### **What is a Profession?**

A profession is a type of job that requires special education, training, and skills. It’s not just any job; it's a career where you need to be qualified and follow a certain set of rules and standards. Professions often require continuous learning to stay updated with new developments in the field.

### **Professional Bodies**

Professional bodies are organizations that oversee specific jobs or professions. They create and enforce rules and standards to ensure that people in those professions work at a high level of quality and integrity. These bodies also protect the interests of professionals by providing resources, support, and a sense of community.

#### **Examples of Professional Bodies:**

**In Pakistan:**

* **Pakistan Engineering Council (PEC)**: Regulates engineers and ensures they meet required standards.
* **Pakistan Medical and Dental Council (PMDC)**: Oversees doctors and dentists to ensure they provide quality care.
* **Institute of Chartered Accountants of Pakistan (ICAP)**: Sets standards for accountants and regulates financial practices.
* **Pakistan Bar Council (PBC)**: Regulates lawyers and ensures they adhere to legal standards.

#### **Characteristics of Professional Bodies:**

* **Set of Rules and Standards:** Professional bodies set guidelines on how professionals should behave and perform their duties.
* **Shared Interests:** Members of professional bodies usually share common goals and interests, like maintaining high standards in their profession.
* **Oversight of Specific Jobs:** They monitor and regulate specific professions to ensure that only qualified individuals practice them.

### **Example: British Computer Society (BCS)**

The British Computer Society (BCS) is a professional body for those in the field of IT and computing. It was established in 1957 to promote the study and practice of computing. BCS ensures that professionals in IT adhere to high standards of conduct and competence.

* **Standards of Experience and Education:** BCS sets the minimum qualifications and experience required to become a recognized IT professional.
* **Reservation of Title**: Certain titles, like "Chartered IT Professional," are reserved for those who meet BCS’s standards.
* **Reservation of Function**: BCS might also determine which tasks or functions can only be performed by certified professionals.

(**Reservation of Title** means that only people with special qualifications can use certain job titles. For example, only someone who has completed the required education and licensing can call themselves a "Doctor" or "Engineer."

**Reservation of Function** means only qualified people are allowed to do specific tasks in their job. For example, only a licensed architect can approve building designs to make sure they are safe.)

### **Principles of Engineering** (Within the budget & time frame)

In engineering, professionals are expected to complete their work within a specified **budget and time frame.** This principle ensures that projects are cost-effective and timely, which is crucial for maintaining trust and efficiency in engineering practices.

### **Why is the Registration of Software Engineers (SE) Necessary?**

**Registration of software engineers** is important because it ensures that only qualified individuals are responsible for designing and maintaining software systems. This is crucial for:

* **Health and Safety Measures:** Ensuring that software systems are safe, reliable, and free from critical errors.
* **Maintaining Standards:** Registered engineers are expected to adhere to certain standards, which helps maintain the quality and trustworthiness of the profession.

### **Engineer Status in the UK**

**In the UK,** engineers can achieve different levels of professional recognition, such as "Incorporated Engineer (IEng)" or "Chartered Engineer (CEng)." These titles are awarded by professional bodies and signify a high level of competence and commitment to the engineering profession. This status is respected and often required for senior positions in engineering.

**In the USA,** you can’t call yourself an engineer unless you are officially registered with the state. A company can't use "engineering" in its name unless it has a registered engineer. Engineering courses must be mostly taught by registered engineers. Also, engineering work must be done under the guidance of a registered engineer**.**

**Software Engineers Registration Difficulty:**

It’s difficult to create a standard license for software engineers because their work is very different—some write code, while others design systems. The industry changes quickly with new technologies, making it hard for licenses to keep up. Instead of licenses, companies focus on education, certifications (like Microsoft or Oracle), and work experience. Since software is used worldwide, creating one license for everyone is challenging. Also, the field values creativity and innovation, and strict rules could limit new ideas

**NCEAC (National Computing Education Accreditation Council):**The Higher Education Commission set up NCEAC to manage and check the quality of computing degree programs at universities and colleges. NCEAC gives ratings to institutions, monitors their standards, and ensures they meet the required guidelines.

**PEC (Pakistan Engineering Council):**PEC is a federal organization that oversees and regulates engineers and engineering education in Pakistan. It promotes engineering, gives licenses, and registers engineers. PEC also accredits engineering programs across the country to ensure quality education.

Accreditation is the process of officially recognizing that an institution or program meets certain quality standards.

**Lesson Goals**:

* Learn about professional computing bodies worldwide.
* Understand BCS (British Computer Society) membership structure.
* Know the activities of professional bodies.
* Understand member obligations and BCS Code of Conduct.
* Learn about services professional bodies offer to help members meet obligations.

**Professional Bodies**: Professional bodies help establish and maintain professional standards. They also provide services to members and the public.

**Development of Professional Bodies in Computing**:

* **IEEE-CS** (1946): Engineering and computing society.
* **ACM** (1947): Global computing association.
* **BCS** (1957): UK equivalent of ACM, offers professional qualifications.
* Expansion in the 1960s led to societies like the **Australian Computer Society (1966)**, **Computer Society of India (1965)**, and **Pakistan Computer Association (2006)**.

**Professional Conduct**: Professional bodies expect members to follow a code of conduct (ethical behavior) and a code of practice (best practices in the profession).

**BCS Code of Conduct Sections**:

1. **The Public Interest**: Act for the good of society.
2. **Duty to Authority**: Follow the rules of your organization.
3. **Duty to Profession**: Uphold professional standards.
4. **Professional Competence and Integrity**: Maintain skills and act ethically.

**Professional Conduct vs Practice**:

* **Conduct**: How you behave ethically.
* **Practice**: How you perform tasks to the best standards.

**ISO/IEC 27002:2013**: An international standard for information security management, outlining best practices for protecting data.

**ACM Code of Ethics**: Guidelines for computing professionals covering integrity, confidentiality, competence, and social responsibility.

**BCS Code of Conduct**: Sets professional standards for BCS members regardless of their role, location, or company. It applies to individuals, not the organization they work for.

### **Public Interest**

As a professional, it’s important to prioritize public health, safety, and the well-being of others. You should respect everyone’s rights and treat all people fairly, without discrimination based on gender, race, religion, age, or other factors. Additionally, promote equal access to technology so everyone can benefit from it.

### **Duty to Relevant Authority**

You should do your job carefully and follow the rules set by your employer. Avoid any situations that might create a conflict of interest. Always take responsibility for your work and for those you supervise. Keep private information safe and do not misuse it for personal gain.

### **Duty to the Profession**

Maintaining a good reputation for your profession is important. Avoid actions that harm its image and help improve standards by contributing to their development. Respect other professionals and support your colleagues as they learn and grow.

### **Professional Competence and Integrity**

Only take on work that you are trained for. Keep learning to stay updated with the latest technology and laws. Respect other viewpoints, accept feedback, and be honest in your work. Avoid causing harm to others and never offer or accept bribes.

### **Status of Professional Codes of Conduct**

Some rules in professional codes are clear, but others can be unclear. Breaking clear rules, like not reporting a crime or big money problems, can lead to discipline.

### **Education**

BCS helps with education by offering professional exams and accrediting university programs. They also approve courses and create qualifications for different levels. BCS certifications are recognized in Europe and offer chances for both IT professionals and students from non-IT backgrounds.

### **Continuing Professional Development (CPD)**

BCS helps professionals update their skills by offering resources and tools to track learning. Members also get a monthly magazine, *The Computer Bulletin*, to stay updated on the latest IT developments.

### **Industry CPD**

BCS provides tools like SFIAplus and MATRIX to help companies with employee training. They also offer a service that checks if a company’s training meets industry standards, benefiting both the business and its employees.

### **Advancement of Knowledge**

BCS publishes *The Computer Journal* to share global research. Other groups like IEEE and ACM also release journals on new IT trends. BCS specialist groups organize events and create helpful resources like books and software to keep professionals informed.