IQRA National University, Peshawar

Department of Computer Science

Summer Semester / Examination, Date: 26ᵗʰ Sep, 2020

Final – Semester Examination

Instructor: Mr. Shahab Ul Islam

Total Marks: 50

Professional Practices

Instructions:

- All questions are compulsory.
- Marks of each question are mentioned with it.
- **Marks will be given as per the DEPTH of the answer, not LENGTH. (Kindly don't write lengthy stories, just to the point)**
- No *out sourcing* please (Save that to IT Companies).
- For this paper, you'll not be required to borrow anything from anyone.

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PROGRAM : BS (SE)

Question No: 01

a) What is intellectual property? Write and explain three ways that protect Intellectual property?

Ans:

-Creation of the mind resulting in useful contribution to the society at large.

-Human tendency is to protect and process a physical thing they same goes with creation of mind.

-IP-Rights-state provides mono-polys rights to exclude others from practicing your IP in exchanges of making the IP public.

-In general IPR aids the economic development of state/country by promoting healthy competition and encouraging industrial growth.

Three ways that protect Intellectual Property

1)Copyrights:

A copyright is a way to protect the authorship of a piece of written work. Written work can include a novel, poetry, a piece of music, or art.

2)Patents:

A patent is a license or government authority over an invention the owner has legal rights to for a set period. The owner can make, use, and sell their invention. In turn, they publicly disclose information about their invention.

3)Trademarks:

 A trademark is any kind of slogan, wording, or logo that represents a brand.

b) What is the difference between European directive and U.S directive on data protection?

Ans:

The different approaches of the EU and US towards data protection probably stem from history. In Europe, where people have had dictatorships, data protection is declared as a human right and regulated by comprehensive data protection legislation. In this regard, it is worth mentioning that the STASI, the official state security service of the German Democratic Republic or GDR (informally known as East Germany), employed 500,000 secret informers. The task of 10,000 of these informers was to listen to and transcribe the phone calls of citizens. In contrast, in the US, the attitude towards data protection is governed mainly by market forces.

Question No: 02
a) Explain limited and unlimited companies. Also list 3 limited and unlimited Companies in Pakistan.

Ans:

Limited Company is a private company whose owners are legally responsible for its debts only to the extent of the amount of capital they invested.While an Unlimited Company or private unlimited company is a hybrid company (corporation) incorporated either with or without a share capital (and similar to its limited company counterpart) but where the legal liability of the members or shareholders is not limited – that is, its members or shareholders have a joint, several and non-limited obligation to meet any insufficiency in the assets of the company to enable settlement of any outstanding financial liability in the event of the company's formal liquidation.

limited Company:

United Carpet Limited.

Cloud Hosting.

Mohsin Match.

Unlimited Company:

Textile unlimited, Inc.

Umutstech.

Ahmed ali Dewan & Co.

b)While starting a new software company as fresh graduates, what are the two main sources of funds that can help you to start your company? Explain briefly.
<u>Ans:</u>
Once you've conducted market research and decided on the way you   are going to sell your product, you may proceed to the software development company creation.

1) **<u>Protect your intellectual property:</u>**
   Once you have an idea, obtain the necessary patents and register trademarks to protect it. Make your collaborators sign a non-disclosure agreement at the product creation stage to prevent leakage of any project-related information.
2) **<u>Draw up a business plan:</u>**
   State your business purpose, product, target audience, competitors, financial needs, and the expected time to market for your product. Don't underestimate this step, as the wrong business model will most probably undermine the success.

Question No: 03
a) Explain the functional units of an organization in detail?
Ans:
A typical organization has different functional units, such as the Human Resources, Finance, Marketing, Sales, Operations, IT, Administration, etc.

Each unit is managed by a functional manager who reports to the strategic direction of the organization.

In a large organization, the heads of the individual functional units may have other operational managers working under them and reporting directly to them. The larger the organization, the more levels it will have the functional unit.

<u>For example,</u> the HR department can have an HR head manager, under which we find additional HR managers. Each sub-responsible will deal with different aspects of this same department such as hiring, payroll management, staff training, etc.

b) Explain that the following organizations (Microsoft, IBM, Ebay, Amazon) are centralized or decentralized. Also justify your answer.

Ans:

Microsoft:

Microsoft Corporation is an American multinational technology company with headquarters in Redmond, Washington. It develops, manufactures, licenses, supports, and sells computer software, consumer electronics, personal computers, and related services.

IBM:

International Business Machines Corporation is an American multinational technology company headquartered in Armonk, New York. It was founded in 1911 in Endicott, New York, as the Computing-Tabulating-Recording Company and was renamed "International Business Machines"

Ebay:

EBay Inc. is an American multinational e-commerce corporation based in San Jose, California, that facilitates consumer-to-consumer and business-to-consumer sales through its website. eBay was founded by Pierre Omidyar in 1995, and became a notable success story of the dot-com bubble.

Amazon:

Amazon.com, Inc. is an American multinational technology company based in Seattle, Washington, which focuses on e-commerce, cloud computing, digital streaming, and artificial intelligence.

Question No: 04

a) **What is contract? Explain the main purpose of contract?**

Ans:

Contract:

A Contract is an exchange of promise between two or more parties to do, or repair from doing an act, which resulting contract is enforceable in court of law.

In the project or program context, contracts typically involve the exchange of money in return for goods or services.

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Main Purpose oof Contract

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1) Non-Interference Clause (explain this clause.what doe it mean)
2) Copyrights (what does the contract say regarding protection of copyrights?)
3) Invention (what does the contract say regarding inventions created by the employee)
4) Serviceability Clause (what is the purpose of the sever-ability clause?)
5) Governing law (the law of what state will govern this contract?)
6) What clause do you finf most interesting?

b) What is pen-testing? Explain three methodologies of penetration testing used by ethical hackers.

Ans:

Pen-testing:

Penetration testing (or pen testing) is a security exercise where a cyber-security expert attempts to find and exploit vulnerabilities in a computer system. The purpose of this simulated attack is to identify any weak spots in a system's defenses which attackers could take advantage of.

This is like a bank hiring someone to dress as a burglar and try to break into their building and gain access to the vault. If the 'burglar' succeeds and gets into the bank or the vault, the bank will gain valuable information on how they need to tighten their security measures.

Methodologies of Pen-testing used by ehtical hackers

- **White Box Penetration Testing:** Here, the tester has complete access and in-depth knowledge of the system to be tested. This is very helpful in carrying out extensive penetration testing.

- **Black Box Penetration Testing:** In black box penetration testing approach, high-level of information is made available to the tester. The tester is totally unaware of the system/network. However, this approach might miss some areas while testing.

- **Gray Box Penetration testing:** Gray box penetration testing makes only limited information available to the tester to attack the system externally.