CS 752 Software Architecture and Design Practices

Assessment Activity 1 – Architecture Drivers for OAES
(20 marks)

Objective of activity: To systematically develop architecture drivers for a system

Outcomes: Be able identify architecture drivers from functional architecture

1. (5 marks) Create a list of 20 functionality features of OAES system discussed in class. Use the following template for response:

Feature_ID	Feature Name	Feature Description (1 sentence)
1	Registration	Registration specific for the users (students, domain experts)
2	Login	Login to the system for the users
3	Hall Ticket Number Generation	Generate hall ticket numbers for registered students
4	Student authentication during exam	Hall ticket number with student detail authentication before exam
5	Design syllabus	Syllabus design for the examination
6	Question bank creation	Preparing questions by domain experts
7	suggest similarity between questions to identify redundant questions	There may be duplicate questions in bank because multiple people are setting it
8	Assessment pattern creation	creating the questions pattern based on type of response (mcq/essay), marks awarded(1,2,etc), knowledge types (memory or analytical etc), course based
9	Question paper sets design	Based on the assessment pattern, picking questions from the question bank.
10	Key set design	Map the questions with keys and make sets for them for easier evaluation
11	Sample Question Paper take for students	Sample test for practice and understanding of the paper
12	conducting exam	Displaying exam for the student at the correct time
13	Clock feature	Display countdown timer during exam
14	Calculator and preview of answers	Provision of calculator, preview of question & answers to students
15	accepting answers	Automatic submit once it come to 0, and send the answers to the server
16	evaluating tests	Evaluation of answer scripts based on matching key set

17	Release key	Release key sets after exam
18	Release answer script	Releasing the answer scripts of students
19	Release ranks & scores	Announcing Ranks and scores with cutoff
20	shortlisting for interviews	Shortlisting top students for interviews

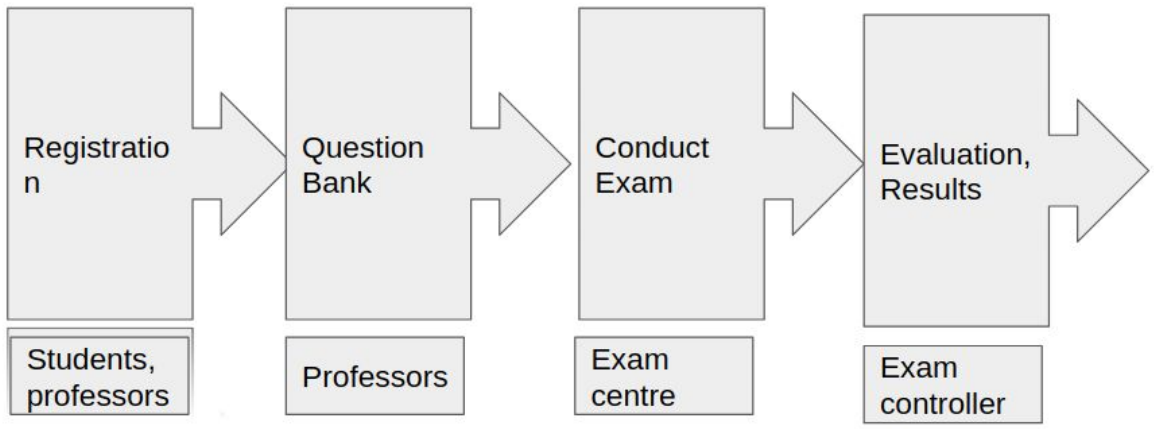
2. (5 marks) Create Functional Architecture diagram and map the features into the functional modules of the functional architecture. Use the following template to record your answer.

Functional Architecture Principles

(State any 3 functional architecture principles used for creating the functional architecture)

Student can write the exam only after authentication
Question paper is set based on assessment pattern and syllabus
Ranks and scores can be released after having the test reports of all the students

Functional Architecture Diagram



Map the features to the appropriate functional modules present in the functional architecture

S.No.	Feature_ID	Functional Module
1	1,2,3,4	Registration
2	5,6,7,8,9,10,11	Question Bank
3	12,13,14,15	Conduct Exam
4	16,17,18,19,20	Evaluation, Results

3. (10 marks) Provide the list of architecture drivers for each functional module. Write at least one architecture driver for each functional module. More the better!

Architecture Drivers		
S.No.	Functional Module Name	Key Architecture Driver
1	Registration	Security (Authenticating users before exam)
2	Question Bank	Robustness (different thought processes from domain experts)
3	Conduct Exam	Scalability, Robustness, security (each centre has its own server, only intranet used, SFTP over internet)
4	Evaluation, Results	Security (digitally signed, Question, answer never travel together)

What to upload:

- Upload your response in the form of a PDF document
- Name of the file: <activity_num>_<rollno>.pdf (e.g., activity01_mt2019001.pdf)