

TECHNOLOGICAL UNIVERSITY DUBLIN
CITY CAMPUS - AUNGIER ST

DT354 – BSc Business Computing

Year 3

SEMESTER 1 EXAMINATIONS 2019/20

Web Development 1 (Java)

Internal Examiner: Dr J Munnelly

External Examiner: Dr. Souleiman Hasan

Exam Duration: 3 hours

Instructions: e.g. Answer 4 out of 5 Questions

Tuesday 7th January 2020

9.30 - 12.30

DT354/3 Web Development 1 (Java)

5050

37

1. The java.net package provides support for network programming i.e., writing programs that execute across multiple devices (computers), in which the devices are all connected to each other using a network. Using your knowledge of the java.net package:

- a) Outline code for a 2 player game over a reliable protocol in which player1 has 3 attempts to guess player2's favourite colour (which you can hardcode as blue). After each guess player2 should tell player1 if they were correct or not and after all 3 guesses they should tell them it was blue. Use pointers to explain your code fully.

(13 marks)

- b) Explain, using a code example and explanation, how you might send a simple string message over an unreliable protocol to

- i) One client
- ii) Multiple clients

(12 marks)

[25 marks]

2.

- a) Outline code to take in a booking request for a hotel (Name, contact number and date of stay), process it using a Servlet and confirm it on a resulting webpage. Explain your code in detail to demonstrate your understanding. Include details of how the Servlet Lifecycle is handled.

(18 marks)

- b) Explain what happens when you enter a url in a browser address bar. Use your Servlet example to illustrate what URI would be used and what happens when it is entered.

(7 marks)

[25 marks]

3.

- a) Show code to connect to a MySQL database called "Inventory". Your code should insert a new product of your choice into the existing "Products" table, described below, using a reusable, parameterised technique. It should also show how to obtain all the products from the database, printing the description of each. Explain your code in detail using pointers.

```
mysql> describe products;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	YES		NULL	
description	varchar(30)	YES		NULL	
quantity	int(11)	YES		NULL	

3 rows in set (0.04 sec)

(15 marks)

- b) Describe how, where and why you used state management techniques during the development of Web Applications. Include a code example to support your answer.

(10 marks)

[25 marks]

4.

- a) Outline the code for a basic login scenario in a web application using a Web Framework. After logging in, the user should be brought to a page that welcomes them by name. Include all code, presentation files and configuration files. Explain all your code fully.

Include in your answer details of the sequence of events; from the user first hits enter in the browser, right through to them seeing the welcome page.

(20 marks)

- b) Explain how you would add state management to the application above.

(5 marks)

[25 marks]

5.

- a) Show how you would build the library.jsp page below. It should take in the book information, process it within the jsp, store it in a database and display all books in the page as per below. Outline all code for library.jsp and include explanations to demonstrate your understanding of the code.

Online Library

Add book details below:

Title:
Author:
ISBN:
Year:

Title	Author	ISBN	Year
Da Vinci Code	Dan Brown	0307474275	2009
Harry Potter Box Set	JK Rowling	1338218395	2018

[Back](#)

(15 marks)

- b) Show the use of a tag library in a JSP.

(10 marks)

[25 marks]