



Department of Computer Engineering

Government Polytechnic for Girls, Surat

JAN – 2022 Vol - 20

TechTrends

E-Newsletter



Vision:

To empower girls of diploma computer engineering to excel in IT Industries and serve the society.

Mission:

- To strive for academic excellence and professional competence among students and staff.
- To encourage innovative ideas among students to enhance their entrepreneurship skills.
- To provide high tech educational resources and supportive infrastructure.

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pggdcenewsletter@gmail.com

INTRODUCTION

The metaverse is a hypothesized iteration of the Internet, supporting persistent online 3-D virtual environments through conventional personal computing, as well as virtual and augmented reality headsets.

Metaverse is the complete replication of our real world into a Digital 3d world that is connected to the internet. It can push all the physical barriers and disabilities to achieve many things in both ways. Imagine that you put on some VR headset and do everything that you will be working, partying, playing, etc.

Zuckerberg has described it as a “virtual environment” we can go inside of — instead of just looking at on a screen. It is a world of endless, interconnected virtual communities where people can meet, work and play, using virtual reality headsets, augmented reality glasses, smartphone apps or other devices.



Microsoft Teams will get new 3D avatars in a push toward a metaverse environment, and you won't need to put a VR headset on to use them. Microsoft will use AI to listen to your voice and then animate your avatar. If you switch to a more immersive 3D meeting, then these animations will also include raising your avatar's hands when you hit the raise hand option or animate emoji around your avatar.



Mrs. Pratiksha D. Chaudhari
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IMPLEMENTATIONS

Video games:

Several components of metaverse technologies have already been developed within modern internet-enabled video games. The 2003 virtual world platform second life is often described as the first metaverse, as it incorporated many aspects of social media into 3D world with the user represented as an avatar (user's graphical representation).

Virtual reality:

Metaverse development has often focused on bettering virtual reality technologies due to benefits in establishing immersion in virtual environments. In 2019, the social network company facebook launched a social VR world called

Facebook Horizon. In 2021 facebook was renamed “ Meta Platforms” and made a commitment to develop a metaverse.

POSSIBLE APPLICATIONS

New Private Organizations: Fully private organizations can be created within metaverse and all operations are handled within metaverse.

Shopping: 3D virtual store can be created where you visit and order some products to actually get it delivered at your physical address.

Extended Social Life: People can meet as if they are meeting in person without travelling far distances.

Work from Anywhere: you can work from anywhere in the metaverse if your profession suits digital technology. If not digital technology, don't worry, you will have the technological advancements evolved so that you can work in metaverse which impacts the physical world

REFERENCES

1. <https://medium.com/@selva221724/how-your-life-will-be-in-metaverse-ebb47525b39c>
2. <https://en.wikipedia.org/wiki/Metaverse>
3. <https://about.facebook.com/meta>
4. <https://www.theverge.com/2021/11/2/22758974/microsoft-teams-metaverse-mesh-3d-avatars-meetings-features>

INTRODUCTION

Artificial refers to something that is simulated or made by humans, not by nature.

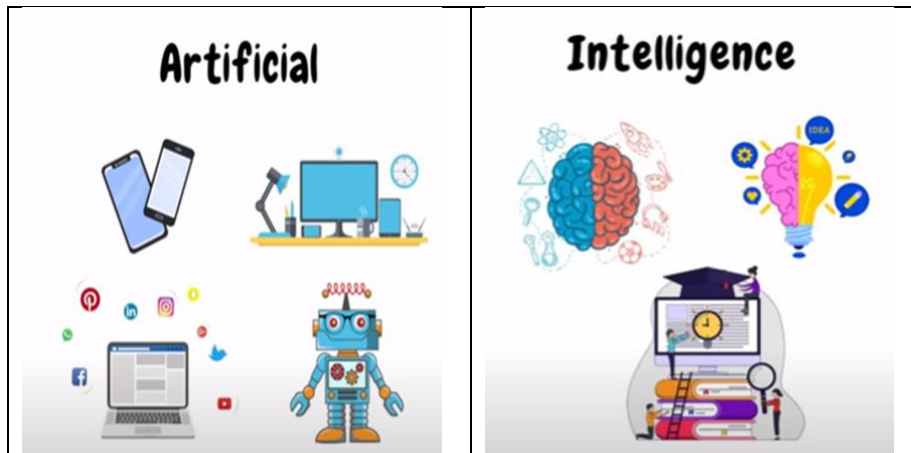
E.g. flowers and plants which are made of plastic.

Intelligence is the ability to understand, think, learn and act according to a situation with changing environment.

-It is a process of applying knowledge.

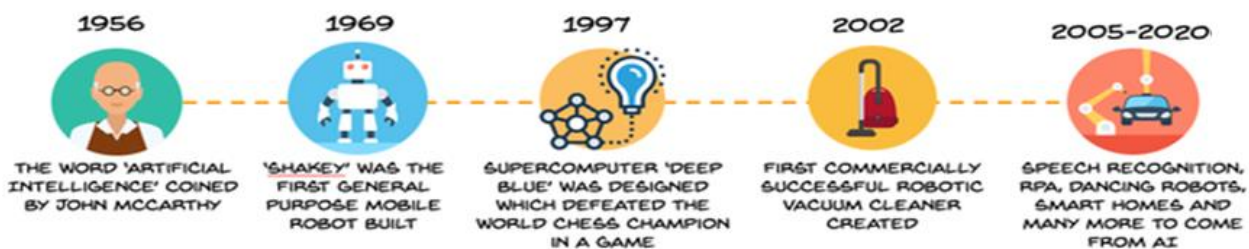


Miss Mona M. Umaria
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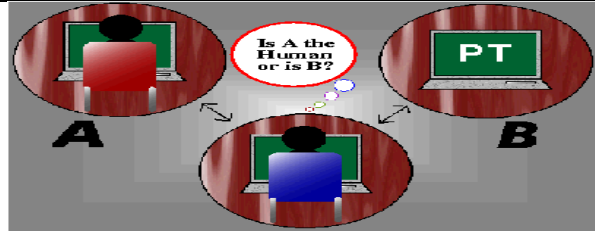
HISTORY

- John McCarthy coined the term "artificial intelligence" in 1956
- "Predicting the future isn't magic, it's artificial intelligence." – Dave Waters
- Alan Turing, created a test to check the ability of a machine to think like a human. After multiple setbacks and successes, today we have reached a stage where technologies are converging and data is proliferating (increase in number).



Turing test: is made to check intelligence of machine?

Computer and human both interrogated by judge
- Computer passes test if judge can't tell the difference

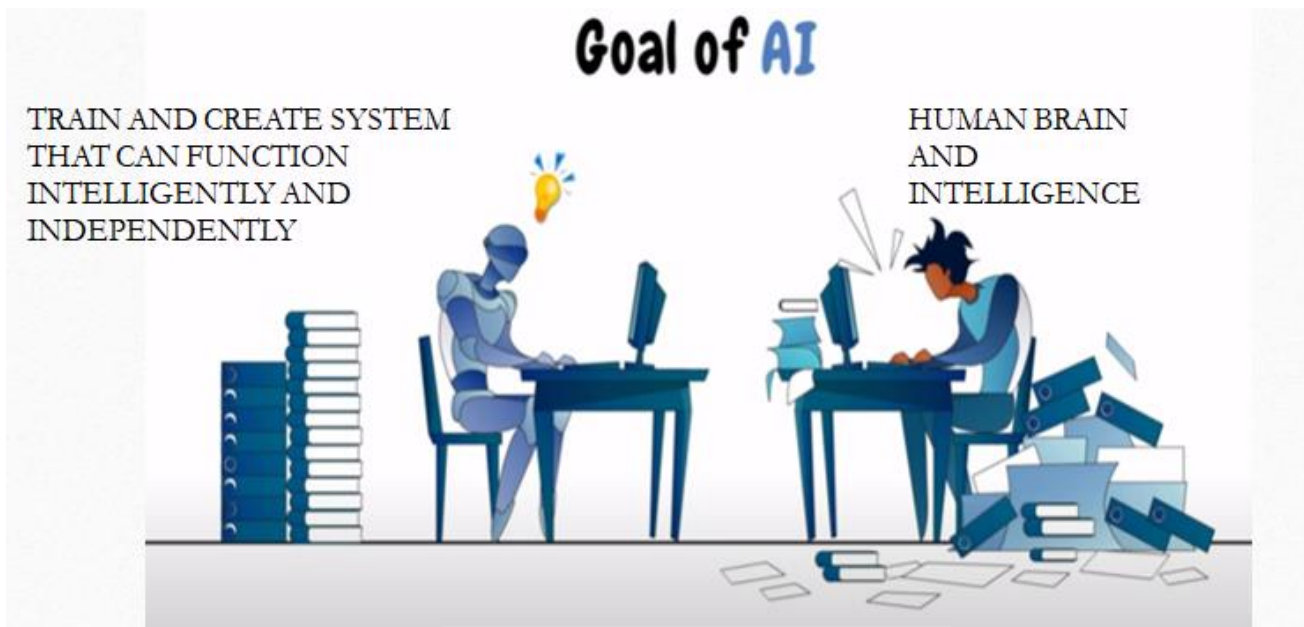


NEED OF AI:

- Artificial Intelligence is used everywhere in today world
- We are growing at huge rate; say it in terms of population, scripted knowledge, tasks etc.
- Requirement is also increasing so in order to fulfill requirements, on demanding huge number of tasks to be automated and centralized.

WHAT IS AI?

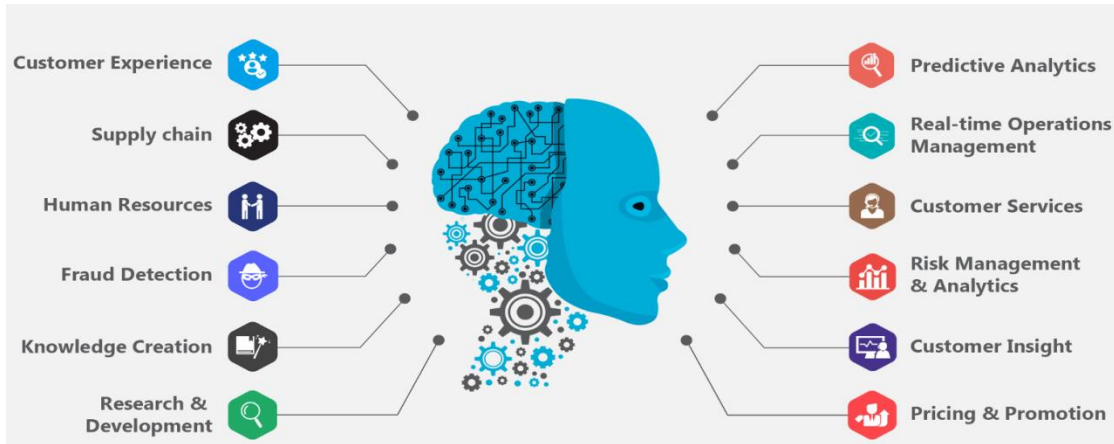
- AI is implementing human senses in machines.
- “Science and Engineering of making intelligent machine”.
- **Artificial Intelligence** is basically related to broad area of computer science that makes machine seems like they have human intelligence, the goal of AI is to mimic the human
- **Artificial intelligence (AI)** makes it possible for machines to learn from experience, adjust to new inputs and perform human-like tasks. Most AI examples that you hear about today – from chess-playing computers to self-driving cars



AI BASED APPLICATION USING MOBILE APP?

1. **Snap chat:** facial tracking algorithm to find your face in your snaps and add things like glasses, hats and doggy ears.
2. **Leaf Snap:** species of a tree from a photo of a leaf.
3. **Dango:** Real problems in life, like finding the perfect emoji.
4. **Swiftkey Neural:** look at the last few words you typed and take a guess at what the next word will be

APPLICATION OF AI:



PRONS /CONS OF AI:



REFERENCES

1. <https://www.youtube.com/watch?v=UFDOY1wOOz0>
2. <https://www.youtube.com/watch?v=2ePf9rue1Ao>
3. https://www.sas.com/en_us/insights/analytics/what-is-artificial-intelligence.html
4. <https://www.nber.org/papers/w24449.pdf>
5. https://en.wikipedia.org/wiki/Artificial_intelligence

5G Wireless Technology

In telecommunications, 5G is the fifth generation technology standard for broadband cellular networks, which cellular phone companies began deploying worldwide in 2019, and is the planned successor to the 4G networks which provide connectivity to most current cellphones. 5G networks are predicted to have more than 1.7 billion subscribers worldwide by 2025, according to the GSM Association. Like its predecessors, 5G networks are cellular networks, in which the service area is divided into small geographical areas called cells. All 5G wireless devices in a cell are connected to the Internet and telephone network by radio waves through a local antenna in the cell.



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OVERVIEW

5G networks are cellular networks, for which the service area is divided into small geographical cells. The 5G wireless devices in a cell communicate channels assigned by the base station and remote radio heads (antennas). The connected through the 5G Core to network and routers for Internet fiber or wireless backhaul connections. device moving from one cell to another is to the current cell. 5G can support up to a million devices per square kilometer, while 4G supports only one-tenth of that capacity.

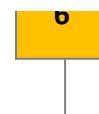


over RF in the cell, over frequency Each cell comprises of a base station base stations, termed as gNBs, are switching centers in the telephone access by high-bandwidth optical As in other cell networks, a mobile automatically handed off seamlessly

APPLICATION AREA

The ITU-R has defined three main application areas for the enhanced capabilities of 5G. They are Enhanced Mobile Broadband (eMBB), Ultra Reliable Low Latency Communications (URLLC), and Massive Machine Type Communications (mMTC). Only eMBB is deployed in 2020; URLLC and mMTC are several years away in most locations.

Enhanced Mobile Broadband (eMBB) uses 5G as a progression from 4G LTE mobile broadband services, with faster connections, higher throughput, and more capacity. This will benefit areas of higher traffic such as stadiums, cities, and concert venues.



SPEED

5G speeds will range from ~50 Mbps to over 1 Gbps. The fastest 5G speeds would be in the mmWave bands and can reach 4 Gb/s with carrier aggregation and MIMO.

Sub-6 GHz 5G (mid-band 5G), by far the most common, will usually deliver between 100 and 4400 Mbps but will have a much further reach than mmWave, especially outdoors. C-Band (n77/n78) is expected to be deployed by various operators by the end 2021.

The Low-band spectrum offers the greatest range, thereby a greater coverage area for a given site, but its speeds are lower than the mid and high bands.

HOLOGRAPHIC TECHNOLOGY

Holography is a photographic technique that records the light scattered from an object, and then presents it as three-dimensional. ... They recorded on silver halide photographic emulsions at the time, but the clarity of the objects was far from perfect. But new methods have improved holograms over time.

What Can We Expect from Hologram Technology in the Future?

As technology continues to progress, we are given the opportunity to explore new and more exotic types of programming, software, hardware, and systems. One innovation that is growing at a rapid pace is hologram technology.



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ARE HOLOGRAMS FOR REAL?

Holograms are as close as your wallet. Most driver's licenses include holograms, as well as ID cards and credit cards. Holograms can even be found throughout our houses. Holograms come as part of CD, DVD, Blu-Ray, and software packaging, as well as nearly everything sold as "official merchandise."

But, these security holograms — which discourage forgery — aren't impressive. They simply change shape and color when tilted.



However, large-scale holograms, the kind illuminated with lasers or created in a dark room with carefully placed lighting, are phenomenal. They're basically two-dimensional surfaces that show very accurate three-dimensional images of real objects. You don't even have to wear special glasses like when you go to a 3D movie.

Holograms have surprising features. For example, each half contains whole views of the entire holographic image. The same is true if you cut out a small piece. Even a small fragment will still house the entire picture.

Understanding the principles behind holograms, helps you understand that the hologram, your brain, and light waves work together to make clear, 3D pictures.

HOLOGRAMS IN THE FUTURE

The general public is fascinated by holograms. However, holograms are major business. It is suggested that by 2020 the market for genuine, display holograms will be worth \$5.5 billion. Here are some of the incredible ways holograms are currently used.

Military Mapping:

Geographic intelligence is critical to military strategy. Fully dimensional holographic images are being used for improved reconnaissance. These 3D holographic maps of “battle-spaces” allow soldiers to view three- and train for missions.

Information Storage:

Society generates incalculable amounts of data every day. Digital storage capacity increases every year. Our personal computers store hundreds of gigabytes of information, including family photos, videos and documents. Now think about a storage disc being corrupted. The losses are unimaginable.

Medical:

Holography is on its way to revolutionizing medicine. It can be a tool for visualizing patient data in training students and surgeons.

Fraud and Security:

Because Holograms are complex and hard to make, this makes them an incredible advantage in commercial security.

Art:

Artists began experimenting with holography the moment it became a practical process. There are artists around the globe using the three-dimensional of holograms to bend and cut space, combine collections of still images or video to produce animated 3D works, and to sculpt pure light.



CONCLUSION

Holograms used to be the stuff of science fiction that was “coming to a theater near you”. However, the practical uses of holographic technology have eclipsed the film industry and become a commonplace feature in our everyday lives. We are only seeing the beginning of the usefulness of holograms and as the innovators and developers continue to improve the technology, holograms will become an even larger part of society.

Events of the Month:

PROJECT & SSIP GUIDANCE SEMINAR REPORT
DATE: 14/06/2021 TIME: 3:10 PM TO 4:30 PM

GOVERNMENT POLYTECHNIC FOR GIRLS SURAT
DEPARTMENT OF COMPUTER ENGINEERING

PARENT TEACHER VIRTUAL MEET

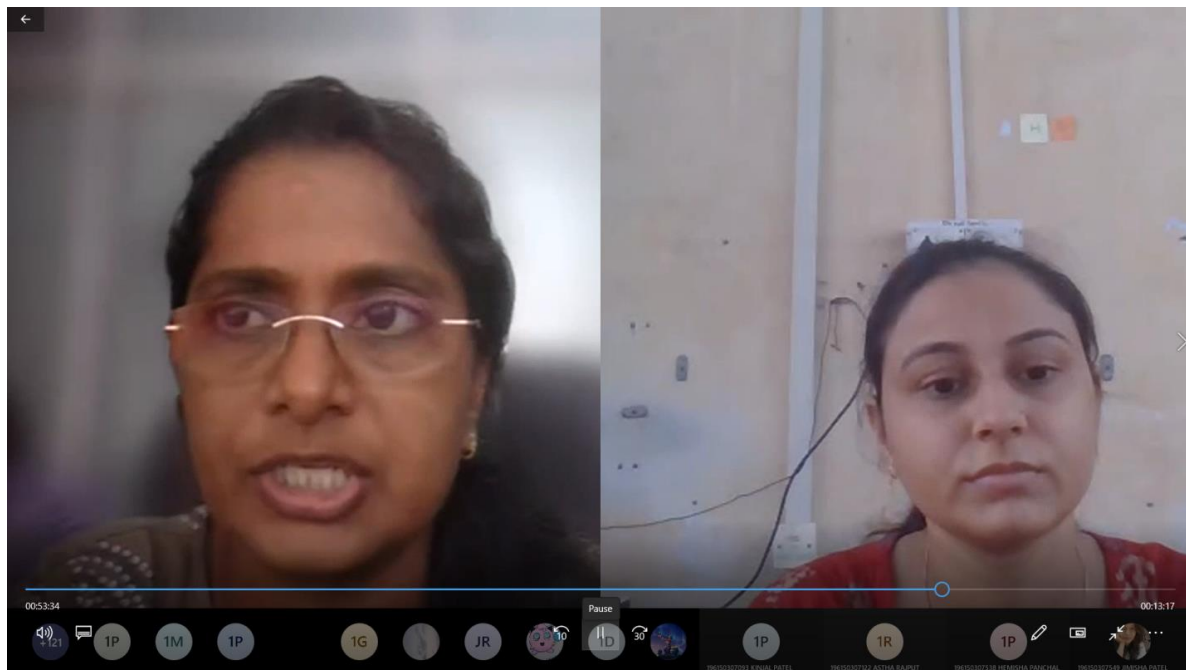
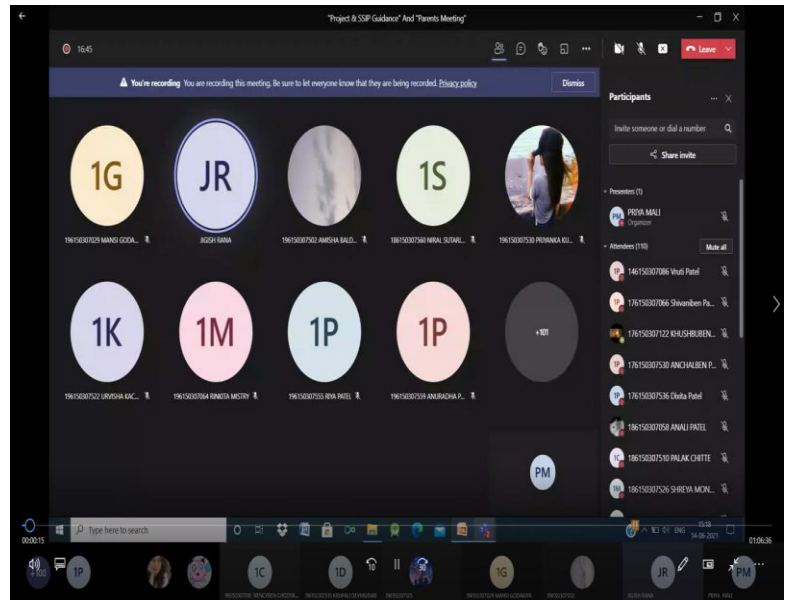
AGENDA To seek kind suggestions and feedback from the parents

SCHEDULE 14 JUNE 2021, MONDAY
4 PM ONWARDS
JOIN @ MS TEAMS

HOST: R.K.Chinaiwala
Y.M.Patel
P.A.Mali

PATRON: Smt. R.M.Shah
HoD, DCE, GPG

CHIEF PATRON: Dr. S.N.Sampat
Principal, GPG



TEACHERS DAY CELEBRATION 2021
ON 06.09.2021



ONLINE DRAWING COMPETITION

20/09/2021



GOVERNMENT POLYTECHNIC FOR GIRLS, SURAT COMPUTER ENGINEERING DEPARTMENT

VISION OF THE DEPARTMENT

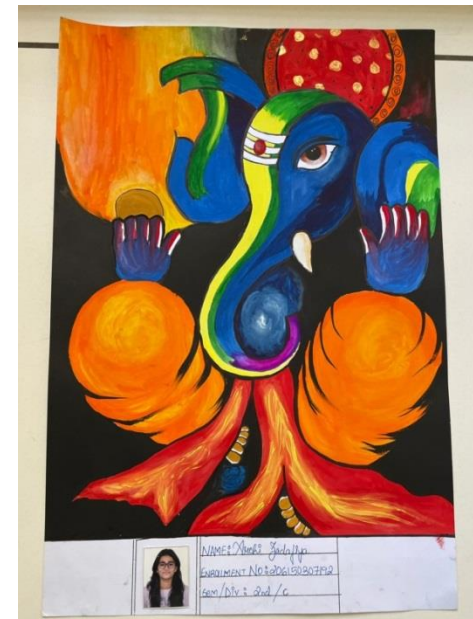
To empower girls of diploma computer engineering to excel in IT Industries and serve the society.

MISSION OF DEPARTMENT

1. To strive for academic excellence and professional competence among students and staff.
2. To encourage innovative ideas among students to enhance their entrepreneurship skills.
3. To provide high tech educational resources and supportive infrastructure.

DRAWING COMPETITION

DATE: 20/9/2021, MONDAY



ONLINE FANCY DRESS COMPETITION

22/10/2021



GOVERNMENT POLYTECHNIC FOR GIRLS, SURAT
COMPUTER ENGINEERING DEPARTMENT

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FANCY DRESS COMPETITION: CHHEL CHHABILO GUJARATI

DATE: 22/10/2021, FRIDAY



WEBINARS



Presented By:

Mr. Prem Popatia
Node.Js Developer
Leaf Drive Tech.

Saturday-03/07/2021

1:00 PM TO 2:00 PM

Platform: MSTeams

Link: <https://urlzs.com/csCxI>

A WEBINAR ON NODE.JS FOR WEB DEVELOPING

ORGANIZED BY:
COMPUTER DEPARTMENT



Facilitator:
Dr. S N Sampat
Principal
Government polytechnic for girls,surat



Government Polytechnic For Girls

Computer Engineering Department

Organizes Webinar
on

"Introduction to Arduino and IoT kit"



Speaker :
Mr. Bhavik Prajapati
Embedded Software Engineer



Date: 07/08/2021
Time: 10:00 am to 1:00 pm

Facilitator: Dr. S. N. Sampat
Principal(GGP, Surat) &
Mrs. Rekha M. Shah
H.O. D(Computer Dept.)

Link to join webinar on Microsoft Teams:
<https://tinyurl.com/Arduino-IoT-Webinar>

Coordinator: Ms. Khyati H. Patel
Mr. Sandip I. Patel



Government Polytechnic for Girls Surat

Computer Engineering Department
Organizes Webinar on

Online Video Presentation for working of Arduino

DATE: 04/09/2021
TIME: 11:30 am to 12:30 pm

Coordinators:
Ms. Khyati H. Patel
Mr. Sandip I. Patel

Facilitator:
Mr. Sanjay N. sampat(Principal)
Mrs. Rekha M. Shah(HoD, Computer Dept.)

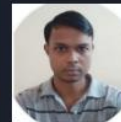


Vision

To become a premier diploma engineering institute that empowers girls to excel in industry and serve the society.

Mission:

1. To strive for academic excellence and professional competence among students and staff.
2. To create a conducive campus environment for exchange of ideas and knowledge.
3. To initiate and adopt policies for skill development and innovation, with emphasis on entrepreneurship.
4. To provide the best resources and infrastructure.



Speaker:
Mr. Aashish M. Patel
Lecturer in EC,
GPG Surat