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ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)

ORGANISATION OF ISLAMIC COOPERATION (OIC)

Department of Computer Science and Engineering (CSE)

MID SEMESTER EXAMINATION

SUMMER SEMESTER, 2021-2022

DURATION: 1 HOUR 30 MINUTES

FULL MARKS: 75

CSE 6255: Advanced Internet Computing

Programmable calculators are not allowed. Do not write anything on the question paper.

Answer **all 3 (three)** questions. Figures in the right margin indicate full marks of questions.

1. a) Shopping cart application is a classic example of enterprise web applications development. A client has to be able to put items into his virtual cart. The server has to remember user's items until s/he checks out several page requests later, or sometimes even days later. Product information need to maintained and updated in the database. Moreover, to help the server distinguish among clients, each client's state information needs to be maintained. As the HTTP is a stateless protocol, it provides no built-in way for a server to recognize that a sequence of requests all originated from the same user or not. Based on the scenario answer the followings:
 - i. Which web application model would be suitable for the given scenario? Provide enough justification of your chosen web model including the implementation technologies that you are going to use. 10
 - ii. Draw a web application architectural model for the scenario. 5
- b) Web server and client needs a common communication protocol. Hypertext Transfer Protocol (HTTP) is the communication protocol between server and client. With an example, explain how HTTP request and HTTP response mechanisms work for this communication. 10
2. a) Suppose you have to design your own 'CarML' language. Define your XML tags for describing a car using these tags. Think about what properties should be defined as attributes and what properties are best described as elements. Make sure that your documents are well-formed. 8
- b) What is XHTML? Use XSLT element to convert CarML document in to XHTML document. The output should display only the 'Car Model Name' and 'Manufacturing Year' and highlight with green color for those models whose manufacturing year is greater than 2016. 10
- c) What are the uses of HTTP Servlet? When a client request is sent to the servlet container, how does the container choose which Servlet to invoke? 7
3. a) What do you mean by business logic? How would you separate presentation (HTML) from business logic while using Servlet? 2+8
- b) What is MVC in web application domain? Consider the web application development framework shown in Figure 1. Give an example implementation of this model using servlet, JSP, and JavaBean. 15

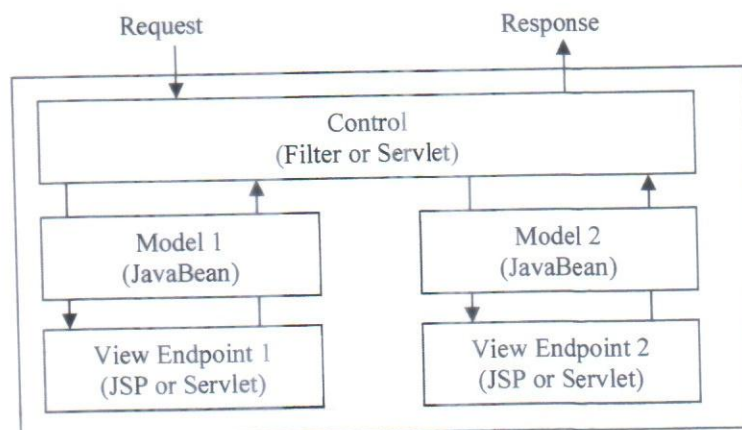


Figure 1: Web application development model architecture for Question 3.b)