

**SRM VALLIAMMAI ENGINEERING COLLEGE**

**COMPUTER SOCIETY OF INDIA**

**STUDENT BRANCH**

**MAGAZINE - 2021**

**VOLUME - II ISSUE - II**



**LimeLight**



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Tamil Nadu – 603203.

## **About SRMVEC CSI-SB :**

SRM Valliammai Engineering College Student Branch was started in the year 2007. For the past 14 years, SRMVEC has organised various events and contributed many technical articles to CSI. It is one of the most active student branches of CSI. It has received the 'Best Accredited Student Branch Award' for four consecutive years since 2015 at Annual CSI Convention from Computer Society of India. Currently there are more than 370 Student members in the student branch.

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# PREFACE

It gives us great pleasure to release the second issue of volume two 'LimeLight'. The SRMVEC CSI-SB members have been enthusiastic to project their talents. This magazine gives desired opportunity and platform to publish students' thoughts and creativity. We strongly believe that the purpose of knowledge is fulfilled only when it is transferred to another person. In this manner, this magazine would serve as a bee hive of knowledge. With technology growing leaps and bounds day by day, people need to be aware of the ongoing development in technology. We appreciate every one who stood with us in this venture.

Regards  
SRMVEC CSI-SB Team



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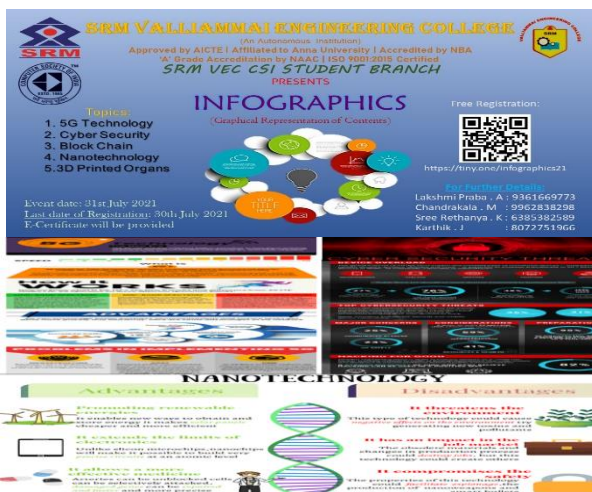
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# EVENTS

## Infographics

The SRM Valliammai Engineering College Computer Society of India Student Branch organized an event 'INFOGRAPHICS'. In this event, around 50 students participated. The event was conducted on 31st July 2021 where the participants were asked to submit their Infographics pdf through the google form which was sent to their emails on the day of the event. The result was evaluated based on originality, innovation, quality of information, and style. The winners were finalized as **Thomas. A.** from Loyola College (Arts and Science) who secured first place; **Krishnapriya. M.** from Sri Sairam Institute of Technology who obtained second place and **Hemamalini. T.** from SRM Valliammai Engineering College who secured third place. The event ended in grand success due to the guidance of CSI Student Branch Counselor Dr. M. Senthil Kumar (Associate Professor, Department of CSE), who supported in coordinating the event.



## Obsi-Recite

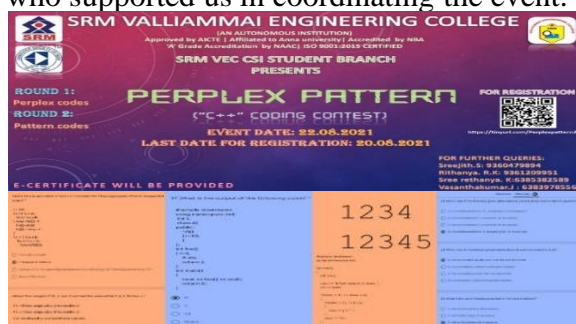
The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'OBSI-RECITE' event. More than 64 students participated in the event. The event was conducted on 8th August 2021 and had two rounds. In the first round, the participants displayed some images and were asked questions regarding the pictures. The participants who gave more correct answers were shortlisted for the second round. The participants were evaluated by screening the visual content. The participants who answered more questions were selected. The winners were **Naresh Kumar. S.** from SRM Valliammai Engineering College secured first place; **Karan. K.** from Hindustan College of Engineering and Technology, Coimbatore who obtained second place, and **Janani. J.** from Avinashilingam University Higher Educational Institute, Coimbatore who secured third place. The event ended in grand success adding another feather to the cap due to the guidance of CSI Student Branch Counsellor Dr. M. Senthil Kumar (Associate Professor, Department of CSE), who supported in coordinating the event.



# EVENTS

## Perplex Pattern

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'PERPLEX PATTERN' event. More than 90 students participated in the event. The event was conducted on 22nd August, 2021 had two rounds. In the first round, the participants answered about 25 MCQ and descriptive types based on C++ coding language. The participants who answered the maximum number of questions were shortlisted for the second round. In the second round, the participants were given a set of C++ pattern codes and the winners of the event were selected based on the maximum number of correct answers and they were also marked negative for every wrong answer. The winners were **George Thomas** from Panimalar Institute of Technology who secured first place; **Karan Kumar. R.** from SRM Valliammai Engineering College secured second place, **Karthikeyan. N.** from College of Engineering, Guindy secured third place. The whole event testified grand success due to the bioneering effort of CSI Student Branch Counsellor Dr. M.Senthil Kumar (Associate Professor, Department of CSE), who supported us in coordinating the event.



## Link-A-Blink

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'LINK-A-BLINK' event. More than 64 students participated in the event. The event was conducted on 29th August 2021 and had two rounds. In the first round, the participants were sent google forms through mails which comprised of two sections. The first section consisted of the infamous who, the second section consisted of the word search. The participants who scored more marks were selected. In the second round, we conducted connections. The winners are **Suriyapriya. S.** from Francis Xavier Engineering College, who secured first place. **Karthikeyan. N.** from College of Engineering, Guindy secured second place. **Kishore. D.** from DMI College of Engineering and **Arvind. P.** from SRM Valliammai Engineering College has secured third place. The event ended with splendid success due to the guidance of CSI Student Branch Counsellor Dr. M.Senthil Kumar (Associate Professor, Department of CSE), who constantly supported us in empowering the event.

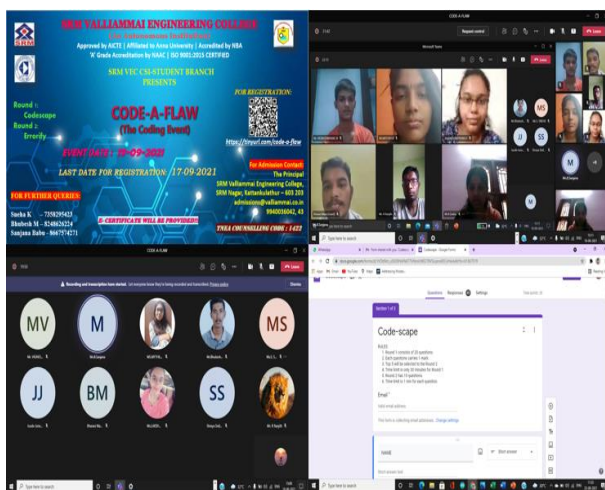




# EVENTS

## Code-A-Flaw

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'CODE-A-FLAW' event. More than 50 students participated in the event. The event was conducted on 19th September 2021 and had two rounds. In the first round, the participants were sent google forms through mails which comprised 20 questions. The participants who scored more marks were selected for the second round. In the second round, 'Errorify' was conducted. The winners were **Jude Jones. J.** from PSNA College of Engineering, who secured first place. **Ranjith. R.** from SRM Valliammai Engineering College secured second place. **Shreya Sridhar** from St.Joseph's College of Engineering secured third place. The event ended with bolder resolutions for the future to the guidance of CSI Student Branch Counsellor Dr. M.Senthil Kumar (Associate Professor, Department of CSE), who supported in coordinating the event.



## Hidden-In-A-Sight

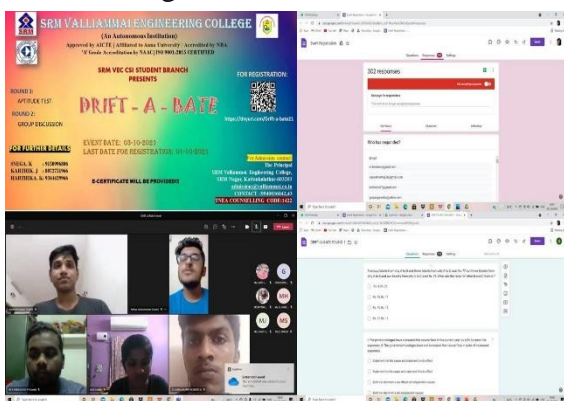
The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'HIDDEN-IN-A-SIGHT' event. More than 40 students participated in the event. The event was conducted on 26th September 2021 and had two rounds. In the first round, the participants were asked to solve the crossword given to them. The participants who scored the maximum were selected for the second round. In the second round, the participants were asked to explain the picture captured by them through MS Team. The winners were **Abinaya. S.** Coimbatore Institute of Technology, who secured first place. **Akshaya. V.** from A.V.C College of Engineering secured second place. **Swetha Dharshini. S.** from SRM Valliammai Engineering College secured third place. The event ended in with trail blazing efforts of CSI Student Branch Counsellor Dr. M.Senthil Kumar (Associate Professor, Department of CSE), who supported in coordinating the event.



# EVENTS

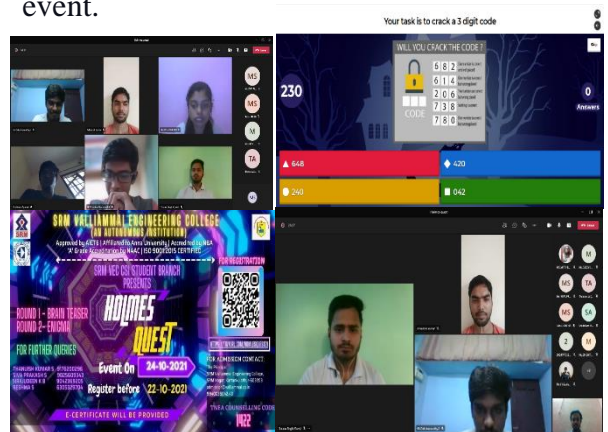
## Drift-A-Bate

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'DRIFT-A-BATE' event. In that, more than 100 students have participated. The event was conducted on 3<sup>rd</sup> October 2021 and had two rounds. In the first round, the participants are sent google forms through mails that contained 30 questions. The participants who scored more marks will be selected for the second round. In the second round, we conducted a debate. The potentials winners are **Gautham Gopan. G.** from SRM Institute of Science and Technology, Ramapuram secured first place. **Aditya Subramanian. S.** from SRM Institute of Science and Technology, Ramapuram secured second place. **Sneha. K.** from SRM Valliammai Engineering College secured third place. The event ended with brilliant success due to the guidance of CSI Student Branch Counsellor Dr . M. Senthil Kumar (Associate Professor, Department of CSE), who is the backbone of enduring support coordinating the event.



## Holmes-Quest

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'HOLMES-QUEST' event. 106 students participated in the event. The event was conducted on 24<sup>th</sup> October 2021 and had two rounds. In the first round, the participants were sent the google forms through mails which contained 30 questions. The participants who scored more marks were selected for the second round. In the second round ENIGMA, the participants were asked to solve cryptic codes and logical hacking questions. The first place was bagged by **Chrisolus Timonsingh. J.** from SRM Valliammai Engineering College. **Thomas. A.** from Loyola Arts and Science College secured second place, **Ashutosh Kumar** from SRM Institute Of Science And Technology, Ramapuram procured third place. The event ended in grand success due to the constant support and zeal of CSI Student Branch Counselor Dr. M. Senthil Kumar (Associate Professor, Department of CSE), who supported us in coordinating the event.



# EVENTS

## SQL-S-Cape

The SRM Valliammai Engineering College Computer Society of India Student Branch organized the 'SQL-S-CAPE' event. In that, more than 170 students participated. We conducted their event on 31st October 2021. In the first round, the participants were given 20 McQ's in the registration link. Shortlisted candidates were selected for the second round based on the scores. In that, they had five questions based on SQL to be solved. The winners were **Aishwarya. S.** from KCG College of Engineering securing first place; **Thomas. A.** from Loyola Arts and Science College secured second place; and **Elakkiya. M.** from SRM Valliammai Engineering College secured third place. The event ended with a vision of firm phenomenal achievement grand success due to the guidance of CSI Student Branch Counselor Dr. M. Senthil Kumar (Associate Professor, Department of CSE), who supported us in coordinating the event.

**SRM VALLIAMMAI ENGINEERING COLLEGE**  
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Approved by AICTE | Affiliated to Anna University | Accredited by NBA  
'A' Grade Accreditation by NAAC | ISO 9001:2015 CERTIFIED

**SRM VEC CSI STUDENT BRANCH PRESENTS**  
**SQL - s - Cape**

For Registration:  
QR Code  
<https://tinyurl.com/sql-s-Cape21>

EVENT DATE: 31-10-2021  
LAST DATE FOR REGISTRATION: 29-10-2021

E - CERTIFICATE WILL BE PROVIDED

For Further Details:  
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9940036042, 43  
TNEA COUNSELLING CODE:1422

How can you change "Thomas" into "Michel" in the "LastName" column in the Users table? \*

- UPDATE Users SET LastName = 'Thomas' INTO LastName = 'Michel'
- MODIFY Users SET LastName = 'Michel' WHERE LastName = 'Thomas'
- MODIFY Users SET LastName = 'Thomas' INTO LastName = 'Michel'
- UPDATE Users SET LastName = 'Michel' WHERE LastName = 'Thomas'

A CASE SQL statement is \_\_\_\_\_? \*

- A way to establish a loop in SQL.
- A way to establish an IF-THEN-ELSE in SQL.
- A way to establish a data definition in SQL.
- d. All of the above.

Which of the following options are correct regarding these three keys (Primary Key, Super Key, Candidate Key)? \*

Query all columns for all American cities in the CITY table with populations larger than 100000. The CountryCode for America is USA. The CITY table is described as follows:

CITY	
Field	Type
ID	NUMBER
NAME	VARCHAR2 (17)
COUNTRYCODE	VARCHAR2 (3)
DISTRICT	VARCHAR2 (20)
POPULATION	NUMBER

Long answer text

Find the difference between the total number of CITY entries in the table and the number of distinct CITY entries in the table, where LAT\_N is the northern latitude and LONG\_W is the western longitude. For example, if there are three records in the table with CITY values 'New York', 'New York', 'Bengaluru', there are 2 different city names: 'New York' and 'Bengaluru'. The query returns 1 because Total number of records - number of unique city names 3-2=1. The STATION table is described as follows:

# Basics Of Digital Marketing

## Introduction

Advertising through internet or digital channels like search engines, websites, social media, email, and mobile apps is known as Digital Marketing. It is the strategy by which companies promote products, services, and brands by using these online media platforms. By the way digital platforms

became progressively established .

## Types of Digital Marketing

- Search Engine Optimization,
- Social Media Marketing,
- Display Marketing,
- Pay-per-Click,
- Email Marketing.



# Basics Of Digital Marketing



Fig – 1 : Types of Digital Marketing

## 1. Search Engine Optimization

Search engine optimization (SEO) helps in the process of developing the standard, quantity, quality and level of receiving traffic to your website page from search engines. Digital Marketing strategy, SEO considers how search engines work, the algorithms that dictate search engine behaviour, what people look for, the particular terms or keywords typed into search engines, and which search engines are preferred by their targeted audience



Fig – 2 : SEO Process

## 2. Social Media Marketing

Social media marketing (SMM) can be a mode of online advertising that make use of social media websites as a marketing mechanism. The objective is to provide content that users will share with their social network to assist a company to grow brand value and widen customer reach. SMM is also done two ways: attaching social media platforms links to content and sharing buttons and adding blog posts or video. Twitter, Facebook, LinkedIn, and YouTube are the platforms where digital marketing become popular. It helps a organization induce direct feedback from customers.

## 3. Pay-per-click

Online advertising method which helps to drive traffic to websites, and when the publisher gets paid by the advertiser, when the ad is clicked is known as Pay-per-click(PPC). SEO is one of the most popular sorts of PPC. Social media have also adopted pay-per-click as one of their advertising models.

The amount advertisers pay depends on the publisher and is sometimes driven by two major factors: quality of the ad, and the maximum bid the advertiser is willing to pay per click. The upper the standard of the ad, the lower the price per click is charged and the other way around.



# Basics Of Digital Marketing

## 4. Email Marketing

Email marketing is a study marketing channel, which uses email to promote the business's products, services and brand. Email marketing helps the customers to make aware of the new product or offers by implementing it into the advertising efforts.

Email marketing game plan is commonly look for achieving these 3 primary goal is to build trust, customer's interaction and brand awareness.

### Types of email marketing

#### A.) Transactional emails

These are usually triggered supported based on a customer's action with a company. It is an chance to introduce or extend the e-mail relationship with customers or subscribers.

#### B.) Direct emails

It involves in sending an email solely to tell a promotional message. As an example, a special offer or a product catalogue.

## 5. Display Marketing

Display marketing is advertising on graphical screens on the web. The first goal of display marketing is to extend brand awareness and reach. Display marketing includes display advertisement, online advertisement, banner advertisement and internet advertisement. This advertising media uses images, videos,

animations, text links and moving images, which are delivered on various devices like desktop and smartphones.

### Advantages of digital marketing

The prime advantage of digital marketing is that a selected audience may be reached in a very high effective way. It also includes increasing brand loyalty and online sales. Worldwide outstretch – it helps us to reach global customers through website.

- **Low-priced** - a planned and targeted digital marketing campaign.
- **Accountable** - measuring your online marketing with web analytics.

### Disadvantages of digital marketing

- **Skills and training** - Right knowledge and expertise to hold out digital marketing with successfully. Tools, platforms change rapidly that you simply keep up-to-date.
- **Time consuming** - Plenty of time is consumed in developing online advertising campaigns and creating marketing contents.

**High competition** - challenge to stand out against competitors and to grab attention among the various messages aimed towards consumers online

### Online learning platform

To learn digital marketing concepts and to earn free certificates, the subsequent websites is used,



# Basics Of Digital Marketing

1. To earn the certificate you've got to get 80%. The Fundamentals of digital marketing, by Google Digital Garage. <https://learndigital.withgoogle.com/digitalgarage/course/digital-marketing>

2. To earn the certificate you've got to get 70%. Digital Skills: Digital Marketing, by FutureLearn, Accenture. <https://www.futurelearn.com/courses/digital-skills-digital-marketing>

## Conclusion

Digital Marketing is that the next generation of marketing which helps the purchasers to urge an outline of business's products, brand through internet. It also helps to push the upcoming product and to draw in people in day to day life. It also helps the business to succeed in much a bigger level. It helps to customize the view in keeping with the customer's perception. Those who are owning the business should equally contribute within the digital marketing also.

## References

- [https://en.wikipedia.org/wiki/Digital\\_marketing](https://en.wikipedia.org/wiki/Digital_marketing)
- [https://en.wikipedia.org/wiki/Online\\_advertising](https://en.wikipedia.org/wiki/Online_advertising)
- [https://en.wikipedia.org/wiki/Email\\_marketing#Types](https://en.wikipedia.org/wiki/Email_marketing#Types)
- <https://whatis.techtarget.com/definition/social-media-marketing-SMM>
- [https://en.ryte.com/wiki/Display\\_Marketing](https://en.ryte.com/wiki/Display_Marketing)



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# Machine Learning And Its Importance

## Introduction

You guys would have thought the Machine Learning is a new topic, that's actually no the concept of machine learning came into existence in 1950, Alan Turing created 'Turning Test' to check whether computer have a real

intelligence it has been argued 25-30 years ago have seen the biggest leaps and boundaries in the advanced speech technology. The main objective to teach basic algorithm to machine to complete tasks and to classify like a human data back serval. When the first model were invented that the more information is fed, so it becomes more



# Machine Learning And Its Importance

accurate, in the past few decades they had seen a large amount of information allowing for more exact predictions in the history of machine learning.

Machine learning can also be defined as

*"it is the field of computer science which makes the machine capable of learning on its own without being explicitly program."*

## History of Machine Learning

- i. In 1950 When Alan Turing - was the one who published about Machine Learning and also answered the question "**can machines think?**"
- ii. In 1957, Frank Rosenblatt – was the one who designed the neural network for computers, which is widely known as **the perceptron model**.
- iii. In 1959, Bernard Widrow - was the one who created two neural networks for computers which called **Adeline**, this is used in detecting binary patterns and Madeline and they could also reduce echo on phone lines.
- iv. In 1967- the nearest neighbor algorithm has been written which helps to allow the computer to use very basic pattern recognition.
- v. In 1981, Gerald DeJone – he was the one who introduced the concept of explanation of based- learning based
  - i. Computer analyses data and also creates a rule to eliminate the unimportant information.

## How do machine learning algorithm work

Machine learning is used in many fields and has many techniques to handle huge amount of complex data to make correct decisions. These algorithms are used to complete the task from data with the given inputs that is given to the machine. So, it is very important to know about the work of these algorithms and it is also important to know about the whole work process of machine learning which will be used in future.

Firstly they will give training to the machine learning algorithm by using a training data set to create a model and then they will a new input data that is introduced to ML algorithm so it helps making predictions. The predictions and the results will be calculated in accuracy. If the prediction is not satisfied they will train again and again until the expected output is obtained. This one helps the ml algorithm to learn on its own and produce a best answer which will slowly increase the accuracy over the time. Let me show you a simple example how does machine learning work for easy and better understanding.



# Machine Learning And Its Importance

For example, you are searching a lion picture in Google, let's see how machine learning works in Google:

- Firstly Google gets a huge amount of photos of lion.
- Now, the machine learning algorithm search for the pattern of the pixels of the photo and the color pattern of the photo which helps in the prediction of the picture of lion.
- First the Google make a gradual guess on which picture have a good pattern in order to easily identify the lion's photo.
- If it made a mistake, there will be set of adjustments which are made for the order of the algorithm to make it right.
- At the end, there will be a collections of patterns which is learned by computer system which is trained and modeled by human brain, once they trained correctly they will able to give the accurate photos of lion in Google search.

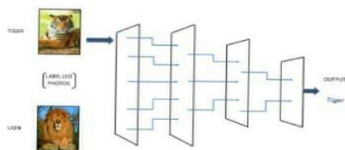


Fig – 1 : Working of Machine Learning

As I explained above the first will be collecting the huge amount of photos with lions or tiger. Then the computer will be trained to select the correct patterns on the photos in order to correctly identify the lion or tiger.

Once the ml model is trained well, we can give different pictures to check whether it can able to identify the picture of lion and tiger separately. This how a machine learning algorithm works.

## Types of machine learning

- Supervised machine learning
- Unsupervised machine learning
- Reinforcement machine learning

## Supervised machine learning

Supervised machine learning in which they used to train the machines using well labelled data, meaning of labelled means in which they already inserted some input data with correct output. Here the training will be like they will provide some training data to the machines which act as supervisor and teach the machine to predict the output coorrectly. The main goal of supervised machine is to find a mapping function to the map the input(x) and output (y)





# Machine Learning And Its Importance

## Unsupervised machine learning

In unsupervised learning the machine will be self-sufficient to learn by itself. The learning will be like they give some unknown or unlabelled data to the machine and see whether it gives a correct output. The model tries to find the pattern and relations in it by creating clusters in it here, the unsupervised learning could not able to add labels in the clusters. For example, they don't know to say this is group which contains mangoes and oranges, but they able to separate it.

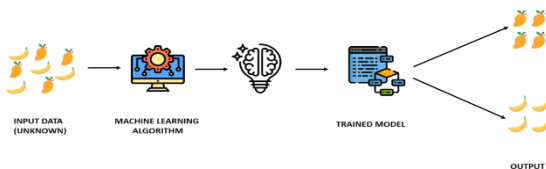


Fig - 2 : Unsupervised machine learning

## Reinforcement machine learning

Here, the machine is trained by hit and trail method. The working of learning will be like when the model gives a output based on the output the model will correct themselves if it gives a wrong output. Like, this model continues to learn by themselves

## Applications of machine learning

There are three main applications that are used in day-to-day life they are:

- Virtual personal assistant
- Facial recognition
- Email spam filter

### Face recognition

Now a day there is no smartphones without face recognition.so, all must would have known about this. The face recognition is used to unlock your mobile while you look at it. It unlocks the by some unique marks (like eyes) or projections on your face using image processing it is also a part of machine learning in order to identify the identify the correct person to unlock the phone. The entire process is very complicated one but . it seems to be simple application of machine learning algorithm.

### Email spam filter

All of us definitely have an email account, does anyone know how the spam mails are identified which you receive..? Again here ml algorithm is used. The spam is filtered by using supervised model is used to sort out the spam mails.



# Machine Learning And Its Importance

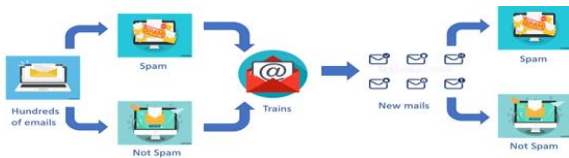


Fig – 3 : Email span filter

## Virtual personal assistant

As all of us know Google assistants like siri, alexa, Google are the best examples for virtual personal assistants. They help us to find information when you have been asked in voice. It is an integral part of functioning which is used to collect and refine the information based on your past queries. After this process happened they used gives the refined dataset is used to give the results for your queries.

## Conclusion

Machine learning is automation if everything and it lesser the workload and time. It is very good at handling any type if data and it is best for doing online shopping. Now and in future we can see machine learning everywhere mainly it is used in fingerprint, face detection in smartphones, laptops and computer and in future it will majorly developed in the field of security systems, ect... so, it is good have a knowledge to know about ,machine learning

## Reference links

1. <https://blog.verzeo.com/blog-what-is-machine-learning/>
2. <https://www.interactions.com/blog/technology/machine-learning-important/>
3. <https://www.javatpoint.com/supervised-machine->



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# Green Computing

## Abstract

Green Computing is just same as of Green Chemistry where reducing the use of chemicals, harmful materials, and increase the use of energy effectiveness and so on. This is an useful and environmental friendly method that is initiated with the selection of materials and designing, and manufacturing and the usage and till the disposal of that material. This can be recycled and then reused. We can ask that this will eradicate the causes happened by the computing devices these days. This does not eradicate but controls to some limit that we can reuse, recycle and reduce the consumption of the computing devices.

## Introduction

All over the world, each and everyone has their own computing devices. Nowadays, even a 10-years old kid has a computing device. So, In our world there is a large amount of computing devices produced and they consumes a large amount of MW. It is very difficult to design the energy-efficient monitors, tabs, laptops, and servers. CS engineers should model, design and produce green computers, and other computing devices. The IT industry produces a new era for the computing devices every year. In this technology, our main and important task is to create a eco-friendly methods by using 3-R's i.e., Recycle, Reuse, and Reduce. This may become an research or developing topic by just reducing the harmful contents. Now, lets discuss more about this technology .

## Green computing

Green Computing Concept was launched by the Energy Star program in the year 1992 with the help of the Environmental Protection Agency(EPA). Green computing is environmentally accountable for the study and practice of using computing resources efficiently. This program mainly accounts for People, Plants, Profit (“triple bottom line”). The ultimate goal is to reduce the use of hazardous materials and increase the energy needs during the lifetime of the products and it encourages the recyclability/biodegradability of digital devices. More IT companies have changed themselves to Green IT for reducing the effects of Computing devices and also just to increase their performance.

**To address the environmental effect of computing these four path approaches should be addressed**

## Green use

To decrease the energy usage of computers, peripheral devices, and other information systems as well as using them in an eco-friendly manner.

## Green disposal

Reusable Existing equipment or reusing old computers and recycling unwanted electronic equipment.

## Green Design

To design energy-efficiency



# Green Computing

computers, environmentally sound components, servers, printers, cooling equipment, projectors, and other digital devices.

## Green Manufacturing

To decrease the waste during the production of electronic components, computers and other associated subsystem to reduce the effects or non-effects on the environment.



Fig – 1 : Green Computing

## Green Computing Contribution To The Environment

Computing has also been published to share its contribution to saving the environment under the concept of “Green Computing”.

It involves minimizing the Environmental impact of technology. That means using less amount of energy consumption, reducing digital wastes, and encouraging sustainability. Its goals are to minimize the carbon footprint created by the IT and Systems business and industries. E-waste and Energy-efficiency are the two major

methods involved in green computing. E-waste to dispose of electronic waste. The efficiency of Energy includes implementation of energy-efficient of Central Processing Units, servers, and peripherals as well as slow down energy or resource usage.

**"There is a difference in the world and that is between what computers will do and what society will choose to do with computers."**



Fig – 2 : Green Computing Eco-Friendly

This Green Computing reduces the problems such as pollution, production of e-wastes, increasing greenhouse gases. This plays a major role in protecting the environment by producing less carbon emission computing devices and also those devices can be reused. Those carbon emissions are done because of the hardware in the computing devices.

## Green computing – growth drivers

The report of the Environmental Protection Agency (EPA) said that the most small business can reduce their energy usage by 30%. This can be done by simply employing more green computing and energy-efficient execution. When you sum



# Green Computing

the level of savings that comes from the extend the usage of the time frame of tech components. It's about some significant greenbacks.

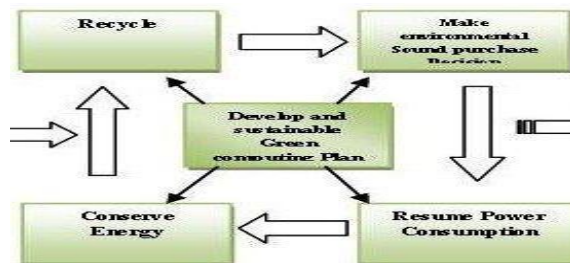


Fig – 3 : Sustainability Of Green Computing

In Green computing, the sustainability makes the recycle, Environmental friendly, Conservation of energy and the consumption of power is compulsory.

This in simple means uses less amount of energy, decreases the wastes, and promotes sustainability. This method aims in the reduction of the carbon generated by the IT related industries.

The main reason for the use of Green IT is that it increases the Life-time of the

- Retransformation of safety and health issues related to technology.
- Technology counts fully impressive and expands with digital readiness.
- Maintain the climatic-changes in accordance with the carbon by neutralizing it.

## Types of green computing

### Solar power system

Here, the sunlight's energy is utilized and produces the solar energy for both commercial and person use. This technology is mostly used in the countries

like Canada, California and Spain and this leads to it's first success. Photovoltaic solar panels are the best example as it can easily convert electricity to electrical energy.

### Wind turbine program

The another most important type of green IT is Wind Turbine System. This is important because it helps to produce electricity by anyone. This has no effect on the environment. It also reduces the emission of carbon-di-oxide but it requires a lot of money to set up.

### Geothermal power

This is an important type of green technology and with the help of this electricity can be produced. This is also eco-friendly method.

### Importance to green it

Due to large use of the natural resources, the environment is badly affected and when people realized it they decided to protect the environment on their own. When the usage of computers have become efficient and uncontrollable the production of it also increased. Thus, those cannot be recycled and they have become as a E-waste or electrical waste materials. This created a major threat to the environment. So, indeed to stop this Green computing has become the consideration in the environment to keep it safe and clean. When the Green IT computing devices are made they can be recycled, reused, and reduce the emissions. To get rid of the old computing devices land fill method is recommended. Due to this E-wastes which contains the toxic substances such as mercury, uranium and so on, those substances produce the radiations that get mixed with air and causes air pollution and because of this many air-borne diseases are developed.



# Green Computing

## Benefits of green computing

- ✓ Decrease the consumption of energy that results in the low carbon-di-oxide emission.
- ✓ We can save money that we spent in the energy and some other resources.
- ✓ This helps in encouragement of recycling of the computing devices.
- ✓ Removes the risk in the existing computing devices that leads to cancer or some other diseases.
- ✓ Use some preservative resources that uses the less energy to produce and dispose the product.
- ✓ Reduces the emissions of carbon content and also reduces the waste production.
- ✓ Water conservation is also done

## Future implementation

Now, the researchers only focuses on the data centre space, power and the cooling systems. This is not only used for IT components but also for IT component vendors. The future implementation on this should be the combination of concern, creation, usage and disposal that the overall life of the IT has the minimal impact on the environment.

## Conclusion

At last, in simple method Green Computing is not like space science and it does not need a huge amount of money for the initial investment. The major step for the green computing is to take a little effort, because low energy usage and that changes into immediate savings.

## References

1. <https://www.techopedia.com/definition/14753/green-computing>
2. <https://digitalthinkerhelp.com/what-is-green-computing>
3. <https://www.lancaster.ac.uk/data-science-of-the-natural-environment/blogs/green-computing-a-contribution-to-save-the-environment>
4. <https://www.geeksforgeeks.org/future-of-green-computing/>
5. <https://datascience.foundation/datatalk/green-computing-the-future-of-computing>



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# Quantum Cryptography

## Abstract

Modern cryptography algorithms work on the fundamental process of factoring large integers into their primes, which are one-way functions. But modern cryptography is vulnerable to both technological development of computational power and evolution in mathematics to quickly reverse one-way functions such as that of factoring large integers. So introducing quantum physics into cryptography can lead to better security and enhancement. Quantum cryptography is one of the emerging topics in the field of cryptography. This paper explains what quantum cryptography is and how this technology provides better encryption when compared to modern cryptography algorithms. We will also see about the QKD (Quantum Key Distribution) protocol briefly.

## Introduction

In quantum cryptography, we make use of the quantum mechanical properties to perform cryptographic tasks. It works in the two beliefs of quantum technicalities:

1. Heisenberg uncertainty principle
2. principle of photon polarization.

The Heisenberg uncertainty principle states that the velocity and exact position of a quantum particle can't be measured at the same time.

Polarization defines the direction that its electric and magnetic fields are in. You can either measure the vertical-versus-horizontal polarization or the diagonal-versus-other-diagonal polarization. Rectilinear and diagonal polarization are complementary properties, which means if we measure one perfectly then we'll lose all information about the other.



Fig – 1 : Polarization mode

## How Quantum Computers Can Break Encryption

The behaviour of quantum computers is strange to understand, we must have a deep knowledge of quantum mechanics and linear algebra to figure out how things differ from classical computers but we'll see how it works basically,

The basis of quantum computation is quantum superposition. Quantum computers basically work with a qubit also known as quantum bit which means that they can exist not only in 0 and 1 but also a superposition of both states (so that each has an amplitude associated with



# Quantum Cryptography

it). When the quantum system is observed by someone, the state of qubit collapses into any one of the two states (this is related to the Schrödinger's cat experiment)

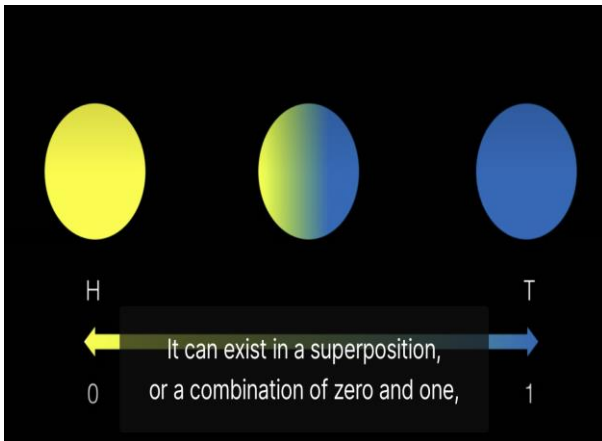


Fig – 2 : Schrödinger's cat experiment

Due to quantum superposition, a register of  $n$  qubits has  $2^n$  basis states which means that it can exist in a superposition of all these states at the same time. Due to this we can apply computation to all  $2^n$  register states. This phenomenon is called quantum parallelism.

This property of quantum computers makes them more efficient than classical computers it is believed that quantum computers can break certain encryption algorithms using this high computational power say for an example it can break the RSA algorithm which depends on finding the prime factors of large prime numbers.

The algorithm which makes this possible is called Shor's algorithm which can factor large prime numbers with polynomial time complexity.

## Quantum Key Distribution

Quantum Key Distribution enables two individuals to create a shared secret key known only to them which can be later used to encrypt and decrypt messages or information.

A quantum key distribution protocol called BB84 was developed in 1984.

The BB84 protocol proceeds through the following steps:

1. Sender sends photons to the receiver by passing it through a rectilinear or diagonal filter randomly.
2. The receiver then checks for the direction of the photons by randomly selecting a filter (rectilinear/diagonal) and saves the results, though the measurement may not be the same for both.
3. Through a public channel the receiver informs the sender his basis of measurement.
4. The sender compares that information with the sequence of filters used to send the key.
5. The photons that were read using the wrong filter are ignored, and the remaining sequence of bits becomes the key.

Example where sender (Alice) and receiver (Bob) create a key by implementing quantum cryptography:





# Quantum Cryptography

Quantum transmission & detection	ALICE sends photons								
	ALICE's random bits	0	1	0	1	1	1	0	1
	BOB's detection events								
	BOB's detected bit values	1	1	0	1	1	1	0	0
Public discussion (i.e., sifting)	BOB tells ALICE the basis choices he made								
	ALICE tells BOB which bits to keep		✓		✓		✓	✓	
	ALICE and BOB's shared sifted key	-	1	-	1	-	1	0	-

Fig – 3 : Quantum Key Distribution

If an eavesdropper tries to intercept Alice and Bob in this case he has to pass the photon through a filter like Bob, If the eavesdropper picks the right one, the photon state is unchanged, otherwise it will project the photon onto a random state, meaning both Alice and Bob will not get the same answer even though they used same filters. In this way Alice and Bob can detect that there was someone intercepting them. Once they have confirmed that there was no one intercepting they can discard the mismatching ones and the remaining matched sequence becomes their key.

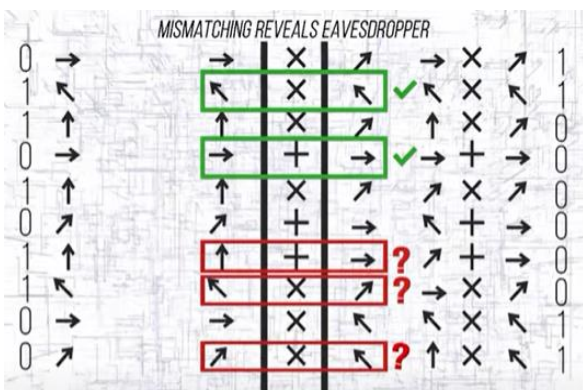


Fig - 4 : Mismatching reveals eavesdropper

This was only possible due to the quantum nature since reading the state of a quantum particle destroys it, so when an eavesdropper tries to read or copy the data it will lead to its destruction and the sender and receiver might be able to know that there was someone between them.

## Advantages Of Quantum Cryptography

1. It provides secure communication by implementing fundamental laws of physics instead of mathematical algorithms.
2. It is almost unhackable.
3. We can detect eavesdropping in QKD (Quantum Key Distribution) making it impossible to copy the data encoded in quantum state.
4. It is simple to use.
5. Less resources are needed to maintain it.

## Disadvantages Of Quantum Cryptography

1. It requires dedicated hardware and communication lines.
2. It is expensive as of now.
3. As of today, it works only at limited distances and only with (direct) optical fibers.
4. There is a chance that the polarization might change when travelling through optical fibers.



# Quantum Cryptography

## Conclusion

Quantum cryptography will become a need because classical computers will be replaced by quantum computers in the future and modern cryptographic algorithms can be easily cracked by quantum computers to overcome this crisis quantum cryptography will be used.

## References

1. [https://www.researchgate.net/publication/345675328\\_Quantum\\_Cryptography](https://www.researchgate.net/publication/345675328_Quantum_Cryptography)
2. [https://en.wikipedia.org/wiki/Quantum\\_cryptography](https://en.wikipedia.org/wiki/Quantum_cryptography)
3. <https://www.geeksforgeeks.org/classical-cryptography-and-quantum-cryptography/>
4. <https://crypto.stackexchange.com/questions/51311/what-makes-quantum-cryptography-secure>
5. <https://quantumxc.com/blog/quantum-cryptography-explained>
6. <https://www.idquantique.com/quantum-safe-security/overview/quantum-key-distribution/>
7. [https://www.youtube.com/watch?v=uiaAJ3c6dM&ab\\_channel=UpandAtom](https://www.youtube.com/watch?v=uiaAJ3c6dM&ab_channel=UpandAtom)
8. [https://www.youtube.com/watch?v=pi7YwxxZQ5A&list=RDQMB7sJWHcg4oA&start\\_radio=1&ab\\_channel=BSSpaceTime](https://www.youtube.com/watch?v=pi7YwxxZQ5A&list=RDQMB7sJWHcg4oA&start_radio=1&ab_channel=BSSpaceTime)

9. <https://stackoverflow.com/questions/2768807/quantum-computing-and-encryption-breaking>
10. <https://www.hindawi.com/journals/scn/2018/8214619/>
11. [https://en.wikipedia.org/wiki/Quantum\\_cryptography#:~:text=The%20advantage%20of%20quantum%20cryptography,encoded%20in%20a%20quantum%20state.](https://en.wikipedia.org/wiki/Quantum_cryptography#:~:text=The%20advantage%20of%20quantum%20cryptography,encoded%20in%20a%20quantum%20state.)
12. <https://www.digicert.com/blog/the-impact-of-quantum-computing>



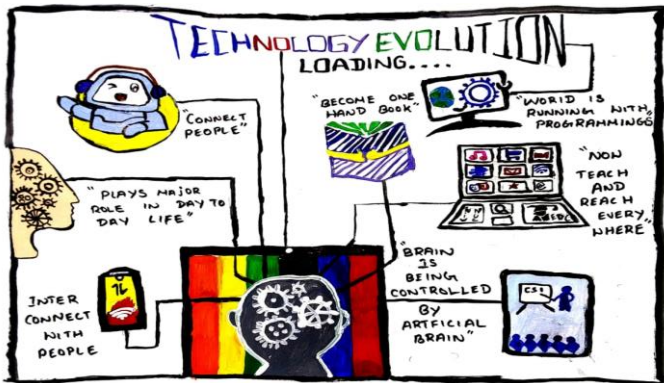
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# Technology Evolution



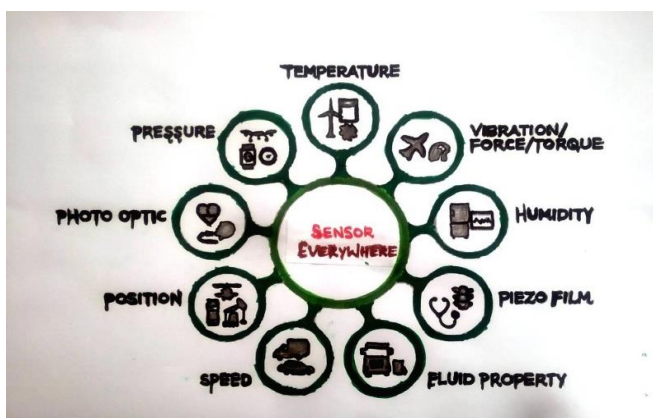
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# Sensor Everywhere



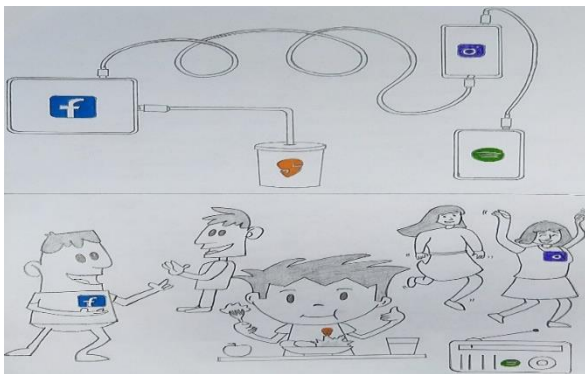
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# Internet of Things in Health Care



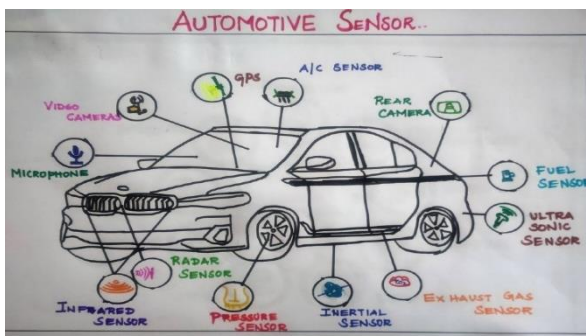
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# Will Social Media Replace Human Activities



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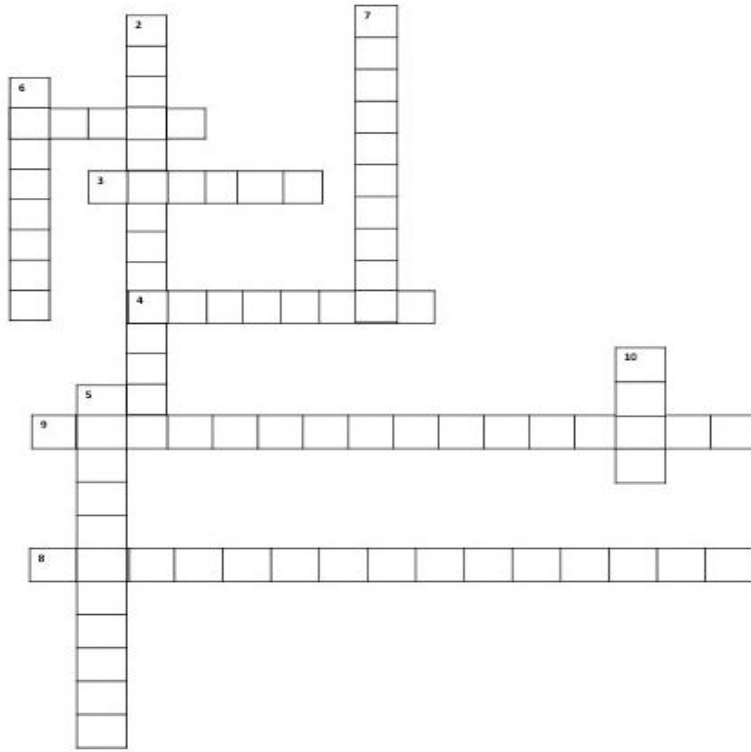
# Automotive Sensor



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# Word Fun



\* Answer will be revealed in the next issue.

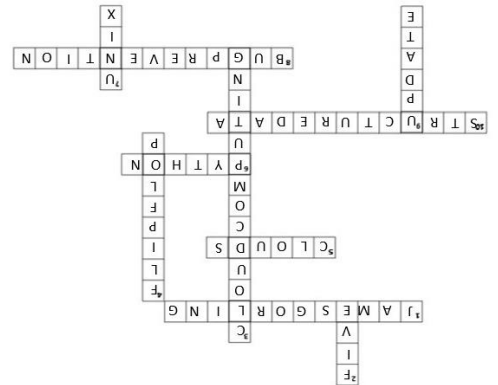
### Questions :

#### Up to Down :

- 2. Runtime method to invoke
- 5. Automatic reasoning tool
- 6. Hadoop cluster
- 7. Qubit stands for
- 10. Combine record from one or more table

#### Left to Right :

- 1. Format of data stored in hash
- 3. Cleanroom philosophy
- 4. Universal gate is
- 8. Bitcoin developed by
- 9. Type of content marketing



**Answer for previous issue**



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