Virtual University	CS625 / CS525 Professional Practices SHORT NOTES PREPARED BY ALMAS AFZAL	 Learn with ALMAS AFZAL
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Week 1
The Profession

- Introduction
- Professionalism
- Traits of a Professional
- Applying Professionalism in Daily Life

1. Introduction

Profession: A job that needs special training and a degree (e.g., Doctor, Engineer, Teacher).

Professional: A person who does a professional job, follows high standards, and has the right skills to do their work.

Professional Responsibilities

In the IT world, being a professional is not just about writing code. It includes:

- Managing networks and making software.
- Keeping hardware and software updated.

Important Point: An engineer must have "Professional Knowledge" AND "Professional Behavior."

2. Professionalism:

It is not just about what you know; it is a way of thinking and living.

Traits of a Profession

A job is called a "Profession" if it has these 4 things:

1. **Special Skills:** It needs learning and practice.
2. **Helping Society:** The goal is to help people, not just earn money.

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3. **High Quality:** Always trying to do the best work.
4. **Giving Back:** Sharing your knowledge to help the community.

A Professional Behaves Ethically

Ethics is more than just following the law. It is about doing what is **"right."**

- **Breaking the Law:** If you break the law, you can go to **jail** or pay a **fine**.
- **Breaking a Moral:** If you do something bad, people will not **respect** you (it ruins your reputation).
- **Breaking an Ethic:** If you do the wrong thing, you will feel bad in your **heart and mind** (it ruins your conscience).
- **Main Point:** A person can break all three (Law, Morals, and Ethics) at the same time.

3. Traits of a Professional

Being a professional means people expect these 10 good qualities from you:

1. **Seriousness:** Take your work seriously. Do not treat it like a joke.
2. **Wanting to do Better:** Always try to improve your work every day.
3. **Handling Problems:** When something goes wrong suddenly, stay calm and find a solution.
4. **Communication Skills:** Speak and write in a way that is **clear**, **short**, and **confident**.
5. **Enthusiasm:** Show excitement and a positive attitude toward your work.
6. **Helpfulness:** Always be ready to help your teammates.
7. **Taking Initiative:** Don't wait for someone to tell you what to do. Start the work yourself.
8. **Cool Under Pressure:** Stay calm and happy even when you have too much work or stress.
9. **Stay Focused:** Keep your eyes on your goal and do not get distracted.
10. **Don't Follow, Lead:** Do not just follow others. Try to show the way and be a leader.

4. Applying Professionalism in Real Life

Scenario # 1

You are the owner of a software engineering company. Your employees (engineers) want you to pay for them to attend training.
How would you respond in a way that is legal, moral, and ethical?

Answer: "I support your request for training because it helps you improve and helps our company grow. To be fair and professional, we will pay for the course, but we will have a clear agreement: the skills you learn must be used to help our current projects, and you will share your new knowledge with the rest of the team."

Explanation:

- **Legal:** You create a clear, written agreement or contract before paying for the training.
- **Moral:** You show that you care about your employees' future and their "wanting to do better".
- **Ethical:** You are being fair to everyone and "giving back" to your staff to make the profession stronger.

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Scenario # 2

You are the owner of a software engineering company. Your employees (engineers) want you to let them do pro bono work for a local non-profit organization on company time.
How would you respond in a way that is legal, moral, and ethical?

Answer: "I support this because helping our community is a great way of **giving back to society**. We will allow a set number of hours per month for this project to make sure our own company's work stays **focused** and on time. This way, we stay helpful to others while remaining professional and serious about our business goals".

Explanation:

- **Legal:** You clearly define the hours allowed so it does not hurt the company's contracts or payroll.
- **Moral:** You show a **society-centric motivation**, proving that your company cares about more than just money.
- **Ethical:** You are balancing your responsibility to your clients with your responsibility to the public.

Scenario # 3

You are a software engineer at a company where management routinely encourages you and your colleagues to use pirated software.
How would you respond in a way that is legal, moral, and ethical?

Answer: "I cannot use or install pirated software because it goes against our **professional code of ethics**. Using illegal software puts the company at **legal risk** and hurts our **reputation** if we are caught. I suggest we look for free **Open Source** alternatives or buy the proper licenses so we can work safely and honestly."

Explanation:

- **Legal:** You are protecting the company from lawsuits and fines for using stolen software.
- **Moral:** You are showing **Integrity** (honesty) by refusing to steal someone else's work.
- **Ethical:** As a professional, you must follow the rule of "Giving back to society". Stealing software hurts the developers who made it.

Week 2
Professional Ethics & Code of Ethics

- Introduction
- IEEE Code of Ethics
- ACM Code of Ethics
- Different Scenarios
- Cyber Ethics

1. Introduction

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- **Law:** These are strict rules for everyone in society. They tell you what you **must** or **must not** do.
- **Moral Values:** These are the fixed habits or customs of a specific group of people.
- **Ethics:** These are rules that define "socially acceptable" behavior (what society thinks is right or wrong).

Code of Ethics

A **Code of Ethics** is a set of rules that tells professionals how to behave honestly and responsibly. It acts as a guide to help you decide what is "right" and "wrong" at work.

Code of Ethics' Goals

- Intellectual property
- Privacy
- Confidentiality
- Professional quality
- Fairness or discrimination
- Liability
- Software risks
- Conflicts of interest
- Unauthorized access to computer systems

2. IEEE Code of Ethics

The IEEE Code is divided into different areas to show who a software engineer is responsible to.

1. Actions (Who you work for)

- **Public:** Your first duty is to the people. Always do what is best for the safety and interest of the general public.
- **Client and Employer:** Be loyal to the person or company who pays you. However, if they ask you to do something that hurts the public, always choose the **Public** interest first.

2. Products (The quality of your work)

- **Product:** Make sure your software and any changes you make are of the highest quality. Your work should meet professional standards and be safe to use.

3. Hierarchy (Judgment and Management)

- **Judgment:** Be honest and independent. Do not let others pressure you into making a bad or dishonest technical decision.
- **Management:** Managers must lead by example. They should encourage their team to follow ethical rules while developing or fixing software.

4. Peers (Your relationship with the profession)

- **Profession:** Act in a way that makes people respect software engineering. Help build a good reputation for your career field.

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- **Colleagues:** Be fair and helpful to the people you work with. Support your coworkers and treat them with respect.

5. Self (Your own growth)

- **Self:** Keep learning! Technology changes fast, so you must continue to study throughout your life. Also, always try to practice your job in an ethical way.

Principles of IEEE Code of Ethics

- Act in public interest
- Act in interest of clients and employers
- Produce quality products
- Maintain independent judgment
- Manage ethically
- Protect integrity of profession
- Support colleagues
- Pursue lifelong learning

3. ACM Code of Ethics (The Three Levels)

The ACM Code is broken down into three main sections:

A. General Moral Rules (For everyone)

- **Help Society:** Work to make life better for everyone.
- **Avoid Harm:** Don't build things that hurt people or their property.
- **Be Honest:** Never lie about what your software can do.
- **Be Fair:** Treat everyone equally; do not discriminate.
- **Respect Property:** Do not steal code or use pirated software.
- **Give Credit:** If you use someone else's idea, say so.
- **Respect Privacy:** Do not look at or share other people's private data.
- **Honor Secrets:** Keep company secrets safe.

B. Professional Responsibilities (For your daily work)

- **High Quality:** Do your best work in every project.
- **Be Competent:** Know your job well and keep your skills updated.
- **Follow Laws:** Know and respect the rules of your country.
- **Accept Reviews:** Allow others to check your work for mistakes.
- **Check Risks:** Tell the truth about the dangers or risks of a system.
- **Keep Promises:** Honor your contracts and agreements.
- **Teach the Public:** Help regular people understand how computers work.
- **No Trespassing:** Only use computer systems you are allowed to use.

C. Organization Leadership Rules (For managers and bosses)

- **Lead by Example:** Encourage your team to be socially responsible.
- **Better Work Life:** Design systems that make the office a better place to work.
- **Follow Rules:** Ensure only authorized people use the company's computers.

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- **Listen to Users:** Ask the people who will use the software what they need.
- **Protect Dignity:** Make sure your systems respect the users' feelings and rights.
- **Teach Others:** Give your team chances to learn about new technology.

4. Different Scenarios

Ethical decision making: Case 1

Ali is a database programmer

Large statistical program needed by his company.
Company programmers are encouraged to publicize their work

Ali has found himself stuck on a problem

He has persisted at this for several months.
His manager does not recognize complexity of problem.
She insists job be completed in the few days.

Ali remembers:

Co-worker had given him source listings of their current work.
He also has an early version of commercial software developed at another company

Ali studies these programs

Sees two areas of code which could be directly incorporated into his own program
He uses segments of code both from his coworker and from the commercial software

He does not tell anyone or mention it in the documentation.
He completes the project and turns it in a day ahead of time.
How does the Code of Ethics help us understand this case?

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Answer:

Applying the code: Case 1

Ali violated professional ethics in two major ways:

1. Failure to Give Credit (Plagiarism)

Even if you are allowed to look at a co-worker's code, using their logic or segments without mentioning them is dishonest.

- **The Rule:** You must honor property rights and give proper credit for intellectual property.
- **The Fix:** Even if Ali only "looked" at the code to get an idea, he should have mentioned in his documentation that the logic was inspired by his co-worker's work.

2. Illegal Use of Commercial Code (Copyright Violation)

Taking code from a commercial product is a serious legal and ethical offense.

- **The Rule:** Software engineers must respect copyrights and patents.
- **The Fix:** Ali should have checked if his company had a license or permission to use that specific code. Using it secretly is essentially stealing.

Conclusion:

Ali was under a lot of pressure from his manager, but pressure is never an excuse to steal code. By not giving credit and using copyrighted material, Ali put himself and his company at **legal risk**. True professional integrity means being honest about where your work comes from, even when you are in a hurry.

Ethical decision making: Case 2

- **The Problem:** Aisha is building a security system for a client. To save money, the client wants a **weak** system.
- **The Risk:** Aisha knows the data is very sensitive. Weak security means both employees and hackers could easily steal private information.
- **Aisha's Action:** she has already tried to explain the risks, but the client isn't listening.

Applying the Code: What Should Aisha Do?

This case is about **Privacy**, **Public Interest**, and **Professional Quality**.

1. The Client's Obligation

The company/client has a legal and moral duty to protect their employees' data. By choosing "cheap" over "safe," they are failing their own staff.

2. Aisha's First Duty: Education

According to the IEEE/ACM codes, Aisha must first try to **educate** the officials. She should show them:

- The exact risks of a data breach.
- The potential cost of a lawsuit if data is stolen (which is much higher than the cost of a good system).

3. The Ethical Choice

If the client still refuses, Aisha faces a tough choice:

- **The Contract:** She has a responsibility to "Honor contracts and assigned responsibilities."
- **The Ethics:** She has a higher responsibility to "Avoid harm" and "Respect privacy."

Ethical decision making: Case 3

- **The Problem:** A contractor is building a system for an employment agency to match people with jobs.
- **The Request:** The client asks for the system to show **White applicants** before non-white applicants, and **Male applicants** before female applicants.
- **The Goal:** The client is trying to use technology to practice "hidden" discrimination.

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Applying the Code: Why This is Wrong

This case highlights the issue of **Fairness or Discrimination** and **Public Interest**.

1. The Rule of Fairness

Both the IEEE and ACM codes state: *"Be fair and take action not to discriminate."* A professional must not participate in any project that treats people unfairly based on race, gender, religion, or age.

2. The Professional's First Step

The system designer should not simply follow orders. Instead, they must:

- **Identify the Problem:** Point out that this request is discriminatory and likely illegal in many countries.
- **Ask "Why?":** Ask the client why they want the results sorted this way. Sometimes, clients don't realize their request is unethical.

3. The Ethical "No"

If the client confirms they want to favor white males:

- **The Decision:** The computer professional **must refuse** to build the system as proposed.
- **The Reason:** Building this system would violate the "Public Interest" and the "Avoid Harm" principles. Creating a tool that helps someone break the law or treat people unfairly makes the developer responsible for that harm.

Ethical decision making: Case 4

- **The Problem:** A company made a new tax software (Version 1.0). The President **knew** it had bugs.
- **The Motive:** He wanted to be the "first to market" to make the most money (Market Share).
- **The Action:** They advertised the software as perfect but included a "disclaimer" (a legal note saying they aren't responsible for errors).
- **The Result:** Many users filed wrong tax returns and had to pay heavy **penalties/fines** to the government.

Applying the Code: Why the President was Wrong

This case highlights the issue of **Liability**, **Professional Quality**, and **Honesty**.

1. Failure of Quality

A professional must always "Strive to achieve the highest quality." By knowingly shipping a broken product just to make money, the President failed his professional duty.

2. Lack of Transparency (Honesty)

The ACM Code (Principle 2.5) says you must give **comprehensive evaluations** of a system, including its **risks**.

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- **The Error:** The company did not tell the users about the bugs. They treated their customers like "test subjects" without their permission.

3. The "Disclaimer" is Not a Shield

The President argued that "everyone knows Version 1.0 has bugs." However:

- **Legal Fact:** A disclaimer is only valid if the company acts in "Good Conscience" (honestly). Since they knew about the bugs and hid them, the disclaimer is legally weak.
- **Moral Fact:** You cannot hide behind a legal note when your product causes financial harm to others.

Week 3
The Structure of Organizations

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- Introduction
- Legal form of organization
- Types of Organizations
- Companies
- Management of an organization

1. Introduction

In a modern/civilized society, it is impossible to live without interacting with large organizations.

- **Examples:** Schools, Universities, Hospitals (Health Service), Government departments, and big Businesses.
- **Key Point:** Even though they do different things, most organizations look and act very similarly in how they are managed.

2. Legal form of organization

1. The Law and the "Individual"

Before understanding companies, we must understand how the law sees **you** (an individual). As a person, the law allows you to:

- **Sign Contracts:** (e.g., buying a house or starting a job).
- **Be Sued or Sued Someone:** (Legal disputes).
- **Be Tried for Crimes:** (Accountability for actions).
- **Have Duties:** (The government/Parliament gives you rules to follow).

2. What is "Incorporation"?

Normally, an organization is just a group of people. **Incorporation** is the magic trick that turns that group into a **single legal person**.

- **Meaning:** It comes from the word *Corpus* (Body).
- **The Process:** It gives the organization its own "Legal Existence."
- **The Result:** The company can now sign its own contracts and own property, separate from the owners.

Incorporated Organizations

A. Royal Charters

These are organizations created by the King or Queen. Usually, these are very old and prestigious professional groups.

- **Examples: IET** (Engineering and Technology)
    - **BCS** (British Computer Society)
    - **IMechE** (Mechanical Engineers)

B. Acts of Parliament

Sometimes, the government passes a specific law just to create one organization. This is usually for local government or public bodies.

- **Example:** A specific City Council (like **Ceredigion County Council**) is created because a law said it must exist.

C. Companies Act (Public or Private Companies)

This is the most common way. Most businesses (like a software house or a shop) are registered under the **Companies Act**.

- **Private Companies:** Owned by a few people (Ltd).
- **Public Companies:** Can sell shares to the general public (PLC).

3. Types of Commercial Organizations

- **Sole Trader**
    - Local Shop, Plumber

- **Partnership**
    - Doctors, Lawyers, Accountants

- **Limited Company**
    - Private or Public

1. Sole Trader (One Person Business)

This is the simplest form of business where **one person** owns and runs everything.

- **Examples:** A local grocery shop, a plumber, a freelance web developer, or a rickshaw driver.

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- **Key Feature:** There is no legal difference between the owner and the business. If the business owes money, the owner must pay it from their own pocket.
- **Advantage:** You are your own boss and keep all the profit.

2. Partnership (Shared Business)

This is when **two or more people** (usually up to 20) join together to run a business.

- **Examples:** Professional firms like Doctors (clinics), Lawyers, or Accountants.
- **Key Feature:** Partners share the work, the profits, and the risks. They usually sign a "Partnership Agreement" to decide how much money each person puts in.
- **Advantage:** More people means more skills and more investment money.

3. Limited Company (Incorporated Business)

This is a business that has its own **legal identity** (Incorporation). It is owned by "Shareholders."

A. Private Limited Company (Ltd)

- **Ownership:** Owned by a small group of people (like a family or friends).
- **Shares:** You cannot buy their shares on the stock market.
- **Example:** A local software house or a private travel agency.

B. Public Limited Company (PLC)

- **Ownership:** Owned by thousands of people.
- **Shares:** Anyone can buy or sell shares on the **Stock Exchange**.
- **Example:** Large giants like Google, Microsoft, or PTCL.

Company Constitution

Think of the **Constitution** as the "Rule Book" of the company. It tells the world what the company is allowed to do and how it must be run. It consists of two main documents:

- **Memorandum of Association:** This is the external document. It states the company's name, where the office is, and its main goals (what business it does).
- **Articles of Association:** This is the internal document. It sets the rules for how directors are chosen, how meetings are held, and how shares are managed.

- Rules of Share capital
- Transfer of Shares
- Meetings of Members
- Rules Governing Directors' Appointments
- Power of Directors
- Dividends and Reserves

Share Capital

A company needs money (Capital) to start and grow. It gets this money by selling "pieces" of the company called **Shares**.

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- **Shareholders:** People who buy these shares are the **owners** of the company.
- **Dividends:** When the company makes a profit, it shares a portion of that money with the shareholders. This payment is called a dividend.
- **Risk:** If the company fails, shareholders only lose the money they paid for their shares (Limited Liability).

Directors' Responsibilities

While shareholders own the company, the **Directors** are the ones who actually run it day-to-day. Because they handle other people's money, they have heavy legal duties:

- **Duty of Care:** They must act carefully and professionally, as a reasonable person would.
- **Fiduciary Duty (Trust):** They must act in the **best interest of the company**, not for their own personal gain.
- **Statutory Duties:** They must follow the laws (like the Companies Act), ensure taxes are paid, and keep honest financial records.
- **Accountability:** If a director is dishonest or extremely careless, they can be sued or even banned from being a director again.

4. Functional Units of An Organization

Almost every company, no matter its size, is divided into these **5** main groups to stay organized:

Function	Main Task
Production	Making the product.
Quality	Ensuring the product is good.
Marketing/Sales	Promoting and selling.
Finance	Managing the money.
R&D	Planning for the future.

Geographical Organization

Sometimes, a company grows so big that it cannot stay in one place. It organizes itself based on **where** it operates.

- **Definition:** This is when an organization operates in more than one country or region.
- **Why it happens:** Different countries have different tastes, laws, and languages.
- **Common Example:** Food and drink companies (like **Coca-Cola**, **McDonald's**, or **Nestlé**). They have different offices and factories in almost every country to suit the local market.

Centralization vs. Decentralization

This describes **where** the power to make decisions lies within an organization.

Feature	Centralized Organization	Decentralized Organization

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Decision Making	Decisions are made at the **Top/Center** (Head Office).	Decisions are made at the **Local/Department** level.
Control	High control by senior managers.	More freedom for branch or team managers.
Speed	Can be slow (waiting for approval from the top).	Faster (local managers can decide immediately).
Consistency	Very consistent; every branch follows the same rules.	Can vary; different branches might do things differently.

5. Management Roles

Every organization has different types of managers, each with a specific "mission."

A. Project Manager (The Task Master)

- **Goal:** To finish a project on time, within budget, and according to what the user needs.
- **Main Tasks:** Planning, monitoring progress, getting resources (money/people), and quality control.
- **Tools:** Bar charts (Gantt charts), Activity networks, and **Critical Path Analysis**.

B. Production Manager (The Efficiency Expert)

- **Goal:** To make sure the "making" process is smooth.
- **Main Tasks:** Focuses on **productivity** (speed), **efficiency** (low waste), and maintaining the **quality** of the product.

C. General or Corporate Manager (The Big Picture)

- **General Manager:** Looks after the organization as a whole, ensuring all departments work together.
- **Corporate Manager: Long-term Strategy:** They decide where the company should be in 5 or 10 years.
    - **Problem Solvers:** They monitor overall performance and step in to handle major crises that affect the whole company.

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Week 4
Anatomy of Software House

- Introduction
- The Company (Software House)
- Structure of Company
- Management of Staff
- Producing the budget
- Monitoring Financial Performance
- Long term Planning

- Conclusions

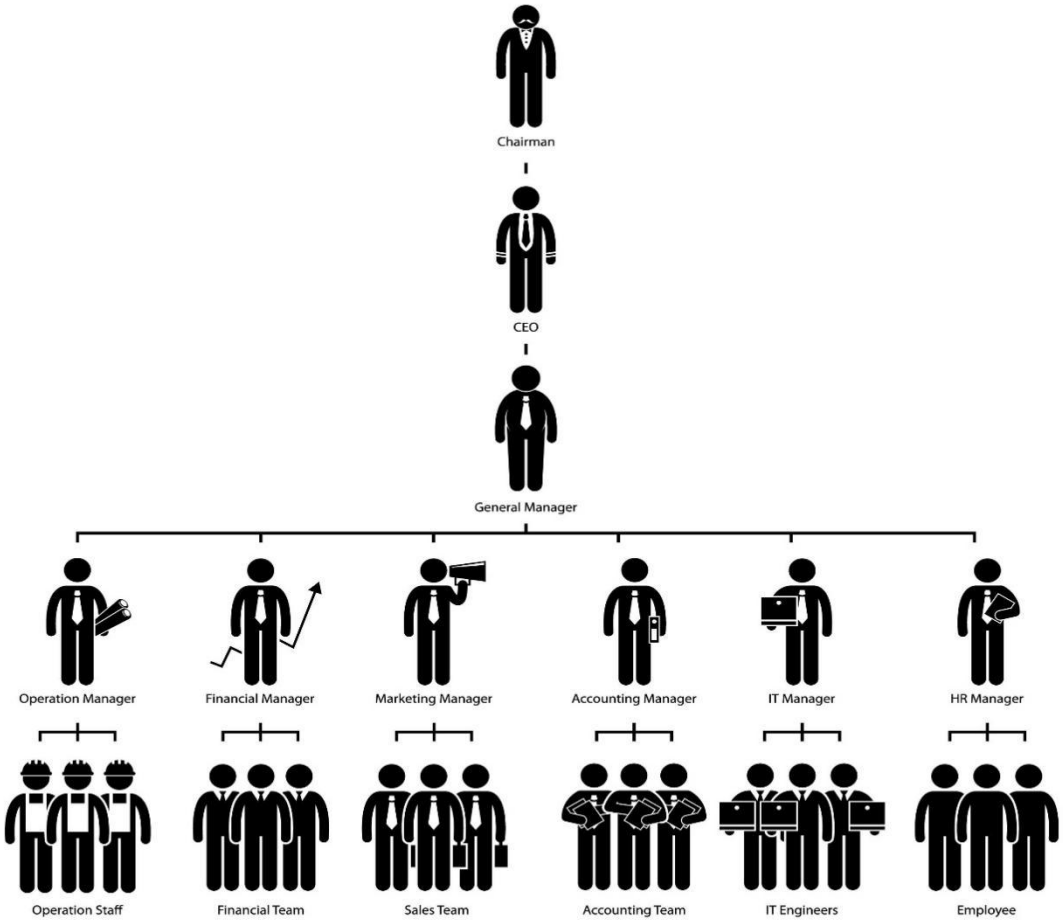
1. Introduction (The Company)

Syniad Software Ltd

This section introduces a "hypothetical" (example) company called **Syniad** to show how a real software house works.

- **Background**: Founded 10 years ago by four friends who are all on the Board of Directors.
- **What they do**: They make **bespoke software**, which means custom-made software specifically designed for a client's needs.
- **Quality**: They focus on very high-quality work.
- **Location**: Their main office is in London, with other offices in Manchester and the Netherlands.

2. Structure of Company



Operations Director

- **Main Goal**: Responsible for all activities that earn money (revenue) for the company.

- **Tasks**: Ensures projects are finished successfully and that there are enough workers (resources) to do the work.
- **Staff**: The personnel (HR) department reports to this director.

Technical Director

- **Main Goal**: Focuses on the "how" of the work—technology and quality.
- **Tasks**: Manages quality control, research and development (R&D), and technical training for staff.
- **Promotion**: Helps the company's image by having staff speak at technical conferences.

3. Management of Staff

Managing people is the most important part of a software house.

- **Sense of Belonging**: In theory, staff belong to a specific group with one manager.
- **The Reality**: In practice, staff often move between different groups depending on which project needs their specific skills.
- **Staff Appraisals**: This is a formal meeting to review an employee's work.
    - It records what the employee achieved.
    - It tells them exactly what they need to do to get a **promotion**.
    - It helps plan future training and career growth.

4. Financial Performance (Money Management)

A software house must monitor its budget carefully to stay in business.

- **Two Types of Staff**:
    1. **Revenue Earning**: Technical staff whose work is billed to clients.
    2. **Non-revenue Earning**: Support staff like HR or Admin who don't directly bill clients.
- **The Problems**: It is hard to predict the budget because of **random fluctuations** (unexpected changes) like hiring needs or failing to estimate the cost of a "Fixed Price" project correctly.
- **Project Costing**: The company checks every month if the money coming in (revenue) is more than the money going out (costs) for every single project.

5. Long-Term (Strategic) Planning

Successful companies don't just think about today; they plan for the future.

- **Goal 1**: Identify where the company wants to be in several years (long-term goals).
- **Goal 2**: Create a plan to fix problems that are stopping them from reaching those goals.
- **What they plan for**: Expanding to more countries, improving the company image, and managing their finances better.

Long Term Planning involves

- Expansion Plans
- Company Image
- Product mix (Fee based revenue vs. Package Software)

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- Finance (under-capitalization)

6. Conclusion

The example company, Syniad, is doing well, but it has reached a "turning point".

- **Going Global**: To keep growing, they need to become a **multinational** company.
- **Big Changes**: They can no longer survive as a small private company; they need to collaborate with others or change their business model to thrive in the future

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Week 5
Organizational Financial Practices

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- Introduction
- Need of Capital
- Sources of Funds
- Budgeting and Monitoring
- Working Capital & Cash Flow

1) Introduction

In a professional practice, managing money is just as important as the technical work (like coding). If a company doesn't manage its finances well, it cannot pay its staff or buy the tools it needs to grow.

2) The Need for Capital

Capital is the money a business needs to start and keep running. A software house needs capital for two main reasons:

- **Fixed Assets:** Buying "long-term" items like office buildings, computers, servers, and furniture.
- **Working Capital:** Money needed for day-to-day expenses, such as paying monthly salaries and electricity bills.

3) Sources of Funds

In professional practices like a software house, "Sources of Funds" refers to the different ways a company gets the money it needs to operate, grow, or buy equipment. These can be grouped into three main categories:

1. Grants

- **Simple Definition:** This is "free" money usually given by the government or organizations to encourage specific types of work.
- **Key Point:** Unlike a loan, you do not have to pay this money back.

- **Example:** A government might give a grant to a software house to develop an educational app for rural schools.

2. Loans

- **Simple Definition:** This is money borrowed from a bank or financial institution that **must** be paid back over time.
- **Key Point:** The company has to pay "Interest" (extra money) on top of the original amount borrowed.
- **Example:** Taking a loan to buy a new office building or high-end servers.

3. Sale of Equity

- **Simple Definition:** This means selling a "share" or a piece of ownership of the company to investors in exchange for cash.
- **Key Point:** You don't have to pay the money back like a loan, but the investors now own a part of your business and get a share of the future profits.
- **Example:** A startup software house selling 10% of its company to a Venture Capitalist to get funds for expansion.

4) Budgeting and Monitoring

A budget is like a "financial weather forecast." It is a plan that predicts how much money a company will earn and spend over the next year.

- **The Manager's Focus:** Most managers care about two things:
    1. **Income** (Money coming in from clients).
    2. **Expenditure** (Money going out for salaries, rent, and tools).
- **An Iterative Process:** This means the budget isn't made in one go. It is a "back-and-forth" conversation:
    1. **The Conflict:** Managers usually want to spend more to grow the team, but the Sales team might be cautious about how much they can actually sell.
    2. **The Goal:** They keep adjusting the numbers until they find a balance where the company makes a **profit**, the managers have enough staff, and the sales team is confident in their targets.

5) Working Capital & Cash Flow

This explains why a company can be "profitable" on paper but still have no cash in the bank to pay its bills.

- **Profit vs. Cash:** You might finish a 5,000 project today (Profit), but if the client doesn't pay you for 60 days, you have 0 in your pocket *today* to pay your team.
- **Accrual Basis:** This is an accounting term. It means recording income when the work is *done*, even if the cash hasn't arrived yet.
- **Work in Progress (WIP):** This is the value of work that is currently being done but isn't finished or billed yet.
- **Stage Payments:** To avoid running out of money, software houses ask for "Stage Payments" (e.g., pay 25% at the start, 25% in the middle, and 50% at the end) instead of waiting until the very end.

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Managing the "Gap"

Working Capital is the money used to cover the "gap" between paying your own bills and receiving money from clients.

- **Cash Flow Prediction:** A document that shows exactly how much cash is expected to come in and go out every month for the next year. It helps the company avoid "dry spells" where they have no money.
- **Bank Overdraft:** Sometimes a company needs a temporary "safety net." A bank allows the company to borrow up to a certain limit.
    - **Benefit:** You only pay interest on the specific amount you actually use, not the whole limit.

REMEMBER

- **The Budget** is like planning your monthly pocket money and expenses.
- **Cash Flow** is making sure you actually have the cash in your wallet on the day your mobile bill is due, even if your friend owes you money that they won't pay back until next week.

Week 6
Human Resource Management

- Introduction
- A model of Human Resource Management
- Training and Human Resource Management
- Health and Safety at Work
- Health and Safety Act 1974

1. Introduction

HRM is a way to manage employees so they perform their best to help the company reach its goals.

- **Why for IT?** Software work depends entirely on people's brains and skills. Therefore, managing, training, and developing staff is the most important part of an IT business.

2. A model of Human Resource Management

There are **five** key ideas that make a company successful at managing people:

1. Strategic & Long-term Thinking

Instead of just hiring someone for a quick task, managers plan for the future. They decide how many staff they need and how to educate them so the company stays strong for years.

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2. Commitment to the Organization

- **Compliance vs. Commitment:** The goal is to move from "I follow rules because I have to" (Compliance) to "I work hard because I care about the company" (Commitment).
- **Learning Organization:** The company invests in your skills, making you feel like a vital part of the team.

3. Self-Management & Teams

- **Teams over Individuals:** In software, teams finish projects, not just one person.
- **Face-to-Face:** Regular meetings between managers and workers build trust.
- **Autonomy:** Employees are given the freedom to manage their own work.

4. Unitary Perspective (One Team)

The whole company is treated like one big team with one goal.

- **The "Microsoft" Example:** Usually, to get a high salary, you must become a "Manager." But in HRM, a great coder can become an **Elite Architect** (a top-tier role) and get promoted without ever having to manage people.

5. Maximum Utilization

This means making sure everyone is working efficiently.

- **The Problem:** Sometimes managers think a project is going well, but they don't know the "grassroots" (real) problems until it is too late.
- **Surveillance:** Nowadays, computers can track how much work is being done, but it's a difficult balance to maintain.

3. Training and Human Resource Management

There is a big difference between what students learn at university and what the industry needs.

- **The Missing Piece:** IT graduates are good at coding but often lack **"People Skills"** (Communication and understanding how a business works).
- **Generalists vs. Specialists:** Some companies prefer hiring people with general degrees and teaching them the "tricks of the trade" themselves because computer scientists sometimes know the theory but can't handle real-world programming methods.

4. Health and Safety at Work

Even in an office, safety is a priority.

- **Computers & Safety:** Many dangerous systems (like in factories or hospitals) are controlled by software. If the software fails, people can die.
- **The Statistics:** Around 200 people die every year due to accidents at work.

5. Health and Safety Act 1974

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This is a law that sets the rules for a safe workplace.

- **Comprehensive Duties:** It's not just for the boss. Manufacturers and suppliers of equipment must also ensure their products are safe to use.
- **Updating Rules:** Technology changes fast (like VR or new servers). Instead of making new laws every day, the Act uses **"Codes of Practice"** which are easier to update as technology evolves.

REMEMBER

- **HRM** is about making workers feel like "owners" of the project, not just "tools."
- **Training** is necessary because a degree is only the starting point.
- **Safety** is everyone's responsibility—from the person who builds the computer to the person who writes the code.

Week 7
Intellectual Property Rights

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- Introduction
- Confidential Information
- Patents
- Copyright
- Acts permitted in relation to copyright
- Remedies for breach of Copyright
- Plagiarism

1. Introduction

What is Intellectual Property?

Intellectual Property (IP) is often the most expensive and valuable thing a software company owns. It is the "legal shield" that stops others from stealing your work.

- **Trade Mark:** Protects the **Name** of the product (e.g., "Windows" or "WhatsApp").
- **Patent:** Protects a new **Invention** or a specific way of doing something (e.g., a new hardware chip).
- **Design:** Protects how the product **Looks** (the physical shape or interface).
- **Copyright:** Protects the actual **Code**, manuals, and website content.
- **Confidential Information:** Protects the "Know-how" and **Secrets** of how the software was built.

2. Confidential Information

This is information that is not known to the public. If you share it, you do so under a "promise of secrecy."

- **When is it protected?** It is only protected if it stays secret. Once it's public, anyone can use it.
- **3 Rules for a Legal Case:**
    1. The info must truly be a secret.
    2. It was shared in a situation where secrecy was expected (like an NDA).
    3. Someone shared or used it without permission.

3. Patents

A Patent is a government-granted "monopoly." It gives you the sole right to make or sell an invention for a specific time (usually 20 years).

Criteria to get a Patent:

- **New:** It must be the first of its kind.
- **Inventive:** It shouldn't be something obvious that any expert could think of.
- **Industrial Application:** It must be something that can actually be made or used.

Software Patents: You cannot usually patent "just a program." It must be a **"Program Plus"**—meaning the software must cause a physical effect (like software that controls a car's brakes).

4. Copyright

Copyright is an automatic right given to the creator to stop others from copying their work. It protects code, diagrams, and manuals.

Six Rights of the Owner: You have the exclusive right to:

1. Copy it.
2. Distribute it.
3. Rent it.
4. Show it.
5. Broadcast it.
6. Make a "version 2" (adaptation).

The Internet Problem: It is very easy to pirate software online, so laws are becoming stricter with digital locks and monitoring.

5. Acts permitted in relation to copyright

The law allows you to do a few things that would normally be "**illegal**" under copyright, such as:

- **Back-ups:** You are allowed to make a backup copy so you don't lose your software.
- **De-compilation:** You can look at the code *only* to make your software work with another program (Interoperability).
- **Error Correction:** Fixing bugs in the software you bought.

6. Remedies for breach of Copyright

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If someone breaks (infringes) your copyright, you can:

- **Injunction:** Get a court order to make them stop immediately.
- **Damages:** Make them pay for your financial loss.
- **Seizure:** Owners can sometimes enter a property (without force) to take back illegal copies of their software.

7. Plagiarism

Plagiarism is "cheating." It is taking someone else's ideas or work and pretending they are yours.

- **In Software:** Just changing the **Variable Names** but keeping the same logic and structure is still plagiarism.
- **In Writing:** Copying words without using "quotation marks" or failing to mention the original author (Source) is plagiarism.

MCQs

- **Copyright** protects the *expression* (the code itself).
- **Patents** protect the *idea/function* (how it works).
- **Confidentiality** protects the *secret* (how we made it).
- **Plagiarism** is a matter of *honesty* (who gets the credit).

Week 8
Computer Contracts

- Introduction
- Computer Contracts for supply of Custom-built Software
- Other Types of Software Services Contract

1. Introduction

What is a Contract?
A **contract** is a formal agreement between two or more groups to do (or not do) something specific.

The Purpose of a Contract:
- ❖ It explains exactly what everyone agreed to.
- ❖ It sets the goals of the project.
- ❖ It handles problems that might happen while the work is being done.
- ❖ It explains how to end the project and what happens next.

Why do we need them? We don't need contracts when things go perfectly. We need them to avoid "**ambiguity**" (confusion). If a contract is unclear, it leads to wasted time, effort, and money.

2. Computer Contracts for supply of Custom-built Software

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When a company builds a specific software for one client at a **"Fixed Price,"** they usually use a **Standard Form Contract**.

Standard Form Contract Structure:

- **Introductory Section:** Names and addresses of the parties, dates, and signatures. It also includes a "Dictionary" (Definitions) so everyone knows what "The Company" or "The Client" means.
- **Terms and Conditions:** The "Rules" of the project (Rights and Duties).
- **Annexes (Appendices):** These include technical documents like the **SRS (Software Requirements Specification)**. This ensures that a salesman's "big promises" don't confuse the actual legal requirements.

Common Issues in Terms & Conditions

These are the specific details every software contract should cover:

- **What & When:** What is being built and when is the delivery date?
- **Ownership:** Who owns the code after it is finished?
- **Money:** How much is the payment, and what happens if there are delays?
- **Testing:** How will the client "Accept" (approve) the software?
- **Maintenance:** Who fixes bugs after the software is delivered?

3. Other Types of Software Services Contract

There are different ways to charge for software services. Choosing the right one depends on the project.

1. Fixed Price

- **How it works:** The price is set at the beginning (e.g., 5,000 for the whole app).
- **Risk:** The supplier takes the risk. If the work takes longer than expected, the supplier loses money.

2. Contract Hire

- **How it works:** The supplier "rents out" staff to the client. The staff work under the client's direction.
- **Payment:** Based on a "man-day" rate (e.g., 100 per person per day).
- **Responsibility:** The supplier only has to provide "competent" people; they aren't responsible if the project fails.

3. Time and Materials

- **How it works:** A mix of Fixed Price and Contract Hire. The supplier does the work, but the client pays for the actual hours spent and any materials used.
- **Safety Net:** Sometimes a "maximum price" is set so the costs don't go out of control.

4. Consultancy

- **How it works:** Used when a client needs expert advice or a "Report" rather than a piece of software.
- **Product:** The final result is usually a document or a set of suggestions.
- **Price:** Usually a simple fixed price.

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Easy Comparison for Revisions:

Contract Type	What are you paying for?	Who manages the work?
Fixed Price	The final product	The Supplier
Contract Hire	The person's time	The Client
Time & Materials	The hours + effort	Usually the Supplier
Consultancy	Expert advice/Report	The Consultant

Week 9
Introduction to Software Safety
Liability & Practice

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Where is Safety Software Used?

We use computers to control dangerous machines every day. If the software in these systems fails, people can get hurt or die.

Examples of High-Risk Areas:

- **Medicine:** Machines that monitor patients or give radiation treatment.
- **Transport:** Auto-pilot in planes, railway signals, and space shuttles.
- **Industry:** Large robots and manufacturing plants.
- **Military:** Weapons and defense systems.

Regulatory Issues (The Rules)

To prevent accidents, the industry uses four main "safety nets":

- **Standards:** Following a specific "recipe" or set of rules that everyone agrees is safe.
- **Certification & Licensing: Certification:** Proving that the product or the person meets a standard.
- **Licensing:** Permission from the government to sell a product or work in a field. Without a license, you cannot operate.
- **Codes of Practice:** Rules made by professional groups (like an IT association) that members must follow.
- **The Law:** The government can force companies to follow safety rules. If they don't, they can be sued in court (litigation).

Legal Liability (Who is responsible?)

If a software bug causes an accident, "Liability" determines who has to pay for the damage.

- **Product Liability:** This law says that manufacturers and suppliers are responsible for injuries caused by their products.
- **Consumer Protection Act (CPA):** This protects people. If a part of a system is "defective" (doesn't work right), the maker is responsible for the damage, even if they didn't mean for it to happen.
- **Negligence:** This is when a designer or engineer **failed to take care**. If you were lazy or ignored a known risk and someone got hurt, you are "negligent" in the eyes of the law.

Competence (Are you good enough?)

In safety-critical work, you cannot "learn as you go."

- **What is Competence?** It is not just having "Knowledge"; it is the **Ability to apply** that knowledge correctly.
- **The Assumption:** The law assumes that if you are building a safety system, you are fully trained and have the right experience. If you take a job you aren't qualified for and a mistake happens, you are legally at risk.

Factors Affecting System Safety

- Hazard analysis
- Requirements and specification
- System Reliability and safety
- Design
- Testing and debugging
- Safety integrity analysis and risk assessment
- Documentation

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Week 10
Computer Misuse & Criminal Law

The Rise of Cyber Crime

As businesses and governments move their data to computers and the internet, the risk of crime has increased. The media often reports on "hackers" attacking banks or national security systems.

- **The Reality:** Almost every modern business process uses hardware and software. This has led to a sharp rise in crimes that involve technology.

Categories of Computer Misuse

The Law Commission identifies several ways a computer can be "misused." These are the main legal categories:

1) **Computer Fraud:** Tricking a system to get money or property.
2) **Hacking:** Entering a system without permission.
3) **Eavesdropping:** Secretly watching or listening to data being sent.
4) **Personal Benefit:** An employee using company computers for their own private gain.
5) **Damage:** Changing or deleting data without permission.
6) **Denial of Service:** Stopping a rightful user from accessing their own system.

Computer Fraud

This is using a computer dishonestly to steal money or value, or to cause a loss to someone else.

It is divided into three parts based on where the trick happens:

- **Input Fraud:** Entering fake data into the computer (e.g., changing a bank account number in a form).
- **Program Fraud:** Changing the actual code of a software so it behaves dishonestly (e.g., a "Salami attack" where a program steals a few cents from every transaction).
- **Output Fraud:** Stealing or misusing the result produced by the computer (e.g., stealing a printed list of credit card numbers).

Unauthorized Access (Hacking & Spying)

This is when someone looks at information they are not supposed to see.

Computer Hacking

- **What it is:** Accessing a computer secretly without the owner's permission.
- **The Goal:** Usually to steal data, look at private files, or manipulate information for bad purposes.

Eavesdropping

- **What it is:** Just like "listening at a door," this is spying on data while it is moving through a network.
- **The Goal:** To capture passwords or private messages without the user knowing.

Misuse for Personal Benefit

This usually involves an **insider** (an employee).

- **Scenario:** An employee is authorized to use the computer for work, but they use the company's powerful servers or private data to run their own side business or for personal profit.
- **Why it's a crime:** Even though they have a password to the computer, they are using the company's resources in a way that was never allowed.

Week 11

Regulation and control of personal information: data protection, defamation and related issues

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Data as a "Commodity"

In the past, information was kept in paper files. Now, computerization has turned data into a **commodity**—something that has a price and can be bought, sold, or traded just like gold or oil.

- **Global Trade:** Because data is digital, it can be sent across the world instantly, making it very valuable for businesses but also harder to control.

Data Protection vs. Privacy

While these two words are often used together, they mean slightly different things:

- **Data Protection:** These are the **technical and legal rules** that organizations must follow to keep information safe (e.g., using passwords or encryption).
- **Privacy:** This is the **individual's right** or "privilege" to keep their information secret from others.

The Impact of the Internet

Data protection laws were originally made for "big, centralized computers" (like a single bank's main server).

- **The New Challenge:** Today, the internet is "amorphous" and "decentralized"—meaning data is everywhere at once.
- **The Question:** Can old laws written for paper or single computers still protect us when our data is scattered across global networks and the World Wide Web?

Problems with Regulation

It is very difficult to make rules for data because:

- **Technology moves too fast:** Laws can't keep up with new inventions.
- **Global Nature:** A company in Pakistan might store data in the USA for a client in the UK. Which country's law should we follow?
- **Powerful Interests:** Big companies and governments want to use data for their own benefits, which often conflicts with individual privacy.

Convergence of Rules (Standardization)

Because the internet is global, countries are starting to make their laws look very similar so they can work together.

- **Data Protection Principles:** Most countries now follow "Fair Use Guidelines." These are a set of common-sense rules (like "don't keep data longer than needed") that create a "harmonizing effect" across different nations.

Defamation and Reputation

Defamation is when someone says or writes something **untrue** about you that hurts your reputation.

- **The Internet Problem:** People often feel they are "anonymous" online, which makes them more likely to spread lies or rumors.

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- **Redress (Solution):** If someone circulates unwarranted and false statements about you on a computer network, you can take "action for defamation" (sue them) to clear your name and seek a remedy for the injury to your reputation.

Easy Summary for Revisions:

Concept	Simple Definition
Data Protection	The "Lock and Key" for information.
Privacy	Your right to say "This is none of your business."
Commodity	Treating data like a product that can be sold.
Defamation	Hurting someone's reputation by spreading lies online.

Week 12
Introduction to hacking

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What is Hacking?

Hacking is the process of getting into a computer system or network without permission. It also means changing how a system works to do something the original creator didn't intend.

Who is a Hacker? A person with advanced knowledge of hardware and software.

The Two Sides: Hacking isn't always bad. It can be **Negative** (criminal intent to steal data) or **Positive** (finding weaknesses to fix them).

Common Types of Hacking

- Website Hacking
- Net Hacking
- Password Hacking
- Software Hacking
- Ethical Hacking
- Email Hacking
- Computer Hacking

1. Website Hacking

Hacking a website means taking control from the website owner to a person who hacks the website.



2. Net Hacking

- Gathering information about the domain
- IP address (Address of your computer in the internet)
- Port (It is logical port on your computer which hacker can use to enter in the system)

3. Password Hacking

Password Hacking or Password cracking is the process of recovering secret passwords from data that has been stored in or transmitted by a computer system.

- **Brute force** (Hackers try out all the combination of all keyboard letters)
- **Dictionary based** (Hackers use predefine passwords. It is unsuccessful method)

4. Software Hacking

In that hackers changes the look & execution way of that software. For example change the demo version into the full version of that software.

- Modifying existing features of the software.

5. Ethical Hacking (White Hat)

The process in which a person hacks to find weakness in a system and then usually patches them.

- Can be used to recover lost information where the computer password has been lost.
- To test security of the system.
- Also called **white hat** computer hacking.

6. Email Hacking

Email hacking is unauthorized access to an email account or email correspondence.

7. Computer Hacking

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Computer Hacking is when files on computer are viewed, created, edited or deleted without authorization.

What should do after hacked?

- Shut down /Turn off the system
- Separate the system from network
- Restore the system with backup Or reinstall all programs
- Connect the system to the network
- Good to call the police

Tools of Hacking

✓ Scanners

A program that automatically detects security weakness in remote host

✓ Telnet

It is terminal emulation program that allows us to connect to remote system

✓ FTP

FTP is one type of protocol but some time it is used as hacking tool, port 21 for the ftp. For connecting ftp we need some ftp s/w known as ftp client. For connecting ftp server you have to hammer that server.

Ethical Hackers

- Performs most of the same activities but with owner's permission such as penetration tests.
- **Penetration test** means Legal attempt to break into a company's network to find its weakest link Tester only reports findings

Penetration-Testing Methodologies

White box model

Tester is told everything about the network topology and technology and is authorized to interview IT personnel as well. Makes the job easier for him

Black box model

Company staff does not know about the test. Tester is not given detail about the network so the burden is on the tester to find out the details. The test determines if the security personnel are able to detect an attack.

Gray box model

This mode of test is combination of both white and black box models. The company provides the tester with partial information about the network.

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Hackers Code of Conduct

Hacker creed (Steven Levy's "Hackers: Heroes of Computer Revolution" - 1984):

- Access to computers should be unlimited and total.
- Always yield to the Hands-On Imperative
- All information should be free.
- Mistrust authority -- promote decentralization.
- Hackers should be judged by their hacking.
- You can create art and beauty on a computer.
- Computers can change your life for the better.

New Code of Ethics (90s) - Steven Mizrach :

- Above all else, do no harm"
- Protect Privacy
- "Waste not, want not."
- Exceed Limitations
- The Communicational Imperative
- Leave No Traces
- Share!
- Self Defense
- Hacking Helps Security
- Trust, but Test!

Certified Ethical Hackers

- Developed by the International Council of Electronic Commerce Consultants (EC-Council)
- Based on 21 domains (subject areas)
- **Web site:** www.eccouncil.org
- **Red team:** Composed of people with varied skills
- Conducts penetration tests

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Week 13
Information Security Practices

- Introduction
- The CIA: Information Security Principles
- Information Security Organizational Structure
- Information Classification

Introduction

Information security, sometimes shortened to **InfoSec**, is the practice of defending information from unauthorized access, use, disclosure, disruption, modification, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (e.g. electronic, physical)

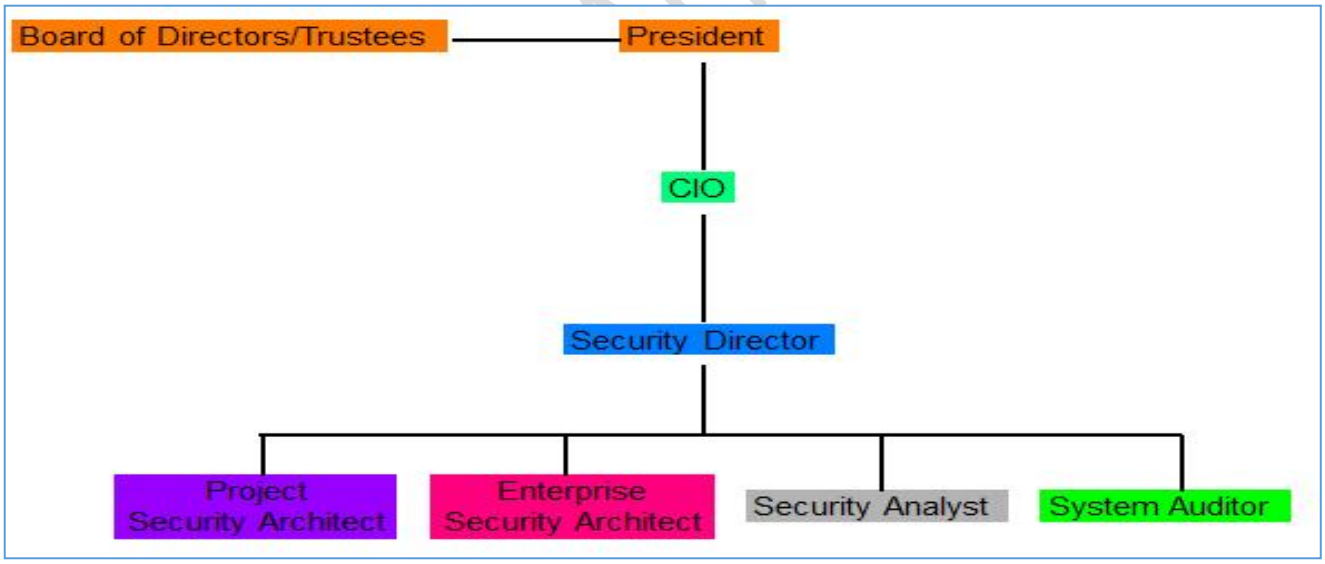
The CIA: Information Security Principles

The CIA principle

- Confidentiality
- Integrity
- Availability



Information Security Organizational Structure



Information Classification

1) Government classifications
2) Private Sector classifications

- Criteria

Week 14
Risk Management

- Introduction
- Overview of Risk management
- Risk identification
- Risk assessment
- Risk control strategies

Overview of Risk Management

Risk is

The **likelihood** of the occurrence of a vulnerability

Multiplied by

The **value** of the information asset

Minus

The percentage of risk mitigated by **current controls**

Plus

The **uncertainty** of current knowledge of the vulnerability

Risk Management is identifying, evaluating, and mitigating risk to an organization

a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking

- It's a cyclical, continuous process
- Need to know what you have
- Need to know what threats are likely
- Need to know how and how well it is protected
- Need to know where the gaps are

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Risk Identification

- ❑ Assets
- ❑ Threats
  - ▪ Threat-sources: man-made, natural
- ❑ Vulnerabilities
  - ▪ Weakness
- ❑ Controls
  - ▪ Safeguard

Risk Assesment

A **risk assessment** is a systematic process of identifying hazards, evaluating potential risks to people or assets, and implementing control measures to mitigate them.

Three general categories of controls exist:

1) Policies
2) Programs
3) Technical controls

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Week 15
Social Networking & Ethics

- Introduction
- The Good, the Bad and the Ugly
- How to Protect yourself
- How to protect your children

What is a Social Network?

Just like a computer network connects machines with cables, a **Social Network** connects people through relationships like friendship, work, or shared interests.

Web 2.0: This refers to the "modern" internet where users create the content (videos, blogs, posts) rather than just reading it.

Common Platforms:

- **Facebook/MySpace:** Websites for connecting with friends.
- **Twitter:** A "micro-blog" for short messages.

- **Blogs:** Online journals where people share thoughts.
- **YouTube/Flickr:** Sites for sharing videos and photos.
- **Podcasts:** Audio shows you can download and listen to.

The Good, the Bad, and the Ugly

Social media is great for staying connected, but it can be dangerous if used carelessly.

The Risks (Examples):

- **Phishing/Fraud:** Hackers can steal someone's identity to ask their friends for "emergency money."
- **Privacy Leaks:** Even powerful people (like the head of MI6) can accidentally have their private lives or home locations exposed through family photos posted online.

How to Protect Your Self

- Keep private information private
- Do not post address, phone number, financial info, your schedule, full birth date
- Be careful not to display information used to answer security questions (e.g., favorite pet, mother's maiden name)
- Use caution when you click links
- Be careful about installing extras on your site
- Be wary of unknown friends (strangers)
- Google yourself
- Don't blindly connect
- Trust your gut instinct
- Use and maintain anti-virus software
- Use strong passwords
- Don't use the same password for a social networking site and for your email
- Remember - social networking sites are a public resource – like a billboard in cyberspace
- Evaluate sites privacy settings
- Lock down your profile information to people you accepts as a friend. That way no one can read your personal information unless they are an approved friend
- Be skeptical

How to Protect Your Children

Just as you wouldn't let a child walk alone late at night, you must monitor who they talk to online.

- **Age Limits:** Most sites (like Facebook) require users to be at least **13 years old**.
- **The "10 p.m. Rule":** Parents should always know who their children are talking to online and what sites they are visiting.
- **Education:** Teach children that what they post online stays there forever and can affect their future.

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Week 16

Moral, Social and Ethical issues associated with Internet

- Introduction
- Moral Issues
- Ethical Issues
- Advantages and Disadvantages of Internet
- Owner Ship of the internet

Introduction

The Use of internet by individuals and organizations has raised a number of issues that need to be considered.

- Setting up websites containing incorrect information. People may rely on and use this information thinking it is correct
- Bullying via email, text message, chat
- Inappropriate websites with illicit material
- Using e-mail to give bad news when explaining face to face would have been better
- Spreading rumors using the Internet

Moral Issues

- Plagiarism
- Sending spam. People waste time deleting spam if the spam filter allows it through
- Companies monitoring staff use of the internet and e-mail
- Using someone's wireless internet connection without permission
- Using photo editing software to distort reality

Ethical Issues

- The Internet has a lot of illicit materials. The availability of offensive, illegal or unethical material on the Internet
- Privacy issues
- Gambling addiction
- Obsity
- Addiction to computer games
- Widens the gaps between the haves and have nots (e.g. between rich and poor countries and individuals)
- Don't use the same password for a social networking site and for your email

Advantages and Disadvantages of Internet

The internet has both positive and negative effects on the users. Effects on communities

Advantages of the Internet:

- Unlimited Information Access
- Instant Global Communication
- E-commerce and Online Banking
- Remote Work and Collaboration
- Entertainment and Media Sharing

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Disadvantages of the Internet:

- Cybersecurity and Hacking Risks
- Cyberbullying and Harassment
- Privacy and Data Leaks
- Spread of Fake News
- Addiction and Social Isolation

Ownership and Control of the Internet

Internet is for everybody and no one actually owns it

- Governments have started to control what can be seen on it
- The lack of policing of the internet means that information is not checked to make sure that it is accurate

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Best of Luck!

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