CMP 403 SOFTWARE ENGINEERING
MID-SEMESTER EXAM Group Assignment

GROUP MEMBERS:

1. EJIGA ALEXANDER ACHILE. BHU/20/04/05/0046
2. OBENTA CHRISTOPHER OWOICHO. BHU/20/04/05/0090
3. IKEMKA ROMASON ROMANUS. BHU/20/04/05/0016
4. OGUH CHUBIYOJO FAVOUR. BHU/20/04/05/0048
5. KPONGO BEMSEN CHUKWUMA. BHU/20/04/05/0115
6. ADAMANI MIVANYI ENAN. BHU/20/04/05/0044
7. YOROM JOSHUA RIMAN BHU/20/04/05/0014
8. IDAMINABO CLEMENT-DAVIES BHU/20/04/05/0054
9. ADEJORI OLUWAFERANMI BHU/20/04/05/0080

Answers:

1a.

i. Conduct interviews with management, instructors, and clients to understand needs, expectations, and possible trouble points.
ii. Distribute surveys to clients and potential customers. Gather quantitative data on preferences, requirements, and valuable features in language training services.
iii. Observe current call center and mailshot processes to identify inefficiencies and areas for improvement.
iv. Create interactive prototypes of the online platform. Obtain feedback from stakeholders to refine requirements based on the visual representation.
v. Analyze existing documents (call center scripts, mailshot content) to extract valuable information.
vi. Document elicited requirements of the system.
vii. Validate requirements by involving end-users in the testing of prototypes.

1b.

I. Software Engineering refers to the, discipline which concerned with all aspects of designing, developing, and maintaining software systems. It involves applying engineering principles, methodologies, and tools to create reliable and efficient software solutions.

II. Process Models is a representation of the sequence of activities which are undergone during software development. It represents the framework for the development and management of software projects.

III. Requirement elicitation is the process of gathering and extracting requirements from stakeholders, users, experts, observation of existing systems, task analysis, and so on. This may involve the development of one or more system models and prototypes. These requirements aid understanding the system to be specified.

IV. Ethnography is a research method used in requirements engineering which involves using direct observation to study the behavior, potential users and

stakeholders. It involves observing users in their natural environment, conducting interviews, and analyzing their activities to gain insights into their needs, behaviors and their use of technology that cannot be obtained by other data gathe ring techniques.

V. Systems Engineering is the designing and managing complex systems, which may include hardware, software, and other components. It focuses on integrating and aligning various subsystems to achieve the desired functionality, performance, and reliability of the system as a whole

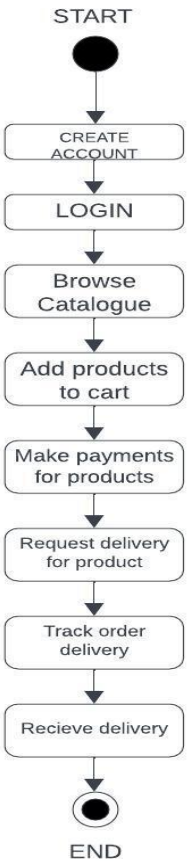
2.

Description of the online shopping software:

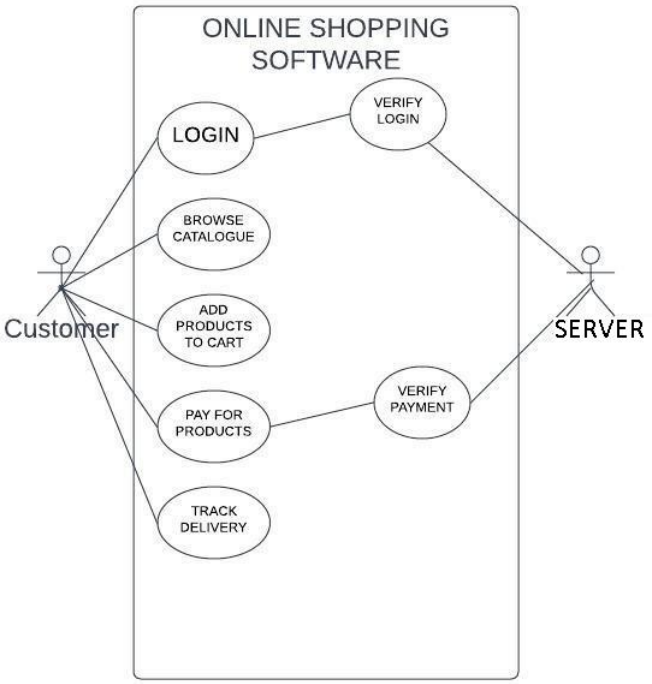
An online shopping software should provide a user-friendly platform for customers to find and purchase products online and have the products delivered to where the customer can retrieve it.

The software should allow users to create accounts, browse a catalogue of products, add items to their shopping carts, make secure payments, and track their orders.

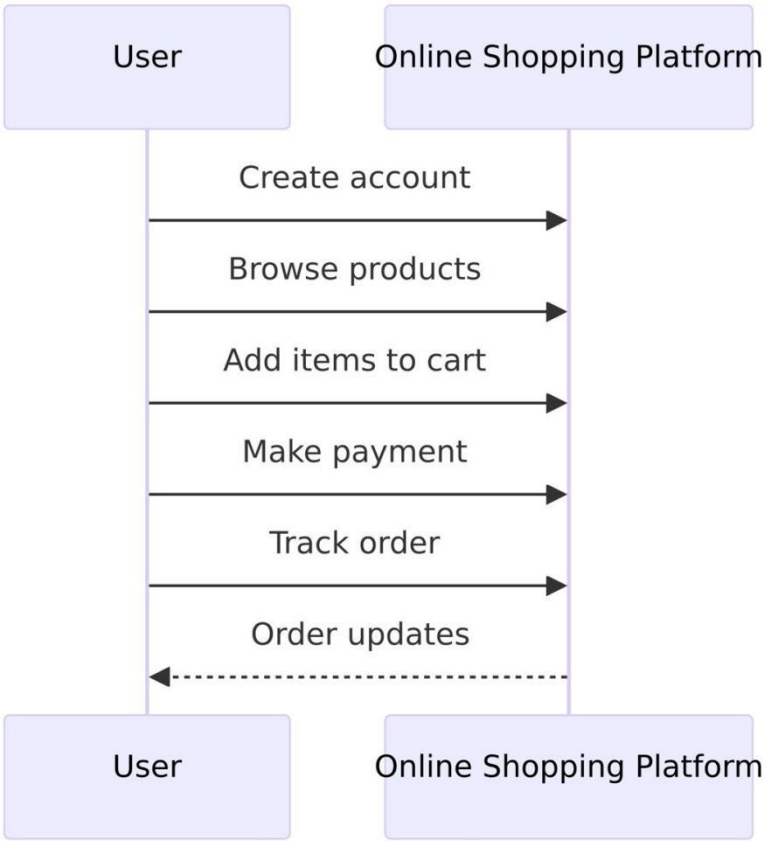
ONLINE SHOPPING SOFTWARE ACTIVITY DIAGRAM



ONLINE SHOPPING SOFTWARE USE-CASE DIAGRAM



ONLINE SHOPPING SOFTWARE SEQUENCE DIAGRAM



3a.

Comparison of Agile Approach and Plan-Driven Approach in Software Development

PLAN-DRIVEN APPROACH	AGILE APPROACH
A plan-driven approach to software engineering is based around separate development stages. The output of each of these stages is planned in advance.	Specification, design, implementation and testing are interleaved and the outputs from the development process are decided through a process of negotiation during the software development process.
The aim of plan-driven methods is to establish a structured framework upfront, minimizing uncertainties and ensuring a well-defined path to follow during development.	The aim of agile methods is to reduce overheads in the software process and to be able to respond quickly to changing requirements without excessive rework
Intends to deliver working software eventually after detailed planning and executing predetermined plan.	Are intended to deliver working software quickly and evolve this quickly to meet changing requirements.
Examples include:Waterfall Model, V-Model	Examples include: Scrum, Extreme Programming (XP)

3b.

Problem with Agile Development Methods concerning contracts:

Because many companies spend more money on keeping their current software working than creating new software, for agile methods to work well, they need to handle both maintaining and creating software. This creates difficulties with contracts, as traditional contracts may not fit well with the flexible and changing approach of agile methods.

3c.

Causes of change in systems development can include:

i. Evolving client needs:- The requirements defined by the stakeholders and users may change.
ii. Technological Advancements:- Introduction of new technology may necessitate modifications to existing systems.
iii. Business Requirements: Changes in business and market constraints may require updating the existing system.
iv. Changing platforms such as hardware or software may require rebuilding system.

The effects of change in systems development include:

v. Increased cost of production due to added costs of rework

vi. Requirements of system will have to be reanalyzed
vii. Leads to longer production time to effect changes.

4a.

i. Clients may have proper definitions of what they really want.
ii. Clients may be unable to express requirements in proper terms and express it in their own terms.
iii. Different clients may have conflicting requirements.
iv. Clients' requirements may change during the analysis process.
v. New clients may emerge and the business environment may change.

4b.

i. Software engineers must behave in an honest and ethically responsible way..
ii. Software engineers should normally respect the confidentiality of their employers or clients.
iii. Software engineers should not accept work which is above their competence.
iv. Software engineers should act in a manner that is in the best interests of their client and employer.
v. Software engineers should endeavor for their products meet the highest professional standards possible.
vi. Software engineers should be fair to and supportive of their colleagues and able to work in a team.