Professional Practices in ICT

1. Professionalism in ICT

Definition: Professionalism is the set of behaviors, attitudes, and ethical practices that demonstrate excellence, integrity, and responsibility in ICT.

Key Concepts:

- **Profession:** Vocation or occupation
- **Professional**: An expert who adheres to industry standards and ethical guidelines.
- **Professionalism in ICT**: Includes ethical coding, data protection, project management, and legal compliance.
- **Professional Ethics**: Moral principles governing ICT professionals (e.g., data privacy, transparency).
- **Regulatory Challenges in ICT**:
    - **Data Privacy** (GDPR, AI risks)
    - **Cybersecurity threats** (hacking, ransomware)
    - **AI Bias** (legal loopholes in discrimination laws)
    - **AI, Social Media**

2. Professional Bodies in ICT

Definition: A Professional Body is an organization that represents and regulates professionals in a specific field.

Functions of Professional Bodies:

- Setting Standards (Define skills and ethical guidelines)
- Certifications & Accreditation (e.g., IEEE, ACM)
- Professional Development (workshops, training programs, conferences)
- Advocacy & Policy Influence
- Networking & Professional Development

Major ICT Professional Bodies:

- **International**:
    - **ACM** (Computing science & ethics)
    - **IEEE Computer Society** (Technology standards)
    - **BCS** (UK Chartered IT professionals)
    - **ACS** (Australia's ICT regulatory body)
- **Sri Lanka ICT Bodies**:
    - **FITIS** – ICT industry representation
    - **SLASSCOM** – IT and Business Process Management (BPM)
    - **CSSL** – Professional association for ICT

3. Professional Communication & Teamwork

Definition: Professional communication is the structured exchange of information for workplace collaboration.

Types of Communication:

- Verbal Communication (Meetings, presentations)
- Non-verbal Communication (Body language, tone)
- Written Communication (Emails, reports, documentation)

Common Barriers to Communication:

- Technical Jargon
- Cultural Differences
- Remote Work Challenges
- Poor Listening skills

Teamwork & Group Dynamics:

- **Stages of Team Development**:
    1. **Forming** (Introduction phase)
    2. **Storming** (Conflicts arise)
    3. **Norming** (Roles established, work towards a common purpose)
    4. **Performing** (Efficient teamwork, task completion)

4. Leadership in ICT

Definition: Leadership is the ability to **influence, guide, and motivate** a team towards common goals.

Key Leadership Styles:

- **Democratic Leadership** (Team participation, collaboration)
- **Autocratic Leadership** (Strict control, fast decision-making)
- **Laissez-Faire Leadership** (Minimal supervision, trust-based)
- **Transformational Leadership** (Innovation-focused, Motivates team members)
- **Transactional Leadership** (Task-focused, reward-based)
- **Bureaucratic Leadership** (Sticks to the rules, Go by the book)
- **Servant Leadership** (Leading by Example, Less Agile)

5. Collaboration Tools in ICT

Definition: Collaboration tools are software that facilitate teamwork and communication in ICT projects.

Types of Collaboration Tools:

- **Communication** (Slack, Microsoft Teams, Google Meet, Zoom)
- **Project Management** (Jira, Trello, Asana, ClickUp, Monday)
- **File Sharing** (Google Drive, Dropbox, MS Sharepoint)
- **Version Control** (Git, GitHub, Bitbucket)

6. Organizations in ICT

Definition: An organization is a structured group of individuals working towards a common goal. Achieve specific missions or fulfill certain functions.

Types of Organizations:

- **For-Profit – Corporations/ Small and Medium** (Google, Apple)
- **Non-Profit – Charities/Foundations** (Red Cross, Oxfam)
- **Government - Agencies/Bodies** (NASA, ICTA Sri Lanka)
- **Hybrid** (Social enterprises like Good Market)

Common Organizational Structures:

- **Hierarchical** (Top-down management)
- **Flat** (Fewer management levels)
- **Matrix** (Employees report to multiple managers) -> **functional + project-based**
- **Functional** (specific functions or expertise areas -> finance, marketing, operations)
- **Divisional** (semi-autonomous divisions or units)
- **Network**

7. Intellectual Property (IP) in ICT

Definition: Intellectual Property (IP) refers to legally protected intangible creations of the human mind, giving creators exclusive rights over their innovations.

Types of Intellectual Property

Type	Definition	Examples	Validity
Patent	Protects new inventions & technology	iPhone Face ID, Tesla batteries	20 years
Copyright	Protects creative works	Software code, books, movies	Life + 70 years
Trademark	Protects brand names & logos	Nike Swoosh, Apple logo	Renewable every 10 years
Industrial Design	Protects product appearance	Coca-Cola bottle, car designs	10-15 years
Geographical Indication	Protects region-based products	Ceylon Tea, Champagne	Indefinite
Trade Secret	Confidential business info	KFC recipe, Google algorithm	No expiry

8. Internet Issues, Privacy & Data Protection

Definition: Internet privacy ensures control over personal data shared online.

Key Concerns:

- **Data Collection & Surveillance** (Facebook-Cambridge Analytica)
- **Cybersecurity Threats** (Hacking, phishing)
- **Regulations**:
    - **GDPR (EU)** – User data rights
    - **CCPA (USA)** – Consumer privacy law
    - **Sri Lanka's PDPA (2022)** – Local data protection law