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GEETHANJALI INSTITUTE OF SCIENCE AND TECHNOLOGY

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VISION-MISSION

VISION

To emerge as a competent learning centre producing prospective Engineers

MISSION

DM1: Provide conceptual and practical education through effective teaching-Learning strategies
DM2: Establish adequate Infrastructural support for enhanced learning
DM3: Interact with industry for upgrading professional skills including smart grid.
DM4: Organise personality development activities for imbibing life skills and ethical values

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Graduates of B.Tech., in Electrical and Electronics Engineering program shall able to

PEO1: Analyse and solve real world Electrical and Electronics Engineering problems by applying modern engineering concepts.

PEO2: Pursue professional career or research.

PEO3: Demonstrate Excellence in multi-disciplinary teams through effective inter personal skills and ethical behaviour.

PEO4: Engage in continuous learning and adapt to the ever-evolving requirements of profession & society.

TABLE of CONTENTS

HYPERLOOP

Hyperloop is a new form of ground transport currently in development by a number of companies, It could see passengers travelling at over 700 miles an hour in floating pod which races along inside giant low-pressure tubes, either above or below ground.

What makes Hyperloop different?

There are two big differences between Hyperloop and traditional rail. Firstly, the pods carrying passengers travel through tubes or tunnels from which most of the air has been removed to reduce friction. This should allow the pods to travel at up to 750 miles per hour. Secondly, rather than using wheels like a train or car, the pods are designed to float on air skis. using the same basic idea as an air hockey table, or use magnetic levitation to reduce friction. The vactrain concept resembles a high-speed rail system without substantial air resistance by employing magnetically levitating trains in evacuated (airless) or partly evacuated tubes. However, the difficulty of maintaining a vacuum over large distances has prevented this type of system from ever being built. By contrast, Hyperloop operates at approximately one millibar (100 Pa) of pressure and requires the air for levitation.

WHAT ARE THE BENEFITS OF HYPERLOOP?

Supporters argue that Hyperloop could be cheaper and faster than train or car travel, and cheaper and less polluting than air travel.

They claim that it's also quicker and cheaper to build than traditional high-speed rail.

Hyperloop could therefore be used to take the pressure off gridlocked roads, making travel between cities easier.

- J. SUJITH

STARLINK

Starlink is a satellite internet service that provides high-speed internet coverage to remote areas. Starlink is a project by SpaceX, led by Elon Musk. SpaceX launched the first batch of Starlink satellites in 2019.

What is Starlink?

Technically a division within SpaceX, Starlink is also the name of the spaceflight company's "constellation," or growing network, of orbital satellites. The development of that network began in 2015, with the prototype satellites launched into orbit in 2018. Since then, SpaceX has deployed thousands of Starlink satellites into the constellation across multiple launches

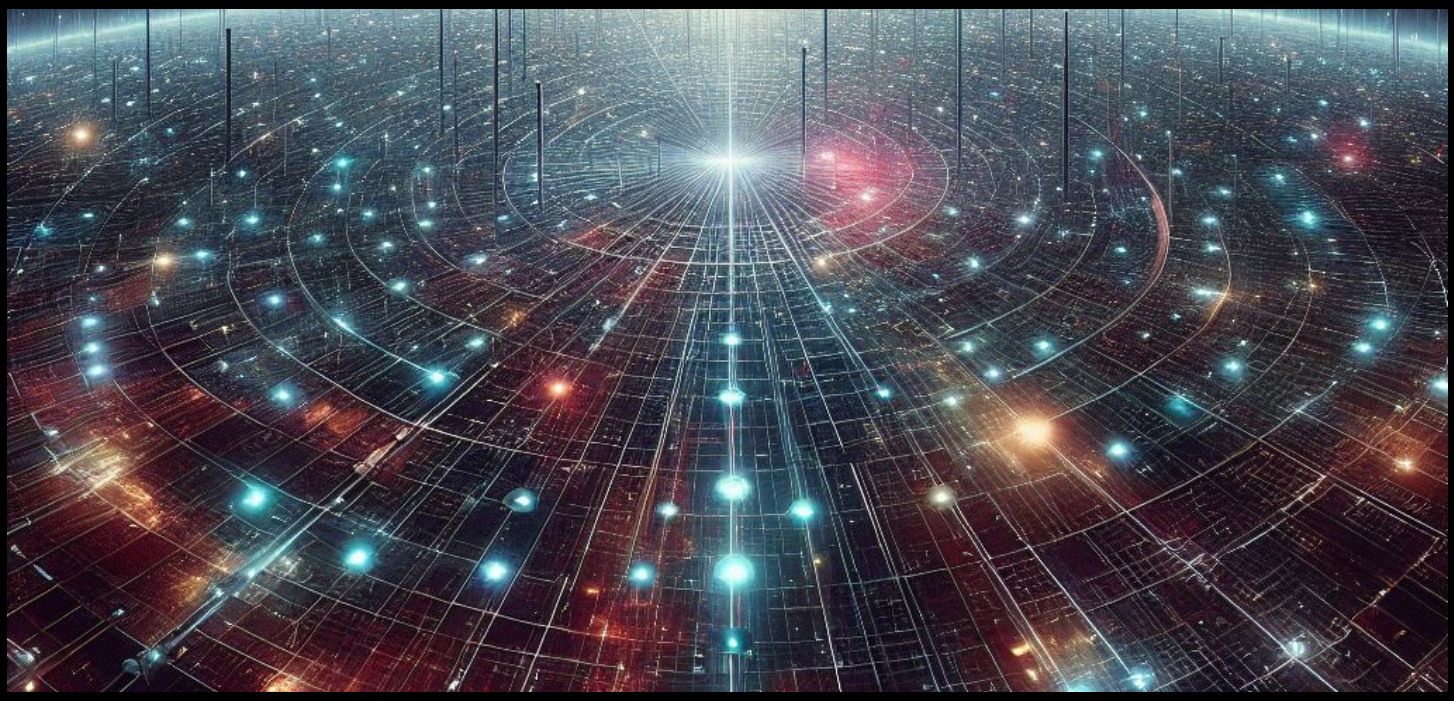
the most recent of which took place on June 12 and delivered another 52 satellites into low-Earth orbit. That brings the total number of satellites launched to approximately 4,600.Do Starlink satellites connect my home to the internet?
That's the idea, yes.

Like fellow satellite internet providers HughesNet and Viasat, Starlink wants to sell internet access -- particularly to people in rural areas and other parts of the world who don't already have access to high-speed broadband"Starlink is ideally suited for areas of the globe where connectivity has typically been a challenge," the Starlink website reads..

All you need to do to connect is set up a small satellite dish at your home to receive the signal and pass the bandwidth on to your router. The company offers several mounting options for rooftops, yards and the exterior of your home. There's even a Starlink app for Android and iOS that uses augmented reality to help customers pick the best location and position for their receivers. Starlink's service is available in select regions in the US, Canada and abroad and, per a May post on the company's official Twitter account, now boasts over 1.5 million subscribers. Expect the coverage map to grow as more satellites enter the constellation. Eventually, Starlink hopes to blanket the entire planet in a usable, high-speed Wi-Fi signal, including for moving vehicles and in-flight Wi-Fi.

What speeds will you get with Starlink?

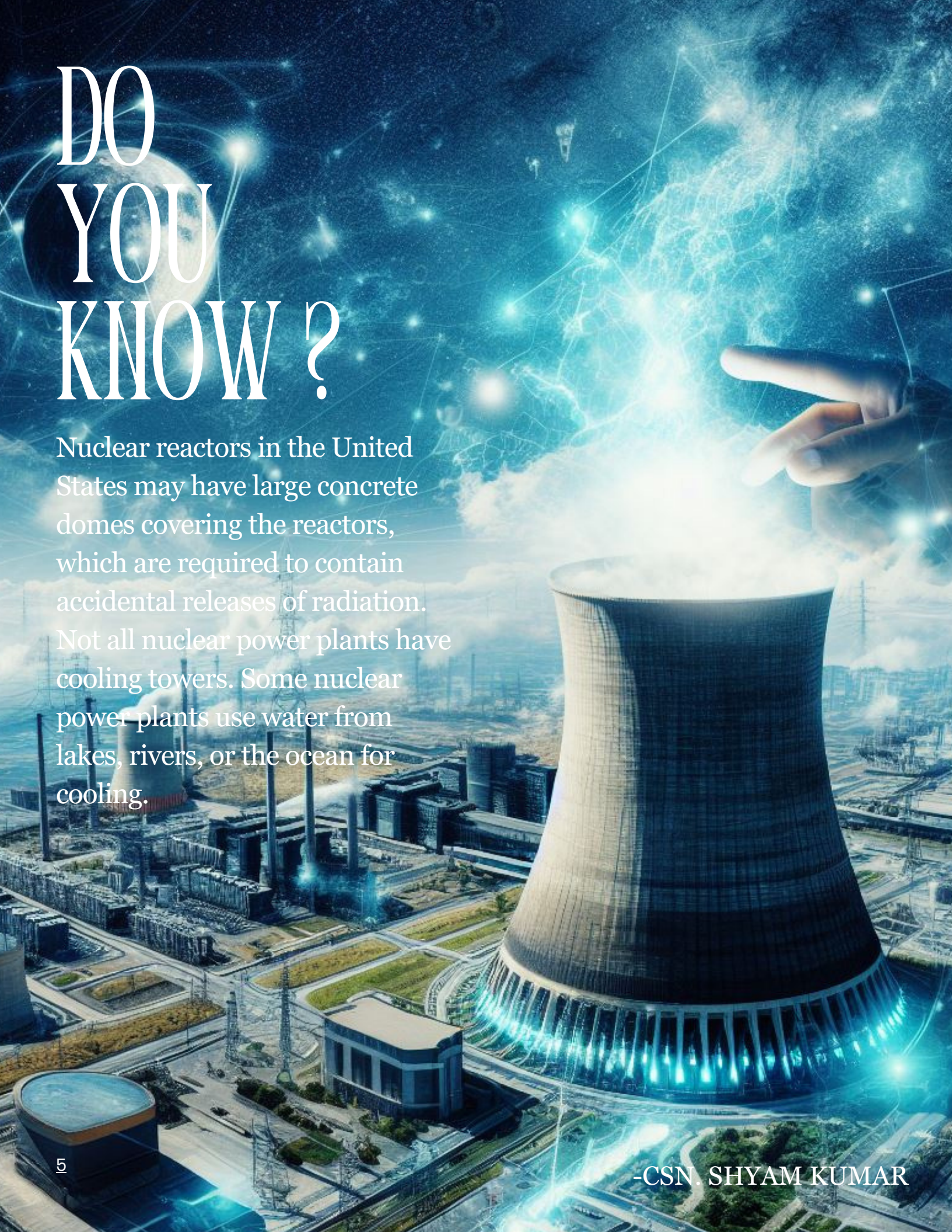
According to the internet speed-tracking site Ookla, which analyzed satellite internet performance during the first quarter of 2023, Starlink offered average download speeds of nearly 67Mbps in the US. That's down significantly from the end of 2021, when Starlink had median download speeds of just over 100Mbps. The results are still nearly double those for satellite rival Viasat and more than four times the median numbers of HughesNet. However, Starlink falls well shy of the numbers for the entire fixed broadband category (193Mbps), which includes satellite and other modes of delivering connectivity to peoples' homes.



SK. SAAQHIB

DO YOU KNOW ?

Nuclear reactors in the United States may have large concrete domes covering the reactors, which are required to contain accidental releases of radiation. Not all nuclear power plants have cooling towers. Some nuclear power plants use water from lakes, rivers, or the ocean for cooling.



-CSN. SHYAM KUMAR

Nuclear power plants have generated about 20% of U.S. electricity since 1990
As of August 1, 2023, 93 nuclear reactors were operating at 54 nuclear power plants in 28 states. Of the 54 operating nuclear power plants, 19 have one reactor, 31 have two reactors, and 4 have three reactors. The U.S. nuclear energy industry has supplied about 20% of total annual U.S. electricity since 1990. The United States generates more nuclear power than any other country, In 2021, 33 countries had commercial nuclear power plants, and in 15 of those countries, nuclear energy supplied at least 20% of their total annual electricity generation. The United States had the most nuclear electricity generation capacity and generated more nuclear electricity than any other country.

Top five nuclear electric generation capacity countries, 2021
Country Nuclear electricity generation capacity (million kilowatts) Nuclear electricity generation (billion kilowatthours) Nuclear share of country's total electricity generation
United States 95.49 778.15 19%
France 61.37 360.70 68%
China 53.26 407.52 5%
Russia 27.73 222.44 20%
South Korea 24.43 150.52 26%

M. SAI HEMANA

01

Wireless Mobile Battery Charger Circuit.

Emerging technologies are making our life simpler these days. With the introduction of mobile phones, life has changed rapidly. This is a dream of radio engineering. Mobile phones merged land line telephone systems. These days, many advancements in the mobile phones were introduced.

02

Stress Meter

Stress meter lets us access our emotional pain in an electronic format. With the help of this device one can know stress levels of the human body. If the stress is very high, the stress meter gives a visual indication through a Light Emitting Diode (LED) display along with a warning beep.

03

Cell Phone Detector Circuit

he most common electronic equipment used now-a-days is Cell Phone or Mobile Phone. With advancement in communication technology, the requirement of cell phones has increased dramatically. A cell phone typically transmits and receives signals in the frequency range of 0.9 to 3GHz.

04

Wireless Lock System Through OTP

Using the same password for your digital locks isn't the most secure way to keep intruders away since they only need to capture it once. However, OTP systems (one-time passwords) present a smart security solution that discards every password.

FUN ZONE

-K. BALA HARSHAVARDHAN

- Electrical engineers have the power to shock you with their knowledge!
- Electrical engineers don't get shocked by love, they just experience a high voltage connection!
- Electrical engineers have a magnetic personality that attracts all the current jokes.
- Electrical engineers are great at sparking conversations and keeping them energized.
- Electrical engineers are always charged up and ready to tackle any problem.
- Electrical engineers have a special connection with circuits, they're wired that way!
- Electrical engineers are the true masters of resistance, both in circuits and in life.
- Electrical engineers have a bright future ahead, they're always illuminating new paths.
- Electrical engineers have the power to turn your ideas into reality, one circuit at a time.


EVENTS

INTERNET OF THINGS WORKSHOP

1. Introduction to IoT: Start with a brief introduction to IoT and its applications in various fields such as healthcare, transportation, and agriculture. You can also discuss the benefits of IoT and how it is transforming the world.
2. Workshop Overview: Provide an overview of the IoT workshop, including the topics covered, the duration of the workshop, and the target audience. You can also include details about the instructors and their expertise in the field.
3. Hands-on Activities: Describe the hands-on activities that participants will engage in during the workshop. You can include details about the hardware and software used, the challenges faced, and the skills acquired.
4. Case Studies: Share some real-world case studies that demonstrate the impact of IoT on various industries. You can also discuss the challenges faced during the implementation of IoT solutions and how they were overcome.

WORKSHOP

1. Introduction to Programmable Logic Controllers (PLCs): You can start with a brief introduction to PLCs, their history, and how they have evolved over time. You can also discuss the importance of PLCs in industrial automation and control systems.
2. PLC Programming: You can explain the basics of PLC programming, including ladder logic, function block diagrams, and structured text. You can also provide examples of simple programs to help readers understand the concepts better.
3. PLC Hardware: You can discuss the different types of PLC hardware available in the market, including modular and compact PLCs. You can also explain the various components of a PLC, such as the processor, input/output modules, and communication interfaces.
4. PLC Applications: You can provide examples of real-world applications of PLCs, such as traffic light control, conveyor belt control, and temperature control. You can also discuss the advantages of using PLCs in these applications.