Work Integrated Learning Programmes

BITS Pilani
Pilani | Dubai | Goa | Hyderabad

Object Oriented Analysis and Design (SS ZG514)

Assignment – Phase 1

Last Date for Submission: 15th October 2018 (Monday)

1. Objective:

   The aim of this assignment is to develop the capabilities of the students to apply various object oriented analysis and design techniques to design of software.

2. Tasks to be performed: (by students in groups of 4)

Step 1: Choice of a software application

Choose a software application that you would want to develop. The chosen software application can be from any domain. It can be a real-life application or a live project that you might be currently involved in. However, be careful in sharing the names and related details of the application, in case of live projects, for proprietary related concerns.
Importantly, the chosen application should be such that it can be modeled using Object-Oriented Analysis and Design techniques.

Note:

- Do not choose any application that has been discussed in text book(s), reference book(s), recorded lectures, live lectures or tutorial sessions.
- The solutions for the chosen software application should not be readily available on the Internet. The same would be likely to be rejected.

Step 2: Describing the software development process

[Refer deliverables section for further details]

- Briefly describe the software development process that you this think is the best suited for this application. Discuss the pros and cons of the selected process model.

Step 3: Describing the application

[Refer deliverables section for further details]

- Briefly describe the selected software application that you want to develop.

- Define the requirements using Use Case Diagram. You must capture all the primary and secondary actors and the important use cases. (Your choice of software application should be such that there are atleast 2 actors in the system and the atleast 8 to 10 use cases). Use «includes» and generalization relationship to incorporate sub-use cases.
- Describe atleast 2 important use cases using fully-dressed format. Also provide the required details of associated sub-use cases, if any.
- Draw the domain model of the software application. Be sure to capture all domain concepts, their attributes and multiplicity of relationship between them.
- Draw the System Sequence Diagram for atleast 2 important use case scenarios.
- Refine the SSD drawn in the previous cases to model the interaction between various domain concepts in the application, thereby drawing the sequence diagram for the two selected scenarios.
- Draw the activity diagram for atleast 2 workflows/use cases of the software application.

3. Expected Deliverables

Phase 1:

Describing the software development process: 6 slides (approx.)

- You must develop atleast 2 slides describing how the selected process model is the best fit for the chosen application.
- Include atleast 2 slides describing the process model itself.
- Include atleast two slides on pros and cons of the selected process model.

Describing the application

- Provide atleast 1-page write-up to describe the application. (Use TimesNewRoman, size 12, with single line spacing)
- For each of the diagram to be drawn, you must chose scenarios so that atleast some of the enhanced notations are used in the diagrams.

Phase 2:

- Details to follow later.

OOAD- List of topics for Assignment

Following is the list of topics from which one can choose a system for the OOAD Assignment. However, the choice of system may not be limited to this list only. The list is prepared with the aim to highlight the nature and complexity of the system which the students are required to work on.

Topic Details	Description
1. Conference Management System	These systems are used to facilitate submission and review of research papers. They also facilitate the process of final announcement of selection/rejection of papers. These systems are used by various research communities to organize and manage conferences. e.g. EasyChair (https://easychair.org/); Edas (https://edas.info/)
2. Smart Class Solutions	These systems provide a digital platform for facilitating school education by providing portals for information sharing , interactive whiteboards etc. e.g. SoftLogic (http://www.softlogic.co.in/); EduComp (http://www.educomp.com/)
3. Clinic Management System	These systems enable doctors, clinic owners to manage patient appointments, patient history, and other related details. The customers can access the same to book/cancel appointments and give feedback. e.g. Practo (https://www.practo.com/)
4. Performance Management System	Performance Management Systems are used by organizations to ensure and track that employee goals are consistently being met in an effective and efficient manner.
5. Pathology Lab Management System	Path Lab Management Systems are used to enable patients to book test appointments and track the results of the various test reports. For more information refer the link below: e.g. Lal Path Labs (https://www.lalpathlabs.com/)
6. Vehicle Management System	These systems enable company owners to manage their current fleet of vehicles, track their location, speed, utilization level etc. These are the kind of systems that would be currently being used by travel providers like OLA and UBER for their internal work.
7. Video Management System	These systems enable people to upload and share their videos on the Internet. A famous example is YouTube (https://www.youtube.com/)
8. Slides Management System	These systems enable people to upload and share their slides on the Internet. A famous example is SlideShare (https://www.slideshare.net/)
9. Learning Management System	These systems help school or university to manage sharing of resources with the students, display of marks, provide interactive blogs etc.

Games	
1. Chess	An online game for playing chess, either distributed (between two people located distantly), or with the system.
2. Othello	An online game for playing Othello, either distributed (between two people located distantly), or with the system.
3. Cluedo	An online game system for playing Cluedo, either distributed (between three/four people located distantly), or with the system.
4. Battleship	An online game system for playing Battleship, either distributed (between two people located distantly), or with the system.
5. Connect4	An online game system for playing Connect4, either distributed (between two people located distantly), or with the system.
6. Tambola	An online game system for playing Tambola, between n people located distantly.

Following is the list of topics that should NOT be taken for the assignment:

Topic Details	Description
1. Library Management System	Available on the Platify portal of BITS, Pilani
2. Housing Loan Management	
3. Automobile Insurance System	
4. Game- Snakes and Ladders	Discussed in Live Lectures
5. Game- Monopoly	Discussed in Recorded Lectures and Text book
6. Game- Business	Same as Monopoly
7. Point-of-Sale (POS)	Discussed in Recorded Lectures and Text book
8. ATM	Available on the Internet
9. Sales and Inventory Management System	Available on the Internet
10. SafeHome Security System	Discussed in SE book by R. S. Pressman
11. Movie Ticket Booking System	Available on the Internet
12. Flight Ticket Booking System	Available on the Internet
13. Railway Reservation System	Available on the Internet
14. Hospital Management System	Available on the Internet
15. Banking System	Available on the Internet
16. Hotel Management System	Available on the Internet
17. Online Shopping Application	Available on the Internet
18. Travel Agency	Available on the Internet
19. Order Processing System	Available on the Internet