CYBER ETHICS AND IPR

UNIT - 1

Cyber Ethics

1. Definition:

- Cyber ethics refers to the moral principles and guidelines that govern the use of information technology and online behavior. It encompasses the responsible use of technology, ensuring the safety, privacy, and well-being of individuals and communities.
- Cyber ethics refers to the moral principles that govern the behavior and decision-making process of individuals and organizations in the digital environment. It involves the responsible use of technology and the internet.

Key Principles:

- **Privacy**: Respecting individuals' privacy and handling personal data responsibly.
- **Security**: Ensuring the protection of systems, networks, and data from unauthorized access or attacks.
- **Integrity**: Maintaining the accuracy and reliability of information.
- **Responsibility**: Acknowledging the impact of one's actions online and being accountable for them.
- **Respect for Property**: Respecting digital property rights, including software and digital content.
- **Privacy:** Respecting the privacy of individuals online, ensuring that personal information is protected and not misused.
- **Security:** Implementing measures to protect information systems from unauthorized access, breaches, and cyber attacks.
- **Accuracy:** Ensuring the accuracy of information shared online, avoiding the spread of misinformation and fake news.
- **Property:** Respecting intellectual property rights and avoiding plagiarism, software piracy, and unauthorized use of digital content.
- **Accessibility:** Promoting equal access to technology and information for all individuals, regardless of their socio-economic status.

2. Ethical Issues in Cyberspace:

- **Cyberbullying:** Harassment or bullying conducted through digital platforms.
- **Data Breaches:** Unauthorized access to sensitive data, leading to privacy violations and potential misuse.
- **Digital Divide:** The gap between individuals who have access to modern information and communication technology and those who do not.
- **Intellectual Property Theft:** Unauthorized use or reproduction of someone else's work without permission.
- **Artificial Intelligence:** Ethical concerns related to the development and use of AI, including bias, job displacement, and decision-making transparency.
- **Cyberbullying**: Harassment or bullying using digital platforms.

- **Hacking**: Unauthorized access to systems or networks.
- **Data Theft**: Unauthorized copying or use of data.
- **Digital Piracy**: Illegal copying or distribution of digital content like software, movies, and music.
- **Misinformation**: Spreading false information online.

3. Ethical Guidelines:

- **ACM Code of Ethics:** A comprehensive guideline by the Association for Computing Machinery that outlines ethical conduct for computing professionals.
- **IEEE Code of Ethics:** Ethical standards set by the Institute of Electrical and Electronics Engineers to guide professionals in technology and engineering fields.
- **GDPR Compliance:** Ensuring compliance with the General Data Protection Regulation for protecting personal data and privacy in the European Union.

Best Practices:

- Use strong, unique passwords and change them regularly.
- Be cautious of phishing scams and suspicious links.
- Respect others' opinions and privacy online.
- Report illegal activities or unethical behavior encountered online.

Intellectual Property Rights (IPR)

1. Definition:

- Intellectual Property Rights (IPR) refer to the legal protections granted to creators and inventors to safeguard their creations, inventions, and innovations from unauthorized use.

2. Types of IPR:

- **Copyright:** Protects original literary, artistic, and musical works. It grants the creator exclusive rights to reproduce, distribute, and display the work.
- **Patent:** Provides exclusive rights to inventors for their inventions, allowing them to exclude others from making, using, or selling the invention for a certain period.
- **Trademark:** Protects symbols, names, and slogans used to identify goods or services. It ensures that the brand is distinct and not used by others.
- **Trade Secrets:** Protects confidential business information that provides a competitive edge. It includes formulas, practices, processes, and designs.
- **Industrial Design:** Protects the visual design of objects that are not purely utilitarian. It covers the aesthetic aspects of an article.

3. Importance of IPR:

- **Encourages Innovation:** Provides incentives for individuals and companies to innovate and create new products and technologies.
- **Economic Growth:** Contributes to economic development by promoting creativity, investment, and job creation.

- **Consumer Protection:** Ensures that consumers receive authentic and high-quality products by protecting brands and trademarks.
- **Cultural Preservation:** Helps in preserving cultural heritage by protecting artistic and literary works.

4. Challenges in IPR:

- **Digital Piracy:** Unauthorized reproduction and distribution of digital content, such as movies, music, and software.
- **Counterfeiting:** Production and sale of imitation products that infringe on trademarks and patents.
- **Global Enforcement:** Difficulties in enforcing IPR across different countries with varying legal systems and levels of protection.
- **Balancing Rights:** Finding a balance between protecting creators' rights and ensuring public access to knowledge and cultural resources.

5. Key Organizations:

- **World Intellectual Property Organization (WIPO):** A global forum for intellectual property policy, services, information, and cooperation.
- **United States Patent and Trademark Office (USPTO):** The federal agency responsible for granting patents and registering trademarks in the U.S.
- **European Patent Office (EPO):** Grants patents for European countries under the European Patent Convention.
- **Copyright Office:** Government agency responsible for administering copyright laws and protecting creators' rights.

UNIT – 1

Cyber Laws refer to the legal principles and regulations governing the use of the internet, digital communication, and information technology. These laws address issues such as cybercrimes, data protection, digital contracts, electronic transactions, and intellectual property rights in the digital realm. As technology continues to evolve, cyber laws are essential to maintain order, protect users, and ensure that digital activities adhere to legal and ethical standards.

Cyber Law: National and International Perspective

National Perspective

1. **Legal Framework in India:**
    - **Information Technology Act, 2000 (IT Act):** The primary legislation governing cyber laws in India. It addresses issues like cybercrime, electronic commerce, and data protection. The IT Act provides legal recognition to electronic records and digital signatures, thus facilitating electronic transactions.
    - **Indian Penal Code (IPC) Amendments:** The IPC includes provisions for cybercrimes like hacking, identity theft, and cyberstalking. For instance, Section 66 of the IT Act deals with hacking, while Section 67 covers the publication of obscene material online.
    - **Data Protection Bill:** India is working towards implementing a comprehensive data protection law to safeguard personal data and regulate its processing. The draft bill outlines provisions for data localization, consent requirements, and the establishment of a Data Protection Authority.
2. **Enforcement and Regulatory Bodies:**
    - **CERT-In (Indian Computer Emergency Response Team):** A national agency responsible for handling cybersecurity incidents and coordinating responses.
    - **National Cyber Security Policy:** A framework to protect India's critical information infrastructure and promote a secure cyber environment.

International Perspective

1. **International Treaties and Conventions:**
    - **Budapest Convention on Cybercrime:** The first international treaty aimed at harmonizing national laws on cybercrime, improving investigative techniques, and increasing cooperation among countries. While India is not a signatory, the Convention sets a benchmark for international cooperation.
    - **General Data Protection Regulation (GDPR):** A regulation in the European Union (EU) that governs data protection and privacy. It has a significant impact on global businesses, including Indian companies, due to its extraterritorial scope.
2. **Cross-Border Challenges:**
    - **Jurisdictional Issues:** Determining the applicable law and jurisdiction can be challenging in cybercrime cases that involve multiple countries. Differences in

legal systems and levels of cyber law enforcement complicate prosecution and extradition.

- **Data Sovereignty:** Issues related to data storage and transfer across borders. Many countries have laws requiring data generated within their borders to be stored domestically, affecting global companies.

Cyber Law in India: Legal Issues and Challenges

Cyber law in India faces several challenges in the present scenario. The country is experiencing a significant number of cyberattacks, ranking 11th globally in such incidents. Despite efforts like the Information Technology Act, 2000, India lags behind in adopting stringent cyber laws compared to other nations. The jurisdictional issues in cyberspace pose a complex problem due to the lack of territorial borders, making it challenging to determine where legal actions should be taken. Additionally, the rapid evolution of technology demands constant updates and refinements in cyber laws to effectively combat cybercrimes like phishing, malware attacks, and cyberbullying. To address these challenges, India needs to enhance its cyber legislation, increase the number of cybersecurity specialists, and strengthen its cybersecurity framework. India's digital landscape is rapidly evolving, and with it, the challenges related to cyber law. The primary legislation governing cyber activities in India is the **Information Technology Act, 2000** (IT Act), which was amended in 2008 to address new and emerging issues. However, several legal challenges persist.

Legal Issues

1. Cyber law in India faces challenges in securing organizational assets from threats, disruptions, and cybercrimes, emphasizing the importance of protecting information in the digital era.

2. Cyber law in India faces challenges in determining jurisdiction in cyberspace due to the lack of geographical borders and difficulty in identifying the location of individuals involved in online activities.

3. Cyber law in India faces challenges due to evolving cyber threats, immature regulations, and increasing demand for cybersecurity specialists, as highlighted in the study.

4. Cyber laws in India face challenges due to evolving technology and increasing cybercrimes. The paper suggests amending laws to address these challenges effectively.

5. Cyber law challenges in India include combating job fraud, phishing, cyberbullying, and child pornography. To address these, laws like the IT Act, IPC, NCFS, and various cybercrime prevention initiatives have been implemented.

Challenges

1. **Jurisdictional Issues:** The internet's borderless nature makes it difficult to determine jurisdiction in cases of cybercrime. Disputes often arise over which country's laws apply and where cases should be tried.

2. **Lack of Awareness and Expertise:** There is a lack of awareness among the public and law enforcement agencies about cyber laws and digital security. Additionally, the legal community often lacks the technical expertise to deal with complex cyber issues.

3. **Inadequate Infrastructure:** India's cybersecurity infrastructure and capabilities need significant improvement. There is a need for better technology, skilled professionals, and robust legal frameworks to tackle cyber threats effectively.

4. **Balancing Security and Privacy:** Striking a balance between national security and individual privacy is a major challenge. The government's efforts to monitor and regulate online content for security purposes often raise concerns about privacy and freedom of expression.

Cyber Crime refers to illegal activities conducted through digital means, particularly over the internet. It involves the use of computers, networks, and other digital devices to commit offenses such as fraud, theft, harassment, and unauthorized access. Cyber crimes can be broadly categorized into two main types: crimes where the computer is the target and crimes where the computer is the tool.

1. **Crimes Where the Computer is the Target:** These crimes involve attacking computer systems to steal, modify, or destroy data. Examples include hacking, distributed denial-of-service (DDoS) attacks, and malware distribution.

2. **Crimes Where the Computer is the Tool:** In these crimes, computers or networks are used to facilitate other illegal activities. Examples include identity theft, cyberstalking, phishing, and online fraud.

Introduction to Cyber Crime

The rise of the internet and digital technologies has transformed the way people communicate, conduct business, and access information. However, this digital transformation has also led to an increase in cyber crimes. The anonymity and global reach of the internet make it an attractive medium for criminals, enabling them to operate across borders and target victims worldwide. Cyber crimes can have severe consequences, including financial losses, reputational damage, and threats to personal and national security.

Key Factors Contributing to Cyber Crime:

- **Anonymity:** The ability to operate anonymously online makes it easier for criminals to commit cyber crimes without revealing their identities.
- **Global Reach:** The internet's borderless nature allows criminals to target individuals and organizations across the globe, complicating law enforcement efforts.
- **Technological Advancements:** Rapid advancements in technology provide new tools and methods for committing cyber crimes, making it challenging for law enforcement to keep up.
- **Lack of Awareness:** Many individuals and organizations lack awareness of cybersecurity practices, making them vulnerable to cyber attacks.

Cyber Crime and Information Security -

Information Security (InfoSec) is the practice of protecting information systems from unauthorized access, disclosure, modification, and destruction. It encompasses a set of strategies and measures designed to ensure the confidentiality, integrity, and availability (CIA) of data. Information security is crucial for safeguarding sensitive information and maintaining the trust and reputation of organizations.

Key Principles of Information Security

1. **Confidentiality:**

- Ensuring that information is accessible only to authorized individuals. Confidentiality protects sensitive data from unauthorized access and breaches.

2. **Integrity:**

- Ensuring the accuracy and completeness of data. Integrity involves protecting information from being altered or tampered with by unauthorized parties.

3. **Availability:**

- Ensuring that information and systems are accessible when needed. Availability involves protecting systems from disruptions, such as cyber attacks or natural disasters.

Components of Information Security

1. **Physical Security:** Protecting physical hardware and infrastructure, such as servers and data centers, from physical threats like theft, vandalism, and natural disasters.

2. **Technical Security:** Implementing technical measures, such as firewalls, encryption, and intrusion detection systems, to protect information systems from cyber threats.

3. **Administrative Security:** Establishing policies, procedures, and guidelines to manage and protect information assets. This includes employee training, access controls, and incident response planning.

Common Threats to Information Security

1. **Malware:** Malicious software designed to disrupt, damage, or gain unauthorized access to systems. Examples include viruses, worms, ransomware, and spyware.

2. **Phishing:** A social engineering attack in which attackers impersonate legitimate entities to trick individuals into revealing sensitive information, such as passwords and credit card numbers.

3. **Insider Threats:** Threats posed by individuals within an organization, such as employees or contractors, who may misuse their access to steal or damage information.

4. **Denial-of-Service (DoS) Attacks:** Attacks that disrupt the normal functioning of a website or service by overwhelming it with a flood of traffic, rendering it unavailable to legitimate users.

Importance of Information Security

Information security is essential for protecting the confidentiality, integrity, and availability of data. It helps organizations prevent data breaches, safeguard intellectual property, and maintain customer trust. With the increasing reliance on digital technologies, robust information security practices are vital for mitigating risks and ensuring the safe and secure operation of information systems.

Cybercrimes with Mobile and Wireless Devices

Cybercrimes involving mobile and wireless devices have become increasingly prevalent as smartphones and other mobile devices have become integral to daily life. These crimes exploit vulnerabilities in mobile devices, wireless networks, and associated software to carry out malicious activities, ranging from data theft to financial fraud. Mobile devices' portability, connectivity, and often inadequate security measures make them attractive targets for cybercriminals.

Key Types of Cybercrimes Involving Mobile and Wireless Devices

1. **Mobile Malware:**

- Mobile malware includes viruses, worms, spyware, and ransomware specifically designed to infect mobile devices. These malicious programs can steal sensitive information, monitor user activities, or lock users out of their devices until a ransom is paid. Mobile malware can spread through app stores, malicious websites, and phishing messages.

2. **Phishing and Smishing:**

- Phishing involves tricking individuals into providing personal information by impersonating legitimate organizations. When conducted via SMS, this is called "smishing." Cybercriminals send fake messages that appear to come from trusted entities, asking users to click on malicious links or provide sensitive information, such as passwords or credit card numbers.

3. **SIM Card Cloning and SIM Swapping:**

- SIM card cloning involves copying the data from one SIM card to another, allowing the attacker to make calls, send messages, and access accounts linked to the original number. SIM swapping, also known as SIM hijacking, occurs when attackers convince a mobile carrier to transfer a victim's phone number to a new SIM card, enabling them to bypass two-factor authentication (2FA) and access the victim's accounts.

4. **Wi-Fi Eavesdropping and Man-in-the-Middle (MitM) Attacks:**

- Wi-Fi eavesdropping occurs when attackers intercept data transmitted over unsecured wireless networks. In a MitM attack, the attacker secretly intercepts and potentially alters the communication between two parties. Mobile devices connected to public Wi-Fi networks are particularly vulnerable to these attacks, which can result in data theft or unauthorized access to sensitive information.

5. **Bluetooth Attacks:**

- Cybercriminals exploit vulnerabilities in Bluetooth technology to gain unauthorized access to mobile devices. Techniques such as "bluejacking," "bluesnarfing," and "bluebugging" can be used to send unsolicited messages, steal information, or take control of a device. These attacks typically occur when Bluetooth is left in discoverable mode.

6. **App-Based Threats:**

- Malicious apps can infiltrate mobile devices through app stores or third-party sources. These apps may contain hidden malware, spyware, or adware that collects personal information, tracks user activities, or displays unwanted ads. Even legitimate apps can pose risks if they request excessive permissions or have security vulnerabilities.

7. **Ransomware:**

- Ransomware attacks on mobile devices involve encrypting the device's data and demanding a ransom for the decryption key. These attacks can lock users out of their devices and data, causing significant disruption and financial loss. Mobile ransomware is often spread through malicious apps, phishing links, or compromised websites.

8. **Device Theft and Unauthorized Access:**

- Physical theft of mobile devices can lead to unauthorized access to sensitive information, especially if the device is not adequately secured with strong passwords or encryption. Lost or stolen devices can also be used for identity theft or financial fraud if they contain saved login credentials and payment information.

Preventive Measures and Best Practices -

To mitigate the risks associated with cybercrimes involving mobile and wireless devices, users and organizations should adopt the following best practices:

1. **Use Strong Authentication:** Implement strong passwords and biometric authentication methods (e.g., fingerprint or facial recognition) to secure mobile devices and sensitive apps.

2. **Enable Two-Factor Authentication (2FA):** Use 2FA for online accounts and services to add an extra layer of security, making it more difficult for attackers to gain unauthorized access.

3. **Install Security Software:** Use reputable antivirus and anti-malware software to detect and prevent threats. Regularly update the software to protect against the latest vulnerabilities.

4. **Be Cautious with Public Wi-Fi:** Avoid using public Wi-Fi networks for sensitive activities, such as online banking. Use a virtual private network (VPN) to encrypt data and protect against eavesdropping.

5. **Regularly Update Software:** Keep the operating system, apps, and firmware up to date to patch security vulnerabilities and protect against exploits.

6. **Be Wary of Phishing Attempts:** Do not click on suspicious links or provide personal information in response to unsolicited messages. Verify the legitimacy of the sender before taking action.

7. **Review App Permissions:** Be mindful of the permissions requested by apps and only grant access to necessary functions. Avoid downloading apps from untrusted sources.

8. **Encrypt Sensitive Data:** Use encryption to protect sensitive data stored on mobile devices, making it inaccessible to unauthorized users even if the device is compromised.

The Information Technology Act, 2000 (IT Act 2000)

The **Information Technology Act, 2000** (IT Act 2000) is a comprehensive legislation enacted by the Indian government to provide legal recognition to electronic transactions and facilitate electronic governance. It also aims to curb cybercrimes and ensure data security and privacy in the digital environment. The IT Act 2000 has been instrumental in shaping India's digital landscape and regulating the use of information technology.

Enact – 7th june 2000 (bill passed in both parliaments)

Notified – 17th October 2000, Introduced by "Pramod Mahajan" (Ministry of communication and information technology).

Applicable – to the whole of India

Overview of the Act

1. **Legal Recognition of Electronic Documents and Signatures:**

- The IT Act 2000 grants legal status to electronic documents and digital signatures, making them equivalent to physical documents and handwritten signatures. This facilitates the use of electronic contracts and documents in business and legal transactions.

2. **Regulation of Certifying Authorities:**

- The Act establishes a framework for the regulation of Certifying Authorities (CAs), which issue digital certificates used to authenticate electronic records and signatures. It defines the powers and duties of CAs and provides guidelines for the issuance, suspension, and revocation of digital certificates.

3. **Offenses and Penalties:**

- The IT Act 2000 defines various cybercrimes and prescribes penalties for offenses such as unauthorized access to computer systems, data theft, spreading viruses, and cyber terrorism. It also includes provisions for compensation in case of data breaches or misuse of personal information.

4. **Adjudication and Cyber Appellate Tribunal:**

- The Act provides for the appointment of adjudicating officers to handle disputes and violations related to cyber activities. It also establishes the Cyber Appellate Tribunal (CAT) to hear appeals against the decisions of adjudicating officers.

5. **Amendments and Updates:**

- The IT Act 2000 has been amended several times to address emerging challenges in the digital space. Notably, the **Information Technology (Amendment) Act, 2008**

introduced new provisions related to data protection, intermediary liability, and cyber terrorism.

Aims and Objectives

1. **Legal Recognition of Electronic Transactions:**

- The primary aim of the IT Act 2000 is to grant legal recognition to electronic records and digital signatures, thereby facilitating electronic transactions and commerce. This recognition helps in streamlining business processes and reduces the reliance on paper-based documentation.

2. **Facilitation of Electronic Governance:**

- The Act aims to promote electronic governance by enabling government services to be delivered electronically. This includes the legal recognition of electronic forms, records, and signatures, which can be used for official purposes.

3. **Prevention of Cybercrimes:**

- The IT Act 2000 seeks to prevent cybercrimes by defining offenses and prescribing penalties for various cyber activities, such as hacking, identity theft, and cyber terrorism. It also aims to create a secure environment for data storage and transmission.

4. **Promoting Secure Electronic Payments:**

- The Act provides a legal framework for electronic payments and fund transfers, encouraging the use of digital payment methods and enhancing the efficiency of financial transactions.

5. **Protection of Personal Data:**

- Although the IT Act 2000 does not comprehensively address data protection, it includes provisions to protect sensitive personal data and information from misuse.

Jurisdiction - Jurisdiction *is the power that a court of law or an official has to carry out legal judgments or to enforce laws.*

Jurisdiction under Information Technology Act, 2000

The Information Technology Act of 2000 is the foundational legislation in India governing cyberspace jurisdiction. This landmark act provides the legal framework for regulating electronic transactions, digital signatures, and the security and integrity of data within the country. Under this act, Indian authorities have the jurisdiction to investigate and prosecute cybercrimes occurring within its territorial boundaries, ensuring that the law applies to offences committed using digital means. However, challenges arise when dealing with cross-border cybercrimes, as the act's jurisdiction is limited to India. To address these concerns, the act's extraterritorial application has been discussed, especially in cases where Indian citizens are affected by cybercrimes outside the country. The Information Technology Act, as an essential

component of India's cyberspace jurisdiction, continues to evolve to meet the challenges and concerns of the digital age.

“Information Technology Act, 2000 in section 1(2) states that the Act extends to the whole of India and applies also to any offence or contravention thereunder committed outside India by any person.”

Further, “Section 75 states that subject to the provision of sub-section (2), the provision of this act shall also apply to any offence or contravention committed outside India by any person irrespective of his nationality. For the purpose of subsection (1), this act shall apply to an offence or contravention committed outside India by any person if the act or conduct constitutes an offence or contravention that involves a computer, computer system, or computer network located in India.”
This provides prescriptive cyberspace jurisdiction in India, and any act committed violative of this Act in India by a resident, or a non-resident will be punishable.
In India, Information Technology Act, 2000 does govern cyberspace yet there is no provision relating to the territorial jurisdiction and hence it is the current requirement from the legislators to incorporate provisions relating to extra-territorial jurisdiction in the Act.
Cyber law’s jurisdiction depends on the kind of cybercrime and the location from which it has been done.
At the end of the 20th century and the beginning of the 21st century, the use of computers and mobile phones saw a significant rise. Later, with its increasing utility, the rise of the internet began in the 1990s. In the last 15-16 years, the role of social media, online payments, education, gaming, communication, movies, and search engines have eventually become an essential part of everybody’s day-to-day life, and so did the misuse of it have increased. The real reason behind this is the lack of stringent laws, awareness, lacunas in the safety and privacy of a user and etc.
Criminal activity on the web (internet) is termed cybercrime. Cybercrime is prevented and protected by Cyber laws. The non-presence of physical boundaries on the internet and the non-effective security of the data of the user is one of the main reasons for cybercrime.
With the increase in the number of internet users and free browsing content from all over the world, it is easier for a person to get trapped in cybercrime by a person(hacker, internet stalker, cyber-terrorist, scammer, and many others) in a different country. For instance, a person might commit online fraud by claiming to sell some item from a particular country to a person situated in a different country and taking payment online but not sending the item specified. He indulged in this activity with other customers of different countries, and then a question of cyber jurisdiction arises as to where the complaint will be filed.

Jurisdiction gives power to the appropriate court to hear a case and declare a judgment. In cybercrime instances, the victim and the accused are generally from different countries, and hence deciding which cyber jurisdiction will prevail is conflicting. The internet as stated earlier has no boundaries; thus, no specific jurisdiction in cyberspace can be titled over its use. A user is free to access whatever he wishes to and from wherever he wishes to. Till the time a user’s online activity is legal and not violative of any law, till then there is no issue. However, when such actions become illegal and criminal, jurisdiction has a crucial role to play. For example, if a user commits a robbery in country ‘A’ while sitting in country ‘B’ from the server of the country ‘C,’ then which country’s jurisdiction will apply needs to be answered. In this case, the transaction might have been done virtually, yet the people are present physically in their respective countries governed by their laws and the court generally decides the cyber jurisdiction of the country where the crime has been actually committed.

In cyberspace, there are generally three parties involved in a transaction: the user, the server host, and the person with whom the transaction is taking place, with the need to be put within one cyberspace jurisdiction.[2] All three parties in this illustration belong to three different countries, now the laws of 'A,' 'B' or 'C' will be prevalent or not, or even municipal laws will be applicable or international laws the issues of jurisdiction in cyberspace. The extent of a court's competency to hear a cross-border matter and apply domestic state laws is another issue.

- **Prescriptive Jurisdiction** – This type of jurisdiction enables a country to impose laws, particularly for a person's activity, status, circumstances, or choice. This jurisdiction is unlimited. Hence, a country can enact any law, or legislation on any matter, even where the person's nationality is different, or the act happened at a different place. However, International law prevents any state from legislating any such law contrary to other countries interests.
- **Territorial Jurisdiction** - The IT Act 2000 has extraterritorial applicability, meaning that it applies to offenses committed outside India if the act or conduct constituting the offense involves a computer, computer system, or computer network located in India. This provision ensures that foreign nationals can be held accountable for cybercrimes affecting Indian citizens or systems.
- **Adjudication and Dispute Resolution -** The Act designates adjudicating officers to handle disputes related to electronic transactions and cyber offenses. These officers have the authority to impose penalties and award compensation. Additionally, the Cyber Appellate Tribunal serves as an appellate body for decisions made by adjudicating officers.

Electronic Governance *- Electronic governance or e-governance is a system where the government functions with Information and Communications Technology (ICT). All provision of government services, exchange of information, existing document integration and transactions are done through an electronic medium. E-governance in India has been adopted with the aim of being SMART. SMART is an acronym that stands for a government that is 'Simple', 'Moral', 'Accountable', 'Responsible', and 'Transparent'. The significance of Smart Governance is increasingly acknowledged as an essential component of smart cities, fostering a robust connection between governments and their citizens.*

In the Indian context, SMART is an acronym that stands for governance, which is 'Simple', 'Moral', 'Accountable', 'Responsible', and 'Transparent'.

- "S" stands for simplicity, indicating the simplification of governmental rules, regulations, and processes through the utilisation of Information and Communication Technologies (ICTs), fostering a user-friendly government.
- "M" represents morality, signifying the emergence of a new ethical value system within the political and administrative machinery. Technological interventions enhance the efficiency of anti-corruption agencies, police, judiciary, and other institutions.
- "A" denotes accountability, which entails the design, development, and implementation of effective Management Information Systems and performance measurement mechanisms to ensure the accountability of public service functionaries.
- "R" stands for responsiveness, emphasising the streamlining of processes to expedite service delivery and enhance the system's responsiveness to citizen needs.
- "T" signifies transparency, encompassing the dissemination of government information to the public domain and the promotion of transparent processes and functions. This

transparency fosters equity and upholds the rule of law in the responses of administrative agencies.

Fundamentally, e-Government projects would stand on four key pillars – People, Process, Technology and Resource.

1. PEOPLE: As e-government projects are rolled out across the country people within and outside the government will play an increasingly important role in ensuring the success of these projects. The scale of transformation is huge and enormous resources not only in terms of money but also the expertise, skills and commitment of the people will be required.
2. PROCESS: E-Government is not just about the automation of manual records and existing processes, with all their inefficiencies. Rather, it is about transforming government processes and creating new relationships between the government and its citizens and businesses. Hence, a fresh set of process parameters and related workflow should be created, without creating unmanageable and chaotic changes, to maintain the consistency and sustainability of the process.
3. TECHNOLOGY: The Technology Challenges relate to lack of overall architecture and a road map for e-Government, lack of standards, poor IT Infrastructure, especially the poor communication networks, and, above all, adoption of the hardware approach rather than service-approach in the design and implementation of e-Gov projects. These challenges, if not addressed adequately and in time, result in an ad-hoc approach to e-Gov implementation. A few projects get implemented in isolation with big questions on their sustainability and scalability.
4. RESOURCES: New technologies demand new types of implementation models. Adopting conventional procurement methods would not take us far on the path of e-government. In the conventional approach, the project ownership lies with the public sector itself along with the responsibility for funding it and bearing the entire risk.

Kinds of Interactions in e-Governance –

There are 4 types of interactions that can happen in e-governance.

1. **G2C (Government to Citizens)** - This interaction happens between the government and the citizens. It enables the citizens to access a wide variety of public services efficiently. The electronic process makes it more accessible for everyone. The primary aim here was to make e-governance super citizen-friendly.

2. G2B (Government to Business) - This form of interaction allows the business community to contact the government through e-governance tools. The main objective behind its inception was to avoid red-tapism, which will help and reduce the usage of resources and save time as well. This would also help facilitate a more transparent environment for businesses that deal with the government. Licensing, permits, revenue collection and procurement are aided by such G2B initiatives.

3. **G2G (Government to Government)** - This type of interaction facilitates smooth communication between different government bodies, whether it's within departments and agencies or between different levels of government (e.g., central and state governments or between states). The main objective is to enhance efficiency, performance, and overall output.

4. **G2E (Government to Employees) -** This kind of interaction involves communication between the government and its employees. Utilising ICT tools streamlines these interactions, making them quicker and more efficient, consequently boosting employee satisfaction levels.

There have been multiple plans and schemes under e-governance in India. Here is a brief list of these initiatives.

National Initiatives

- **Establishment of Task Force and Ministry**: India laid the foundation for e-governance with the establishment of a National Task Force on Information Technology and Software Development in 1998. This initiative was followed by the creation of the Ministry of Information Technology in 1999, which was dedicated to spearheading e-governance efforts at the central level.
- **Formulation of Agenda and Enactment of IT Act**: In 2000, a 12-point agenda was formulated for the implementation of e-Governance across central ministries and departments. The same year witnessed the enactment of the Information Technology Act, providing a legal framework to support e-Governance endeavors, with subsequent amendments in 2008.
- **National Conference and NISG Establishment**: The first National Conference of States' IT Ministers convened in 2000 aimed at devising a Common Action Plan to advance IT adoption nationwide. Additionally, the establishment of the National Institute for Smart Government (NISG) further bolstered e-Governance capabilities.

Advantages of e-Governance

- Faster communication through the use of phones and the internet, as it decreases the time taken for communication.
- Paper-based communications require heavy expenditure. It needs a lot of stationary, printers, labour, etc. The cost has been reduced with the use of the internet and phones. Moreover, time and environment are also safe due to their use.
- In earlier times, people faced issues due to physical constraints in reaching out to Government officials. Sometimes because of the ignorance of the officials and at other times due to long queues. But now it has become easy. e-Government is convenient as it provides services according to the schedule and venue of the people.
- e-governance has increased the access of information to the people.
- It also results in improved customer service. GDC (Government Data Centers) are the prominent component of ICT infrastructure for supporting e-governance initiatives.

Digital India **is a comprehensive program initiated by the Ministry of Electronics and Information Technology (MeitY) aimed at preparing India for a knowledge-based transformation. It integrates a multitude of ideas and initiatives under a unified vision to propel the nation towards digital empowerment and inclusive growth.**

Various Initiatives

- **MyGov** is a platform that facilitates citizen-government interaction and participation in governance through various activities such as discussions, polls, blogs, etc.
- **DigiLocker**: An online platform enabling citizens to store and share documents electronically and securely with service providers.
- **E-Hospital-Online Registration Framework (ORF):** This framework facilitates online appointments with government hospitals and streamlines patient care and medical record management.
- **National Scholarships Portal (NSP):** A centralized platform for scholarship application and disbursement to students under various schemes.
- **DARPAN**: An online monitoring tool for analysing the implementation of state projects and presenting real-time data on key performance indicators.
- **PRAGATI (Pro-Active Governance And Timely Implementation):** A system aimed at ensuring proactive governance, transparency, and accountability in project implementation.
- **Common Services Centres 2.0 (CSC 2.0):** ICT-enabled kiosks provide government and private services in rural areas, enhancing citizens' digital access.
- **Mobile Seva**: Delivering government services to citizens through mobile phones and tablets, increasing accessibility and convenience.
- **Jeevan Pramaan**: Aadhaar-based biometric authentication system for pensioners, ensuring the authenticity of digital life certificates.

ELECTRONICS EVIDENCE –

Electronic evidence refers to any information or data stored or transmitted in digital form that can be used as evidence in a legal proceeding. This type of evidence can be found on computers, smartphones, servers, and other electronic devices, and it includes a wide variety of digital content, such as emails, text messages, social media posts, digital documents, audio and video files, and more.

Types of Electronic Evidence:

1. **Emails:** Communications exchanged via email, which can show correspondence, agreements, or other relevant information.
2. **Text Messages and Chats:** Communications via SMS, WhatsApp, Facebook Messenger, and other messaging platforms.
3. **Digital Documents:** Files like PDFs, Word documents, spreadsheets, which might contain contracts, agreements, or other important information.
4. **Social Media Posts:** Content shared on platforms like Facebook, Twitter, Instagram, which may be relevant to proving or disproving claims.
5. **Metadata:** Information about data, such as the time a document was created or modified, the location from which it was sent, etc.
6. **Audio and Video Files:** Recordings that capture conversations, events, or other relevant interactions.
7. **Logs and Audit Trails:** Records from systems or software that document actions taken, such as login attempts, file access, or system changes.

Importance of Electronic Evidence:

- **Accuracy:** Electronic evidence is often more accurate and reliable than other forms of evidence because it is typically recorded and stored automatically.
- **Pervasiveness:** As digital communications and storage have become ubiquitous, electronic evidence is often critical in both civil and criminal cases.
- **Preservation:** Electronic evidence can be fragile and easily altered, so it must be collected and preserved correctly to maintain its integrity.

The Information Technology Act, 2000 (IT Act 2000) in India provides the legal framework for electronic governance by giving recognition to electronic records and digital signatures. It also addresses the admissibility of electronic evidence in legal proceedings, making it a crucial piece of legislation for cases involving digital information.

Key Provisions Related to Electronic Evidence under the IT Act 2000

1. **Section 4 - Legal Recognition of Electronic Records:**
    - This section states that any information or matter that is in the form of an electronic record and can be accessed or stored in a computer resource will be treated as equivalent to a written document under any law currently in force. This provision lays the foundation for the acceptance of electronic records as valid evidence in legal proceedings.
2. **Section 5 - Legal Recognition of Digital Signatures:**
    - This section equates digital signatures with handwritten signatures, provided they are affixed in a manner prescribed by the law. This is crucial for verifying the authenticity of electronic evidence that requires a signature.
3. **Section 65A - Admissibility of Electronic Records:**
    - This section was inserted by the Indian Evidence (Amendment) Act, 2000. It specifies that the contents of electronic records may be proved in accordance with the provisions of Section 65B of the Indian Evidence Act, 1872.
4. **Section 65B - Admissibility of Electronic Records as Evidence:**
    - Section 65B of the Indian Evidence Act, 1872, is often discussed alongside the IT Act as it deals explicitly with the admissibility of electronic evidence. It stipulates that electronic records can be admitted as evidence if they meet certain criteria, such as the requirement that the computer used to produce the document was functioning properly, and that the information was regularly fed into the system in the ordinary course of activities.
    - **Section 65B(4)** specifically requires that a certificate must be produced by a person occupying a responsible official position in relation to the operation of the relevant device or the management of the relevant activities, to certify the integrity of the electronic evidence.

Landmark Case: *Anvar P.V. v. P.K. Basheer (2014)*

In this landmark judgment, the Supreme Court of India held that electronic evidence, to be admissible, must comply with the conditions laid down under Section 65B of the Indian Evidence Act, 1872. The Court emphasized that electronic records must be accompanied by a certificate as required by Section 65B(4) to be considered valid evidence.

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