋਲਟ ਲੈਕਚਰ ਕਰਵਾਇਆ ਗੋਆ। ਇਸ ਸੰਬੰਧੀ ਵੀ ਵਾਕ ਦੇ ਨੌਡਨ ਅੰਗਸਰ ਨੀਵਿਤ ਸਿੰਘ ਨੇ ਦੱਸਿਆ ਕਿ ਬਾਇਆਰਥੀਆਂ ਨੂੰ ਦਿੱਟਲਨੇਟ ਸਕਿਓਫਿਟੀ ਵੀ ਹੈਰਿੰਗ ਸੰਬੰਧੀ ਜਾਣਕਾਰੀ ਦੇਣ ਲਈ



सेवचर सेवार भावत है वासर विकिथानची। काल

ਵੀ ਵਾਕ ਸਾਈਤਰ ਸਥਿਤਿੰਤਨੀ ਕਰਜ ਸ਼ੁਰੂ ਕੀਤਾ ਹੈ, ਜਿਸ ਅਨੁਸਾਰ ਅੱਜ ਬੰਗੀਗੜ ਦੀ ਅੰਘੀਨ ਟੈਕਨਾਲੋਜੀ ਕੰਪਨੀ ਤੋਂ ਅੰਬਰਿਲ ਹੈਕਰ ਅਤੇ ਸਾਈਗਣ ਸਥਿਤਿਤਿਨੀ ਅੰਗਪਸ਼ਟ ਤਰੂਟਾ ਬਾਵਲ, ਪ੍ਰਾਂ ਅਤੇ ਹਰਲੀਨ ਦਾ ਜੀਤਨ ਲੈਕਰਜ ਕਰਵਾਇਆ ਤਿਆਂ ਤੋਂ ਕਿ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਸ ਸਬੰਧੀ ਉਚੇਰੀ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੈ ਸਥੇ।

ਵਿਸ਼ਮੌਕ ਕੰਪਨੀ ਦ ਐਕਸਪਰਟ ਕਰੂਟਾ ਰਾਵਲ ਨੇ ਦੱਸਿਆ ਕਿ ਇਸ ਲੋਕੜਾ 'ਚ ਕੱਚਿਆਂ ਨੇ ਹੋਰਿੰਗ ਅਤੇ ਵੈੱਬਸਾਈਟਸ ਦੀ ਸਕਿਓਰਟੀ ਅਤੇ ਬਿਸ ਤਰ੍ਹਾਂ ਕੈਂਦਰਕ ਤੋਂ

अवाहिक से ताला है, वह उनके विशेष कहा। पैदा विद्यालय के विशेष विद्यालय के व्यक्ति के वह जाने के विशेष विद्यालय कि विद्या

17-10-19



ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਬੁਢਲਾਡਾ ਵਿਖੇ ਅੰਤਰ ਰਾਸ਼ਟਰੀ ਮਹਿਲਾ ਦਿਵਸ ਨੂੰ ਸਮਰਪਿਤ ਸਮਾਗਮ ਮੌਕੇ ਦਾ ਦ੍ਰਿਸ਼।

ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਵਿਖੇ ਮਹਿਲਾ ਦਿਵਸ ਨੂੰ ਸਮਰਪਿਤ ਸੈਮੀਨਾਰ

ਬੁਢਲਾਡਾ, 9 ਮਾਰਚ (ਰਾਹੀ)- ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਬੁਢਲਾਡਾ ਵਿਖੇ ਨਾਰੀ ਸਸ਼ਕਤੀਕਰਨ ਸੋਲ ਦੇ ਸਹਿਯੋਗ ਨਾਲ ਅੰਤਰ ਰਾਸ਼ਟਰੀ ਮਹਿਲਾ ਦਿਵਸ ਨੂੰ ਸਮਰਪਿਤ ਸੋਮੀਨਾਰ ਕਰਵਾਇਆ ਗਿਆ, ਜਿਸ ਨੂੰ ਸੰਬੰਧਨ ਕਰਦਿਆਂ ਨਾਰੀ ਸਸ਼ਕਤੀਕਰਨ ਸੋਲ ਦੇ ਕਨਵੀਨਰ ਪ੍ਰੋ ਰੇਖਾ ਕਾਲੜਾ ਨੇ ਕਿਹਾ ਕਿ ਔਰਤ ਨੂੰ ਆਪਣੇ ਆਪ 'ਤੇ ਆਤਮਵਿਸ਼ਵਾਸ, ਭਰੋਸਾ ਤੇ

ਮਾਣ ਹੋਣਾ ਚਾਹੀਦਾ ਹੈ ਕਿਉਂਕਿ ਔਰਤ ਮਨੁੱਖ ਤੇ ਸਮਾਜ ਦੀ ਜਨਮਦਾਕੀ ਹੈ, ਜਿਸ ਦੇ ਫਲਸਤੂਪ ਜੀਵਨ ਔਗੇ ਢਲਦਾ ਹੈ। ਪੰਜਾਬੀ ਵਿਕਾਗ ਦੇ ਮੁਖੀ ਡਾ. ਸਤਗੂਰ ਸਿੰਘ ਨੇ ਕਿਹਾ ਕਿ ਔਰਤ ਦੀ ਮਹਾਨਤਾ ਸਦਕਾ ਹੀ ਸੁੰਦਰ ਤੇ ਨਰੋਏ ਸਮਾਜ ਦੀ ਰਚਨਾ ਹੁੰਦੀ ਹੈ ਅਤੇ ਔਰਤਾਂ ਨੂੰ ਆਪਣੇ ਹੱਕਾਂ ਲਈ ਜਾਗਰੂਕ ਹੋਣ ਦੀ ਲੋੜ ਹੈ।





ਮਾਰਥੀਆਂ ਨਾਲ ਖ਼ੁਸ਼ੀ ਸਾਂਝੀ ਕਰਦੇ

ਐਮ.ਸੀ.ਏ. ਨਤੀਜੇ 'ਚ ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਦੇ ਸ਼ਾਨਦਾਰ ਨਤੀਜੇ

for

ਬੁਢਲਾਡਾ, 26 ਜੂਨ (ਰਾਹੀ)-ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ ਵਲੋਂ ਘੱਸ਼ਿਤ ਅੰਮ ਸੀ.ਏ. ਭਾਗ ਤੀਜਾ ਸਮੈਸਟਰ ਛੋਵਾਂ ਦੇ ਨਤੀਜੇ ਵਿਚ ਗੁਰੂ ਨਾਨਕ ਕਾਲਜ ਬੁਢਲਾਡਾ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਸ਼ਾਨਦਾਰ ਪ੍ਰਦਰਸ਼ਨ ਕਰਦਿਆਂ ਨਵਾਂ ਕੀਰਤੀਮਾਨ ਸਥਾਪਿਤ ਕੀਤੇ ਹਨ। ਜਾਣਕਾਰੀ ਦਿੰਦਿਆਂ ਕੰਪਿਊਟਰ ਸਾਇਸ ਵਿਭਾਗ ਦੇ ਮੁਖੀ ਪ੍ਰੈ: ਰੇਖਾ ਕਾਲਡਾ ਨੇ ਵਰੇਗੰਢ ਮਨਾਈ

ਵੱੱ ਸਿਆ

ਕਿਦਿਆਰਥੀਆਂ ਦਾ ਸਨਮਾਨ ਕਰਦਿਆਂ ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਸਨਮਾਨ ਕਰਦਿਆਂ ਵਿਕਾਗ ਦੇ ਅਧਿਆਪਕਾਂ ਨੂੰ ਵਧਾਈ ਦਿੰਦਿਆਂ ਕਿਹਾ ਕਿ ਉਹ ਮਾਰ ਮਹਿਸੂਸ ਕਰ ਰਹੇ ਹਨ ਕਿ ਇਸ ਸੰਸਥਾ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਦੇ ਮਿਹਨਤ ਅਤੇ ਲਗਨ ਨਾਲ ਪੜ੍ਹਾਈ ਕੀਤੀ ਹੈ, ਉਸੇ ਕਾਰਨ ਇਹ ਨਤੀਜ਼ ਮਿਲ ਹਨ। ਇਸ ਮੌਕੇ ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਵਿਕਾਗ ਦੇ ਸਹਾਇਕ ਪ੍ਰੋਫੈਸਰ ਗੀੜੂ ਸਿੰਗਲਾ, ਨੀਤੀਕਾ ਗੋਇਲ, ਅਨੁਪ ਸਿੰਘ ਖ਼ਾਲਸਾ, ਅਮਨਪ੍ਰੀਤ ਸਿੰਘ ਮੌਜੂਦ ਸਨ।

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ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸੰਬੋਧਨ ਕਰਦੇ ਹੋਏ ਮਾਹਿਰ ਪੰਕਜ ਕੁਮਾਰ।

ਜਾਵਾ ਵਿਸ਼ੇ 'ਤੇ ਪੰਜ–ਰੋਜ਼ਾ ਵਰਕਸ਼ਾਪ ਲਾਈ

ਪੱਤਰ ਪ੍ਰੇਰਕ, ਬੁਢਲਾਡਾ : ਸਥਾਨਕ ਕਾਲਜ ਦੇ ਕੰਪਿਊਟਰ ਸਾਇੰਸ ਵਿਭਾਗ ਵੱਲੋਂ ਪੰਜ-ਰੋਜ਼ਾ ਵਰਕਸ਼ਾਪ ਦਾ ਆਯੋਜਨ ਕੀਤਾ ਗਿਆ ਜਿਸ ਵਿੱਚ ਵਿਭਾਗ ਦੇ ਐੱਮ.ਸੀ.ਏ. ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਹਿੱਸਾ ਲਿਆ।

ਇਸ ਵਰਕਸ਼ਾਪ ਵਿੱਚ ਸਕਾਈਕੋਨ ਟੈਕਨਾਲੌਜੀ ਬਠਿੰਡਾ ਤੋਂ ਸ਼੍ਰੀ ਪੰਕਜ ਕੁਮਾਰ ਵਿਸ਼ੇਸ਼ ਮਾਹਿਰ ਦੇ ਤੌਰ ਤੇ ਪਹੁੰਚੇ। ਪੰਜ ਦਿਨਾਂ ਤੱਕ ਚੱਲਣ ਵਾਲੀ ਇਸ ਵਰਕਸ਼ਾਪ ਦਾ ਮੁੱਖ ਉਦੇਸ਼ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਜਾਵਾ ਪ੍ਰੋਗਰਾਮਿੰਗ ਭਾਸ਼ਾ ਦੀ ਵਿਸਥਾਰ ਵਿੱਚ ਵਰਤੋਂ ਕਰਕੇ ਪ੍ਰਾਜੈਕਣ ਬਣਾਉਣ ਦੇ ਤਰੀਕਿਆਂ ਨੂੰ ਸਿਖਾਉਣਾ ਹੈ।

ਵਰਕਸ਼ਾਪ ਦਾ ਸੰਚਾਲਨ ਕਰਦਿਆਂ ਕੰਪਿਊਟਰ ਵਿਭਾਗ ਮੁਖੀ ਪ੍ਰੋਫੈਸਰ ਰੇਖਾ ਕਾਲੜਾ ਨੇ ਦੱਸਿਆ ਕਿ ਇਸ ਵਰਕਸ਼ਾਪ ਵਿੱਚ ਜਾਵਾ ਦੀ ਵਰਤੋਂ ਕਰਕੇ ਪ੍ਰਾਜੈਕਟ ਬਣਾਉਣ ਸਬੰਧੀ ਜਾਂਚ ਸਿਖਾਈ ਜਾਵੇਗੀ ਤਾਂ ਜੋ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਕੰਪਨੀਆਂ ਵਿੱਚ ਨੌਕਰੀ ਲੈਣ ਸਮੇਂ ਕੋਈ ਮੁਸ਼ਕਿਲ ਪੇਸ਼ ਨਾ ਆਵੇ। ਇਸ ਮੌਕੇ ਸਕਾਈਕੈਨ ਟੈਕਨਾਲੌਂਜੀ ਦੇ ਮਾਹਿਰ ਪੰਕਜ ਕੁਮਾਰ ਨੇ ਦੱਸਿਆ ਕਿ ਇਸ ਵਰਕਸ਼ਾਪ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਕੰਪਨੀਆਂ ਦੀ ਮੰਗ ਅਨੁਸਾਰ ਜਾਵਾ ਦੇ ਪ੍ਰੈਕਟੀਕਲ ਕਰਵਾਏ ਜਾਣਗੇ ਅਤੇ ਚੰਗਾ ਪ੍ਰਦਰਸ਼ਨ ਕਰਨ ਵਾਲੇ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਅਸੀਂ ਆਪਣੀ ਕੰਪਨੀ ਵਿੱਚ ਕੰਮ ਕਰਨ ਦਾ ਮੌਕਾ ਵੀ ਦੇਵਾਂਗੇ।

ਕਾਲਜ ਪ੍ਰਿੰਸੀਪਲ ਡਾ. ਕੁਲਦੀਪ ਸਿੰਘ ਬੱਲ ਨੇ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਵਰਕਸ਼ਾਪ ਵਿੱਚ ਉਤਸ਼ਾਹ ਦਿਖਾਉਣ ਅਤੇ ਲਗਨ ਨਾਲ ਸਿੱਖਣ ਦੀ ਪ੍ਰੇਰਨਾ ਦਿੱਤੀ। ਇਸ ਮੌਕੇ ਪ੍ਰੋ. ਨਰਿੰਦਰ ਸਿੰਘ, ਗਗਨਦੀਪ ਕੌਰ, ਦੀਪਾਲੀ, ਬੂਟਾ ਸਿੰਘ ਅਤੇ ਪਰਮੀਤ ਕੌਰ ਆਦਿ ਹਾਜ਼ਿਰ ਸਨ।

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