CEN 303 – Assignment 1
Submission Deadline: Nov 4, 2021 in class

Q.1. Briefly discuss why it is usually cheaper in the long run to use software engineering methods and techniques for software systems.

Q.2. Explain why the fundamental software engineering principles of process, dependability, requirements management, and reuse are relevant to all types of software system.

Q.3. Incremental software development could be very effectively used for customers who do not have a clear idea about the systems needed for their operations. Discuss.

Q.4. Imagine that a government wants a software program that helps to keep track of the utilization of the country's vast mineral resources. Although the requirements put forward by the government were not very clear, a software company was tasked with the development of a prototype. The government found the prototype impressive, and asked it be extended to be the actual system that would be used. Discuss the pros and cons of taking this approach.

Q.5. At the end of their study program, students in a software engineering course are typically expected to complete a major project. Explain how the agile methodology may be very useful for the students to use in this case.

Q.6. Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description.

Q.7. Using the technique suggested here, where natural language descriptions are presented in a standard format, write plausible user requirements for the following functions:

    a. An unattended petrol (gas) pump system that includes a credit card reader. The customer swipes the card through the reader, then specifies the amount of fuel required. The fuel is delivered, and the customer's account debited.

    b. The cash-dispensing function in a bank ATM.

    c. In an Internet banking system, a facility that allows customers to transfer funds from one account held with the bank to another account with the same bank.

RULES:

1. Obey honor code principles.

2. Read your homework carefully and follow the directives. Violating any of these directives will be penalized.

3. Do not use non-English characters in any part of your homework.

4. Put your name and student number at the top of the submitted assignment.