

9/1/2019

14.00 - 16.00pm

Basement 3, Kevin Street



DT228 BSc (Honours) Degree in Computer Science

Year 2

WINTER EXAMINATIONS 2018/2019

WEB DEVELOPMENT 2 [CMPU2022]

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Wednesday 9th January

2.00 p.m. – 4.00 p.m.

Time Allowed: 2 hours

Answer Question 1 and any two of the three remaining questions

Question (1) is worth 40 marks
Questions (2), (3) and (4) are worth 30 marks each.

Question 1

(a) Define and describe the Multi-Tier Application Architecture

(10 marks)

(b) A development team is selecting an appropriate web server to support their suite of web applications. List **six** selection criteria that they should consider in their selection. In your answer, name **three** market leading web servers that they may use in their selection.

(10 marks)

(c) What will be the output of the following code?

```
<?php

function track() {
    static $count = 0;
    $count++;
    echo $count;
}

track();
track();
track();
?>
```

- i. 123
- ii. 111
- iii. 000
- iv. 011

(4 marks)

(d) There is a customer table in a MySQL database, in which there are five columns (CustomerNo, Name, Address, UserName, Password). There are approximately 1000 rows in this table. Write code for a PHP Page login program, that does the following:

- Login page contains two input fields: *UserName*, *Password*.
- Login page contains a submit button so that when clicked, it checks if the values of *UserName* and *Password* are both matching records of the table (UserName, Password). It displays Welcome (value of *CustomerName*) or otherwise displays "That customer does not exist in our database. [Click Here to Register](#)".
- Includes appropriate error processing.

(16 marks)

Question 2

(a) What is difference between XML and JSON?

(10 marks)

(b) Rearrange these steps in the correct order. 1. Connect to Database Server 2. Close database connection 3. Execute SQL query 4. Retrieve HTML form data 5. Build SQL statement

- i. 1, 4, 3, 2, 5;
- ii. 5, 3, 4, 2, 1;
- iii. 1, 4, 5, 3, 2;
- iv. 4, 5, 3, 1, 2;

(4 marks)

(c) Write a well-formed XML document and JSON object that represents the data shown in Figure 1.

(16 marks)

Service bill for John Murphy			
Date of Service	Service	ID	Price
20/05/2018	Bathroom Tiling	122837	500
21/05/2018	Install bathroom	129281	1100
Total Charge			1600

Figure 1

Question 3

- (a) What are the main error types in PHP and how do they differ?

(10 marks)

- (b) What will be the output of the following code?

```
<?php
function calc($price, $tax="")
{
    $total = $price + ($price * $tax);
    echo "$total";
}
calc(42);
?>
```

- i. error
- ii. 0
- iii. 42
- iv. 84

(4 marks)

- (c) A Recruit table contains four columns: StudentID, DepartmentID, StudentName and CAOPoints. Write code for a PHP Page that selects all the rows from the Recruit table with CAOPoints more than 450 and displays the rows as a table on a HTML page

(16 marks)

Question 4

- (a) A company has decided to develop their web applications using a *server-side scripting* technology. They have limited their choice to one of PHP or ASP (Active Server Pages). Explain *five* differences between PHP and ASP that they should consider in their decision. (10 marks)
- (b) Why must you call `session_start()` prior to any output?
- Because it is easy to forget if not placed at the top of your scripts.
 - Because you can no longer access the session data store after there has been output.
 - Because `session_start()` sets some HTTP headers.
 - Because calling `session_start()` causes the HTTP headers to be sent.
- (4 marks)
- (c) Create a form like Figure 2, and write PHP code to insert the “First Name, Last Name and Special delivery instructions” collected from the form into an order table. (16 marks)

A bike order form

What type of bike do you want to purchase?
☒ Street bike ☐ Mountain bike ☐ dirt bike

What accessories do you need? ☐ Gloves ☒ Helmet ☐ Camel water bag

Where do you go biking?

Parks
Bike routes

Shipping information
First Name Last Name Address City State Zip code

Special delivery instructions

Payment information
Credit card number Expires 12/10

Figure 2