Assignment 1

Deadline: Day 24/10/2022@ 23:59

**[Total Mark for this Assignment is 7 ]**

***Software Quality Assurance***

***SEN-420***

Student Details:

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| **Name:**  **Enrollment:** | **Class(Section): BSCS-8(A)** |
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**Instructions:**

* This Assignment must be submitted on LMS (**WORD format only**) via the allocated folder.
* Email submission will not be accepted.
* You are advised to make your work clear and well-presented, marks may be reduced for poor presentation. This includes filling your information on the cover page.
* You MUST show all your work, and text must not be converted into an image, unless specified otherwise by the question.
* Late submission will result in ZERO marks being awarded.
* The work should be your own, copying from students or other resources will result in ZERO marks.
* Use **Times New Roman** font for all your answers.

# Question One

***2 Mark***

**Differentiate between McCall’s factor model and ISO/IEC Quality factor model in detail (but in points)**

Answer

**McCall’s model:**

* In 1977 Jim McCall presented the first Quality model and this model in general electronic model.
* This model provides a set of the basic characteristics.
* **Product Operation:**

The degree of any product that how much quickly and easily it can be understood, it includes, reliability, correctness, and efficiency, integrity and usability criteria.

* **Product Revision:**

It covers the maintainability, testability, changeability, flexibility and debugging of the product.

* **Product Transition:**

The adaptability with the environment, portability, reusability and interoperability of the product.

**ISO/IEC Quality factor model:**

* ISO/IEC is presented by the international standard organization.
* ISO/IEC is one of the most implemented and used quality model for maintaining the quality of the software product.
* This modern model is based at the previous models like McCall’s
* The characteristics of this model contains are Efficiency, Maintainability, Functionality, Reliability, Portability and Usability.
* Efficiency: It contains the characters which affects the throughput in a given time and resources used.
* Reliability: It includes the Maturity, Fault Tolerance and Recoverability.
* Functionality: It contains many essential characteristics which are necessary for the proper functionality of the product like suitability, accurateness, interoperability, compliance and security.
* Maintainability: It helps in maintaining the changeability, stability and testability by using analyzability.
* Portability: It makes the software more dynamic and portable by ensuring characteristics like adaptability, install-ability, conformance and replace ability

In McCall’s Model one quality criterion can impact several quality factors, whereas in the ISO 9126 model, one sub-characteristic impacts exactly one quality characteristic. A high-level quality factor, such as testability, in the McCall model is a low-level sub-characteristic of maintainability in the ISO/IEC Model.

# Question Two

***2 Marks***

**How reusability factor has different importance for different clients. Give your own answer with suitable scenarios.**

Answer

The reusability factor has different importance for every client. For example a company made a product for same client, after few months any customer want the same product with same requirements. So this is easy for company to use the product of old code which they made. Due to this the cost of the product is reduce for the customer.

But if the product are same that the customer is needed but the major requirements are change then there is no any meaning to reuse the old product or same part of it. By using the old product they increase the cost of the new product.

# Question Three

***3 Marks***

**How Product-specific quality attributes are different from Organization-specific quality attributes, Give some examples of both.**

Answer

**Product-specific quality attributes:**

**Reliability:** Measure if the product is reliable enough to sustain in any condition. Should give the correct results consistently. Product reliability is measured in terms of working of the project under different working environments and different conditions.

**Maintainability:** Different versions of the product should be easy to maintain. For development, it should be easy to add code to the existing system, should be easy to upgrade for new features and new technologies from time to time.

Maintenance should be cost-effective and easy. The system is easy to maintain and correct defects or make a change in the software.

**Usability:** This can be measured in terms of ease of use. The application should be user-friendly. It should be easy to learn. Navigation should be simple.

**Organization-specific quality attributes:**

The organization quality attributes are slightly different from product quality attributes. The organization quality attributes are depend on the quality of the product which they are made for their clients. The organization make sure that the product they are delivering to their clients are fulfill the requirements of their client. And the team which working on the product are good enough to reach the goal.