SE Assignment 2 on 09/10/2025

I. Instructions

1. You are required to keep the previous groups you made for the previous assignment.
2. Also, only a group leader is required to submit to represent a group
3. Deadline is indicated in google e-learning where you will submit it. Any similarities, no matter how small, will be treated as collusion and penalized accordingly. Your work must be your own.
4. You should use the presentations provided and any relevant online material to aid your understanding as you prepare to answer the questions.
5. You may make (reasonable) use of ideas from third-party sources, provided these are cited as References within your answers and included in the Reference list at the end. Do not copy or closely paraphrase text. If any text is reproduced verbatim (i.e. if you quote a source – even the lecture slides), then this must be placed inside quotation marks "__". Make sure you follow these rules, otherwise your use of third-party sources and ideas may well be considered as plagiarism. Standard University policies apply to this and you can check them online for more guidance.
6. You are not required to provide/include any code. This is not a programming assignment.
7. See also the instructions above entitled 'Submission method & guidelines', and below.
8. The marking criteria for each question is provided in each question below.

Important:
1. Avoid plagiarism.
2. Word-limit depends on individual.
3. Include source (Reference)
4. Deadline (indicated in the submission platform)

II. Assignment submission mode

Every student has to submit their assignment via university e-learning platform. You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and reference.

Scenario:

The Adventist University of Central Africa is a Seventh-day Adventist institution of higher learning near two campuses in Kigali, Rwanda. It is a part of the Seventh day Adventist education system, the world's second largest Christian school system. It has a philosophy to operate on the basis of the Seventh-day Adventist worldview:" God is the Creator and Sustainer of the universe and the source of true knowledge. The entrance of sin caused man's alienation from God, therefore the restoration of the relation between man and his

God is the main aim of Adventist Christian Education that leads students to discover and understand the truth through critical thinking. The University was founded in 1978. The official opening took place on 15 October 1984 and the university had its definitive operating license via the law n0 0056/05 of 3rd February 1988, granting AUCA the legal personality as a nonprofit making association. This university is the largest Adventist University serving the French speaking parts of Africa. In 2015, it had about 4,000 students. Its mission is to provide Christ-centered quality-education founded on holistic approach that prepares people for the service of this life and the life to come.

The vision of the AUCA is to be a center of excellence in undergraduate and graduate programs. Quality shall be the hallmark of all its undertakings, including research and service delivery to its students, faculty, staff and the community at large.

AUCA is seeking an enhanced solution that automates Library Management System. You are hired as a System developer/Analyst (SD/A) to develop a new Library Management System. Proposed system will help to maintain all records of the library such as several available books in the library, the number of issued books or returning a book, etc. It also helps to maintain a database of all issue books and available in the library. So, teachers and students can check the online available book in the mobile application and also check the status of the book as available in the library, borrowed, and reserved. You are responsible for managing the project including analysis and designing stage of the new system. Being a System Analyst, you are suggested to use modern software development model in developing the library Management System   Features to be included in your proposed project are:

1. Simple and easy to use.
2. Highly Secure, Scalable & Reliable.
3. Save Time for manual work for data entry.
4. Manage Multiple Library.
5. Cost-Effective

Also consider feasibility study and non-functional requirements after discussion with your development team.

Task:

As a part of your responsibility, you are required **to prepare a report** that describes different software development cycles. Your report must include the following:

1. Description of predictive and adaptive software development models considering at least two iterative and two sequential models.
2. The risks involved in each of the models and how the risk can be mitigated /managed in each model by taking a reference of the spiral model. Once you have prepared the report you are required to produce documentation.

3. Describe with an example why a particular life cycle model is selected for a development environment. You may consider a different development environment with different business logics, platform, etc., and the applicability of the particular software development model over the development environment.

4. Assess the merits of applying the waterfall model to a large software development project with appropriate evidenced researched work with reference to the current context.

All the best!