theIAShub

the IAS hub
Be Your Dream.

AUGUST
14

CRUX 10

10 News. 10 Sources. One Place

THE HINDU
ET
BS
TOI
The Indian EXPRESS
livemint
pib
DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH
Science Reporter
विज्ञान एवं प्रौद्योगिकी मन्त्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY



MK Yadav Sir

Table of Contents

1. Denial-of-Service (Dos) Attack
2. Jiyo Parsi Scheme Portal
3. Model Solar Village
4. INS Arighat
5. Pradhan Mantri JI-VAN Yojana
6. Right to Freedom of Religion
7. Ballast Water
8. Canine Distember
9. Diamond Imprest Licence
10. Mission Karmyogi

INDIAN EXPRESS

Page 19

DENIAL-OF-SERVICE (DOS) ATTACK

(Syllabus: GS Paper 3 – Cyber Security)

WHAT IS A DDOS ATTACK, CAUSE OF TRUMP-MUSK INTERVIEW GLITCHES?

EXPRESS NEWS SERVICE
NEW DELHI, AUGUST 13

BILLIONAIRE ENTREPRENEUR Elon Musk hosted former US President and Republican Presidential candidate Donald Trump on his social media platform X on Monday evening for a live audio interview. However, their conversation started after a 40-minute delay and witnessed several glitches. This happened due to what appeared to be a "massive DDoS attack on X", Musk said in a post.

What is a DDoS attack?

A Denial-of-Service (DoS) attack simply means that a website or any other online service cannot be accessed because it has been the target of attacks from a malicious actor. This is done by directing many users towards an online server simultaneously to "flood" it. It results in slow page loading times or a stoppage in internet services.

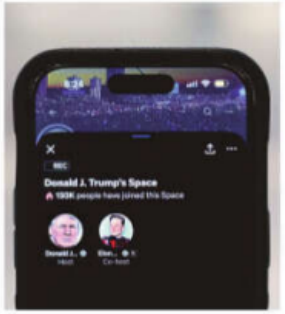
Computers connect to the Internet and one another through unique Internet Protocol (IP) addresses assigned to each device. The data they exchange is divided into smaller chunks, called "packets". The tech company IBM's website notes, "By using up a resource's available bandwidth, DDoS attacks prevent these resources from responding to legitimate connection requests and packets."

In a distributed denial-of-service (DDoS) attack, multiple sources work against one target. This makes the culprit harder to locate.

How do such attacks work?

DoS attacks can be carried out in many ways. In a "Smurf Attack", the attacker sends messages to several targets. Assuming false IP addresses while actually using the target's IP address, they send communication requests. As their targets respond, they end up flooding their own servers, leading to a DDoS attack.

In case of an "SYN flood", attackers send a connection request to a target network and receive an acknowledgement. However, they deliberately leave out the necessary step of confirming that connection. Multiple incomplete connections result in a load for the server, making completing real connections difficult.



The X Space with Donald Trump and Elon Musk. *Reuters*

What are the signs of a DoS attack?

Slowing internet speed and difficulties in accessing sites can mean a DoS attack.

In the past, X systems have faced difficulties due to other reasons. In 2023, Musk hosted Florida Governor Ron DeSantis on Spaces, the same audio platform on X where he hosted Trump. That interview also began after a delay of 30 minutes. Musk blamed the high volume of listeners — around 4,20,000 — for the strained system. This time, more than a million people tuned in.

Anti-virus software can help detect unusual online traffic, alert users and thwart DoS attacks.

How significant can DoS attacks be?

DoS attacks can cause major disruption, lasting between a few hours to a few days. In 2016, major websites like Spotify and Amazon were unavailable for many hours because of a DDoS attack.

Context: Billionaire Elon Musk hosted former US President Donald Trump on his social media platform X for a live audio interview, but the conversation faced a 40-minute delay and several glitches due to what appeared to be a "massive DDoS attack on X."

DDoS Attack

- **Definition**: A Denial-of-Service (DoS) attack occurs when a website or online service becomes inaccessible due to targeted attacks by a malicious actor.
- **Method of Attack**: The attack involves directing a large number of users to a specific online server simultaneously to "flood" it.
- **Role of IP Addresses:** Computers connect to the Internet using unique Internet Protocol (IP) addresses, and data exchanged is broken into smaller chunks called "packets."
- **Characteristics:** A Distributed Denial-of-Service (DDoS) attack involves multiple sources targeting one system, making it difficult to identify the attacker.

DoS and DDoS attacks work

- **Different Methods**: DoS attacks can be executed using various techniques, each designed to overwhelm the target and disrupt normal operations.
- **Botnets:** Attackers often deploy botnets, which are networks of compromised devices, to execute large-scale attacks.
- **Smurf Attack:** In a Smurf Attack, attackers send ICMP broadcast packets to multiple hosts. The ICMP protocol is typically used to communicate data transmission errors, but here it is exploited for malicious purposes.
- **Spoofed IP Address**: Attackers use a spoofed source IP address belonging to the target machine. As hosts respond to the spoofed address, they inadvertently flood the target's server, causing a DDoS attack.
- **SYN Flood:** An SYN flood occurs when an attacker sends connection requests to a target server without completing the connection. This disrupts the server's ability to process legitimate connections.
- **Overloading Servers**: By sending multiple incomplete connection requests, attackers create a heavy load on the server, making it difficult for the server to handle legitimate traffic efficiently.

JIYO PARSI SCHEME PORTAL

(Syllabus GS Paper 2 – Social Justice)

Kiren Rijiju launches portal for Jiyo Parsi Scheme

The Hindu Bureau
NEW DELHI

Union Minority Affairs Minister Kiren Rijiju on Tuesday launched the portal for the Jiyo Parsi Scheme, a Central sector scheme to arrest the population decline of the Parsi community in India.

Emphasising the rich heritage and culture of the community, the Minister said the Parsi population is decreasing and this needs to be addressed.

He added that the government's intervention in the form of the Jiyo Parsi Scheme is expected to help the community in the future. "I request the eligible Parsi couples to avail the benefits of the scheme and and help the government in building a stronger nation," said the Minister.

Context: Union Minority Affairs Minister launched the Jiyo Parsi Scheme portal, a Central sector initiative aimed at reversing the population decline of the Parsi community in India.

Jiyo Parsi Scheme Portal

- **About:** It is a unique Central Sector Scheme implemented by the Ministry of Minority Affairs.
- **Objective**: To reverse the declining trend of Parsi population by adopting a scientific protocol and structured interventions and to stabilize their population.
- The scheme provides financial assistance to the Parsi Couples for medical treatment under standard medical protocol and towards childcare and assistance to dependent elderly.
- **Benefit:** It would enable Parsis to apply, check the status of their application and to receive financial assistance online through direct benefit transfer mode.

Jiyo Parsi Scheme

- **About:** The Ministry of Minority Affairs launched the Jiyo Parsi Scheme in 2013 to address the declining Parsi population.
- **Objective**: The scheme aims to stabilize and increase the Parsi population in India through scientific protocols and structured interventions.
- **Components of the Scheme:**
  - **Advocacy Component:** Includes workshops, advertisement campaigns, and other awareness activities.
  - **Health of the Community**: Provides support for childcare, creche facilities, and assistance to the elderly.
  - **Medical Component:** Offers financial aid for infertility detection, treatment, and fertility treatments.

PIB Aug 13

MODEL SOLAR VILLAGE

(Syllabus: GS Paper 3 – Economy)

Government of India issues Operational Guidelines for Implementation of 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana

Context: The Ministry of New and Renewable Energy recently issued the Scheme Guidelines for implementing the 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana.

Model Solar Village

- **About:** The initiative focuses on creating one Model Solar Village per district across India.
- **Objective**: The goal is to promote solar energy adoption and enable village communities to become self-reliant in meeting their energy needs.
- **Implementation:** The State/UT Renewable Energy Development Agency will implement the scheme under the supervision of the District Level Committee (DLC).
- **Criteria for Selection:**
- **Village Eligibility**: To be considered under the competition mode, a village must be a revenue village with a population above 5,000 (or 2,000 for special category states).
- **Assessment:** Villages will be assessed based on their overall distributed renewable energy (RE) capacity installed six months after being declared a potential candidate by the District Level Committee (DLC).
- **Winning Criteria:** The village with the highest RE capacity in each district will receive a central financial assistance grant of ₹1 crore.

PM-Surya Ghar: Muft Bijli Yojana

- **Announced**: It is a free electricity scheme that was earlier announced by the Finance Minister in her interim budget speech on February 1.
- **Launched:** To promote sustainable development designed to alleviate the financial burden on citizens, will offer substantial subsidies directly deposited into the beneficiaries' bank accounts.
- **Funding**: This initiative, backed by an investment exceeding Rs. 75,000 crores,
- **Aim:** To illuminate one crore households by providing up to 300 units of free electricity monthly.

TIMES OF INDIA

Aug 13

INS ARIGHAT

(Syllabus: GS Paper 3 – Sci and Tech)

India 'fully ready' to add to fleet 2nd submarine with nuclear-tipped missiles

Context: India is ready to commission its second nuclear-powered submarine, INS Arighat, which is equipped with nuclear missiles for strategic deterrence.

INS Arighat

- **About:** It is India's second indigenously built nuclear-powered ballistic missile submarine, following INS Arihant, commissioned in 2018.
- **Role in Nuclear Triad**: It is a critical component of India's nuclear triad, allowing nuclear missile launches from land, air, and sea.
- **Project-77**: Originally part of Project-77, the plan was for six 6,000-tonne hunter-killer submarines (SSNs), reduced to three, and now stands at two vessels.
- **Current Fleet:** India currently has one SSBN (INS Arihant) and 16 diesel-electric submarines, including six old Russian Kilo-class and four German HDW submarines, along with six new French-origin Scorpenes.
- **Features of INS Arighat:**
  - **Dimensions**: The submarine measures 111.6 meters in length, with a beam of 11 meters, a draught of 9.5 meters, and a displacement of 6,000 tonnes.
  - **Propulsion**: It will have a seven-blade propeller powered by a pressurized water reactor.
  - **Speed**: It can achieve a maximum speed of 12–15 knots (22–28 km/h) on the surface and 24 knots (44 km/h) when submerged.
  - **Missile Capacity**: It can carry up to four nuclear-capable K-4 SLBMs with a range of over 3500 kilometers or twelve K-15 SLBMs with a range of about 750 kilometers.
  - **Safety Measures**: Includes two standby auxiliary engines and a retractable thruster for emergency power and mobility.

DD NEWS Aug 13

PRADHAN MANTRI JI-VAN YOJANA
(Syllabus: GS Paper 3 – Env and Eco)

Cabinet Approves Extended Pradhan Mantri JI-VAN Yojana To Boost Advanced Biofuel Projects

Context: Recently, the Union Cabinet approved the extended Pradhan Mantri JI-VAN Yojana to boost advanced biofuel projects.

Pradhan Mantri JI-VAN Yojana

- **Objective**: This Yojana aims to provide financial support for Integrated Bioethanol Projects utilizing lignocellulosic biomass and other renewable feedstocks.
- **Implementation Agency:** The Centre for High Technology (CHT), a technical body under the Ministry of Petroleum and Natural Gas (MoP&NG), will oversee the scheme's implementation.
- **Project Scope**: The Yojana plans to establish 12 commercial-scale Second Generation (2G) Bioethanol projects and 10 demonstration-scale 2G Bioethanol projects using non-food biomass feedstocks and other renewable resources.
- **Features**:
  - Remunerative Income for Farmers
  - Environmental Pollution Mitigation
  - Local Employment Opportunities
  - Energy Security and Self-Reliance
  - Net-Zero GHG Emissions by 2070
  - Ethanol Blending Program (EBP) through commercially viable 2G Ethanol projects
- **Viability Gap Funding (VGF)**:
  - **Phase-I (2018-19 to 2022-23)**: Support for six commercial projects and five demonstration projects.
  - **Phase-II (2020-21 to 2023-24)**: Support for the remaining six commercial projects and five demonstration projects.

Recent Changes

- **Implementation Extension**: The scheme's implementation period has been extended by five years, now running through 2028-29.
- **Scope Expansion**: The revamped Yojana now includes advanced biofuels from lignocellulosic feedstocks, covering agricultural and forestry residues, industrial waste, synthesis gas (syngas), and algae.
- **Eligibility for Existing Plants:** Both 'bolt-on' plants (which upgrade existing facilities) and 'brownfield projects' (revamping existing facilities) are now eligible, encouraging existing players to improve the viability of their operations.

RIGHT TO FREEDOM OF RELIGION

(Syllabus: GS Paper 2 – Polity)

Right to Religious Freedom Isn't For Conversions: HC

Allahabad High Court rejects bail application of a person converting a girl to Islam



Our Political Bureau

New Delhi: While rejecting the bail application of a person, facing different charges, including converting a girl to Islam, the Allahabad High Court recently observed the basic object and reason of the enforcement of the UP Prohibition of Unlawful Conversion of Religion Act, 2021, was to guarantee religious freedom to all persons which reflects the social harmony and spirit of India. The objective of this Act was to sustain the spirit of secularism in India.

"The Constitution confers on each individual the fundamental right to profess, practice and propagate his religion. However, the individual right to freedom of conscience and religion cannot be extended to construe a collective right to proselytise, the right to religious freedom belongs equally to the person converting and the individual sought to be converted," a bench of Justice Rohit Ranjan Agarwal, who heard the matter, stated in his order.

In his order, the bench of Justice Agarwal also mentioned that according to the Constitution, the State has no religion, and all religions are equal before the state, and no religion shall be given preference over the other. All persons are free to preach, practice and propagate any religion of their choice.

lIndividual right to freedom of eligion cannot be extended to construe a collective right to proselytis: HC

The petitioner, Ajeem, is accused in a case registered under Sections 323, 504, 506 of the IPC and Sections 3/5(1) of the Uttar Pradesh Prohibition of Unlawful Conversion of Religion Act, 2021. The case number 223 of 2024 registered with Police Station Kotwali of Badaun district.

As per the prosecution story, the applicant had made videos of the informant and was blackmailing her.

Context: The Allahabad High Court recently rejected the bail application of an individual facing charges, including converting a girl to Islam, noting that the UP Prohibition of Unlawful Conversion of Religion Act, 2021.

Right to Freedom of Religion

- **About:** The right to freedom of religion is a fundamental principle enshrined in the Indian Constitution, reflecting the country's commitment to secularism and religious pluralism.
- **Constitutional Provision**: Articles 25-28 of the Constitution guarantee individuals the freedom to profess, practice, and propagate their religion of choice while promoting equality and preventing discrimination on religious grounds.
    - **Article 25:** This article guarantees freedom of conscience and the freedom to profess, practice, and propagate religion freely.
    - **Article 26:** It provides the freedom to manage religious affairs.
    - **Article 27**: This article ensures freedom from compulsion to pay taxes for the promotion of any particular religion.
    - **Article 28**: It grants freedom regarding attendance at religious instruction or religious worship in certain educational institutions.

UP Prohibition of Unlawful Conversion of Religion Act, 2021

- **About**: It was to guarantee religious freedom to all persons which reflects the social harmony and spirit of India.
- **Objective**: The Act aims to control conversions that occur through misrepresentation, force, undue influence, coercion, allurement, or fraudulent means.
- **Increased Penalties for Repeat Offenders:** Individuals who repeatedly violate the law may face up to double the standard punishment.
- **Void Marriages for Conversion**: Marriages conducted solely for the purpose of unlawful conversion are declared legally void.

THE HINDU Page 10

BALLAST WATER

(Syllabus: GS Paper 3 – Sci and Tech)

Does India have laws on the movement of ballast water?

How is ballast water facilitating the spread of invasive mussels on the coast near the Kamarajar Port?

M. Kalyanaraman

The story so far:

The Tamil Nadu Water Resources Department (WRD) has informed the National Green Tribunal that it has sought ₹160 crore from the Kamarajar Port in Ennore, Tamil Nadu, to facilitate the removing of invasive mussels on the coast near the port in connection with an ongoing case on the proliferation of *Mytella strigata*, or charru mussel that harms marine ecosystems and hinders fisher boat movements, affecting their livelihood. The WRD has charged that Kamarajar Port is the main reason for the spread of the invasive species by not regulating the ballast water from ships.

What is ballast water?

Ships need to have a certain level of immersion into the sea to be stable. When a ship discharges cargo, it rises up in the water and therefore, to keep a minimum level of immersion, ship staff take in sea water called ballast water inside tanks in the ship. And when the ship loads cargo, leading to more immersion, the ballast water is pumped out of the ship. Until recently, there was no bar on taking in and pumping out of ballast water at ports, in the ocean, along the coast and so on. Since ballast water carries invasive species into other countries that destroy ecosystems, global shipping has sought to regulate ballast water discharge.

How serious is the problem?

In India, scientists have recorded nearly 30 invasive species coming from ship ballast water. Among the most harmful in recent times is the charru mussel, *Mytella Rigata*, says Biju Kumar, professor and head of the department of aquatic biology and fisheries at the University of Kerala. In the Pulicat lake in Tamil Nadu, as in Ashtamudi lake in Kerala, this mussel has replaced almost all other species, he says. Its survival rate and egg production is very high. Though of marine origin, it can survive even in fresh water, he adds.

What are global regulations?

The Ballast Water Management (BWM) Convention of the International Maritime Organization (IMO) came into force in 2017 to help prevent the spread of potentially harmful aquatic organisms and pathogens in ships' ballast water. From September 8, 2017, ships must manage their ballast water so that aquatic organisms and pathogens are removed or rendered harmless before the ballast water is released in a new location.

Recently constructed ships with functioning ballast water management systems continuously take a small portion of the ballast water they had taken in after discharge of cargo and dose it with chemicals so that all the water is rendered free of any biological organism before the water is pumped out during the loading of cargo. Ships built before the BWM convention that don't have these systems are required to exchange the ballast water they took in a port with "neutral" water from the middle of the oceans enroute to the loading port.

Context: Ballast water from ships is facilitating the spread of invasive mussels along the coast near Kamarajar Port, exacerbating local ecological issues.

Ballast Water

- **About:** It is pumped into ballast tanks when a ship has delivered cargo to a port and is departing with less cargo or no cargo.
- **Purpose:** Ships need to maintain stability by taking in sea water, known as ballast water, to ensure a consistent level of immersion when discharging or loading cargo.
- **Process of Ballast Management:** When cargo is discharged and the ship rises, ballast water is taken in to maintain stability. Conversely, when cargo is loaded, the ballast water is pumped out to adjust immersion levels.
- **Regulation of Ballast Water:** Previously unregulated, the discharge and intake of ballast water at various locations is now subject to global regulations to prevent the spread of invasive species.

Global Regulation

- Global regulations are international rules designed to address issues that affect multiple countries, such as environmental protection, trade standards, and safety measures.
- **BWM Convention**: The Ballast Water Management (BWM) Convention of the International Maritime Organization (IMO) was implemented in 2017 to prevent the spread of harmful aquatic organisms and pathogens via ships' ballast water.
- **Requirement for Ships Post-2017**: Since September 8, 2017, all ships must manage their ballast water to ensure that aquatic organisms and pathogens are either removed or neutralized before discharging the water in new locations.

How Serious is the Problem?

- **Invasive Species in India:** Scientists have identified nearly 30 invasive species from ship ballast water in India, with the charru mussel (Mytella rigata) being notably harmful.
- **Impact on Ecosystems:** The charru mussel has significantly displaced native species in Pulicat Lake and Ashtamudi Lake, Kerala, due to its high survival and reproduction rates.
- **Adaptability of Charru Mussel**: Despite being of marine origin, the charru mussel can thrive in both marine and freshwater environments, exacerbating its impact on local ecosystems.

DECCAN HERALD

Aug 13

CANINE DISTEMBER

(Syllabus: GS Paper 3 – Sci and Tech)

Stray dogs within 2 km radius of Corbett Tiger Reserve's boundaries to be vaccinated

Context: Stray dogs in villages within two kilometre radius of the Corbett Tiger Reserve's boundaries in Uttarakhand will be vaccinated against the canine distemper virus so that the disease does not infect tigers and elephants of the reserve.

Canine Distember

- **About:** It is a highly contagious and serious disease caused by the canine distemper virus (CDV).
- **Affected Systems:** The virus primarily attacks the respiratory, gastrointestinal, and nervous systems of dogs.
- **At-Risk Populations**: All dogs are at risk, particularly puppies younger than four months and unvaccinated dogs.
- **Cross-Species Infection:** CDV can infect ferrets and a variety of other mammals, particularly carnivores, including wild canines, raccoons, and skunks.
    - Cats can also become infected but are unlikely to show symptoms.
- **Transmission**: The virus spreads through direct contact or airborne exposure.
- **Symptoms**: The virus weakens the immune system and spreads throughout the body, making the dog vulnerable to secondary infections.
    - **Common Symptoms**: Key symptoms include coughing, fever, eye/nasal discharge, disorientation, tremors, twitches, and seizures.
- **Treatment and Prevention:**
- **No Cure**: There is currently no cure for canine distemper, and no antiviral drugs are approved for its treatment.
- **Vaccination**: It is the most effective way to prevent canine distemper.

PIB Aug 13

DIAMOND IMPREST LICENCE

(Syllabus: GS Paper 3 – Economy)

40th Edition of India International Jewellery Show: Union Minister Shri Piyush Goyal announces introduction of Diamond Imprest Licence

Context: Union Minister of Commerce & Industry of India announced the introduction of Diamond Imprest Licence.

Diamond Imprest Licence

- **About:** The licence permits eligible exporters to import cut and polished diamonds, including semi-processed, half-cut, and broken diamonds.
- **Import Limits and Value Addition:** Exporters can import diamonds up to 5% of their average turnover from the past three years, with a requirement to add 10% value.
- **Restrictions on Use:** Imports under this licence must be used by the importer and cannot be transferred, even after the completion of exports.
- **Historical Context**: This licence was previously part of the foreign trade policies of 2002 and 2009.
- **Significance for MSME Exporters**: The licence will provide a level-playing field for Indian MSME diamond exporters, prevent the flight of investment, and create additional employment opportunities.
- **Impact on Indian Diamond Exporters:**
  - The Diamond Imprest Licence will benefit MSME exporters, a significant segment of India's gem & jewellery export sector, by allowing them to import up to 5% of their average export turnover over the past three years.
  - This change aims to align MSME exporters with their larger counterparts and mitigate the outflow of investment to diamond mining regions.

Gem and Jewellery Export Promotion Council (GJEPC)

- **About**: It set up by the Ministry of Commerce, Government of India (GoI) in 1966.
- It is one of several Export Promotion Councils (EPCs) launched by the Indian Government, to boost the country's export thrust, when India's post-Independence economy began making forays in the international markets.

ECONOMIC TIMES Aug 13

MISSION KARMYOGI
(Syllabus: GS Paper 2 – Governance)

'Amrit Gyan Kosh' and 'Faculty Development' portals launched under Mission Karmayogi

Context: The Union Minister of State for Personnel, Public Grievances, and Pensions launched the 'Amrit Gyan Kosh' and 'Faculty Development' portals at the Civil Service Training Institutions Conference in Vigyan Bhavan, New Delhi.

Mission Karmyogi

- **Launched in**: September, 2020.
- **Also known as:** National Programme for Civil Services Capacity Building (NPCSCB).
- **Objective**: To reform Indian bureaucracy and prepare civil servants for the future.
- **Aim:** Comprehensive reform of the capacity building apparatus at individual, institutional and process levels for efficient public service delivery.
- **It created**: Capacity Building Commission (CBC).
- **The programme is delivered by**: Setting up an Integrated Government Online Training-iGOT Karmayogi Platform.

Amrit Gyan Kosh Portal

- **About:** It Provides a shared knowledge bank with India-centric case studies.
- **Launched by:** Ministry of Personnel, Public Grievances & Pensions.
- **Under**: Mission Karmayogi.

Faculty Development Portal

- **About**: It is designed to improve the teaching skills of practitioners and educators, ensuring they can effectively impart knowledge to civil servants.
- **Objective**: It provides resources and support to enhance educators' skills and effectiveness in training civil service officials.

FREE Download PDF

Login to theiashub.com

- Aaj Ka Quality Enrichment (Toppers' Favourite PDF)
- News-CRUX-10 (10 News. 10 Sources. One Place)
- Monthly Editorials (The Hindu & Indian Express)
- Daily Quiz (Prelims)
- Government Schemes & Ministry Wise Year End Review
- Free Enrichment PDFs (Tailor Made Crisp Study Material)



Log On To Our Unique
Free Answer Writing Sessions with Toppers (FAST) Portal
& Start Practicing!

SCAN HERE

9560082909

t.me/theiashub

/mkyadav

www.theiashub.com

www.theiashub.com