JINNAH UNIVERSITY FOR WOMEN

Department of Computer Science & Software Engineering

Professional Practices [SE: GED 4062/CS: GED 4212]

Assignment No. 1

**Instructions:**

* This Assignment must be submitted on JUW LMS. Email submission will not be accepted.
* Each student should solve the assignment individually.
* You are advised to go through the related topics before solving the assignment.
* Make your work clear and understandable.
* The work should be your own, copying from other students will result in marks deduction

**Question No.1**

Question: you have been working for the XYZ Computer Corporation as an entry-level software engineer since you graduated from college last May. You have done very well so far; you are respected by management, are well liked by your fellow employees, and have been assigned to a team of engineers that has consistently worked on the most critical and valued projects and contracts that XYZ Corp. has secured. Their most recent contract is for a United States defense project involving the missile defense system, and again you have been assigned to the team that will develop software for this project. However, you are staunchly opposed to the project’s objectives, so you ask to be reassigned. Your supervisor and coworkers, as well as upper management, are disappointed to learn of your strong feelings about this project. You are asked to reconsider your views, and you are promised a bonus and substantial pay increase if you agree to work on this project during the next year.

You also discover from a colleague that refusing to work on this project would greatly diminish your career advancement at XYZ and may even make you vulnerable to future layoffs. To compound matters, you and your spouse are expecting your first child in about three months and you recently purchased a home. What would you do? Describe the process of ethical deliberation that you would undertake in trying to resolve this dilemma.

**Points To Reconsider:**

* Losing the job right in the beginning of career can never be beneficial in any case. This can put the title of ‘rigid’ on that person.
* The fact that management has asked for reconsidering the decision clearly states that they want one on board in this project. Negotiation can bring solution for the situation.
* There aren’t job threats only associated with the scenario; there is family at home that needs to be stress-free about finances, especially in this particular time. Losing job can harm their mental stability and will surely have furthered consequences.
* As there are good relations with co-workers, there is possibility that they will help out in clearing out the situation to the management.

**Process:**

* For making the case stronger, one should make **written explanation** about the things that are conflicting with that engineer’s values. Spreading the words to authorities through proper channel might make them realize that there isn’t any way out for the engineer who seems to be a loyal employee.
* That explanation will either result in refusal, negotiation over conditions or acceptance for reassignment.
* Best result would be reassignment, at least in perspective of engineer.
* If management invites for negotiation, engineer can put the conditions through which he can work as neutral or his own rules. Those conditions should propose a middle way for engineer, probably neither white nor black for both parties.
* Refusal means there isn’t further point of discussion for staying in the project which can ultimately result in stepping away from organization. In that scenario, engineer should inform management or concerned authorities about resignation.

There are the laws that give employees the right to decline the work that is against their freedom (in USA) (*No One Can Force You to Work against Your Will | Michigan Legal Help*, n.d.). If the said project comes under that clause, the engineer has the right to fight against it. But such actions don’t benefit the employers as it clearly shows that employees’ intention is to stand against employer. Only benefit from this fight is that future employers will see the engineer as someone with strong moral values.

**Question No.2**  Question: List and describe ACS Code of Ethics values and relevant clauses to the Code of Conduct for the following two cases

**Case Study 1.**

Over the years a number of systems have been developed which record coded information across a range of factors about disabilities in ethnic communities. A new coding convention has been developed to rationalize the inconsistent coding conventions of these legacy systems. The new coding convention uses codes which had different meanings in the legacy systems. This means that time series analysis gives inconsistent results, particularly showing both under and over reporting of numbers of particular disability categories. This is significant when making policies for people based on the size of the communities. To fix this would take a lot of work and expense, and management has decreed that historical systems will not be fixed, but new systems will all adopt the new coding convention.



Figure 1: Clause (1) relating to case 2

The inconsistency that came with updated coding convention is against the public interest. This way a special group will be affected as policies devised on the basis of incorrect can’t give them their due rights.

Figure 2: Clause (2) relating to case 1

Not acknowledging what is critically associated with protection of rights of a particular badly harms the credibility of individuals involved in such action which is against clause 3 i.e. honesty.

**Case Study 2**

Company X has just signed a business agreement with Company Y, which entitles both of them to access each other clients’ records. Faisal, a software programmer at Company Z, was assigned the task of developing a software program that handles the access and retrieval of records from each Company’s database system into the other. A first run of the software on real data indicated that the work was well within the state of the art, and no difficulties were found or anticipated. Several weeks later and during a normal test on the software developed, Faisal discovered a serious ‘security hole’ in the database system of Company Y by which hackers can easily obtain confidential information about clients. He was convinced that while the software he developed could correctly accomplish the task, the code in Company Y’s database system could not be trusted as the security hole posed a threat even on Company X’s database system. Faisal told his manager about the problem and explained its significance. The manager's response was, "That's not our problem; let's just be sure that our software functions properly." Faisal is not sure what to do. Refusing to work on the project means disobeying his manager’s orders. Continuing to work on the project, means disobeying one of God’s commands, this requires him to be truthful and sincere in his dealings.

There seems a conflict in this case as there is a clause for competence which binds software engineers to stay loyal to the stake holders which puts Faisal in difficult situation. If he opts for honesty, he has to go against his employer as he works at Company Z but public interest comes first.

**Question No.3**

Apple Inc. v. Samsung Electronics Co., Ltd. was the first of a series of ongoing lawsuits between Apple Inc. and Samsung Electronics regarding the design of smartphones and tablet computers?

* Discuss the Apple and Samsung fight over copying right?

The lawsuit was filed after the launch of Galaxy by Samsung about which Apple claims that doesn’t have unique feature, rather the design and software part follow Apple. It’s interesting that despite legal battle, both continued the trade exchange with as Apple heavily relies on Samsung for some hardware.

Infringements Lawsuits Apple Filed Against Samsung:

There were total 16 claims filed against Samsung by Apple Inc. Three of them were more prominent:

1. Trade dress infringement (Visual appearance of product and its packaging, iPhone and Galaxy phone appearance in the beginning )
2. Trademark infringement (There were claims for similarity in software elements like icons and visuals)
3. Design patents infringements (hardware design like the shape, position of speaker, camera, home button)

* How the Apple and Samsung settle seven-year-long patent fight?

Both companies claimed for share in every unit of the other one. Apple claimed due percentage because of the design patent infringement. In response, a counter claim was filed by Samsung that Apple allegedly went against their cellular data patent. This legal fight ended with a win situation for Apple because jury asked Samsung to pay $1 billion to Apple and warned them not to do it again.

Samsung, in total, paid nearly $539 million as against to $1 billion demanded by Apple Inc. because they paid for profit gained from the units sold under that infringement.

* Which intellectual property right applicable in software applications and why discuss with references?

Software applications have different cases as almost all types of intellectual property rights are related with software. (*Intellectual Property Rights in Software – ODI Law*, n.d.)

* Copyrights relate with reproducing any piece of technology i.e. websites give copyright claim right in the bottom which depicts that reproducing any content from that particular is limited for the owners only.
* Patents protect the ownership rights for someone’s innovation. Design patents are simplest example that gives the designer complete right of the innovation such as physical design of devices.
* Trademark is the stamp that helps users in identifying the products offered by a brand. Bitten Apple is trademark of Apple that cannot be used anywhere by anyone except them.

**Question No.4**

What are the types of Organizational structure? Discuss at least 1 organizational structure with respect to all types, of any real life organization in detail.

**Types of Organization:**

**Tall Organizational Structure:**

This type of structure involves long chain of authorities for decision making and reporting i.e. to make any development, there is requirement to take approval from all authorities that have stake in it.

Military organizations always have tall organizational structure because they aren’t allowed to make decision by themselves, they have to get approval from higher commands too. Banks too, follow this type of organizational structure.

**Flat Organizational Structure:**

It doesn’t follow the long chain rule as individuals with authorities are allowed to move forward as per their own will. These are followed in small organizations usually.

Hospital managements, if they aren’t working on big level, have flat structure. Departments are separate and they have power to go for what they think is right, under certain rules.

**Virtual Organizational Structure:**

They don’t physically existing as such but are made and connected with the help of software. They are maintained and monitored by same means.

Apple Computers followed this structure which helped them in increasing their annual revenues by partner shipping with various manufacturers and suppliers.

**Boundary-less Organizational Structure:**

It is an organization that is not defined by, or limited to the horizontal, vertical or external boundaries imposed by a pre-defined structure. Flexibility and responsiveness are key features.

The examples of boundary less organizations would be Boing, and Apple, both of the companies try to remove hierarchy to empower employees and teams.

**Question No.5**

Consider a piece of property, plant, and equipment (PP&E) that costs $50,000, with an estimated useful life of 5 years and a $5000 salvage value. Calculate the depreciated amount after the end of useful life using the double-declining balance depreciation technique.

Step 1:

Expense (depreciation rate) = (100% / 5) x 2 = 40%

Step 2:

Rate of depreciation \* beginning book value = ((1/40)\* 100)) \* 50000 = 20000

Step 3:

Beginning book value – expense = 50000 – 20000 = 30000