

PLYMOUTH UNIVERSITY

MODULE CODE: PUSL2020

TITLE OF PAPER: Software Development Tools and Practices

TIME ALLOWED	24 Hours Online
DATE	24 th May 2022
TIME	9:30Am to 9:30Am (24hrs)
FACULTY	SCIENCE AND TECHNOLOGY
SCHOOL	COMPUTING AND MATHEMATICS
ACADEMIC YEAR	2021/22
STAGE	TWO

INSTRUCTIONS TO CANDIDATES:

Answer Five (5) Questions – Total Marks 100

Candidates are not permitted to look at the examination paper until instructed to do so.

Release to library? Yes

In-Class Test

1. A website is a collection of related network web resources, such as web pages, multimedia content, which are typically identified with a common domain name, and published on at least one web server.
 - a. Explain two differences between static and dynamic web pages. (2 Marks)
 - b. Identify the path, protocol, port, domain, and filename in the following URL. (6 Marks)
http://www.plymouth.as.uk:8080/help/exams.html
 - c. State two server-side technologies and two client-side technologies. (4 Marks)
 - d. Describe one of the server-side technologies: include three facts such as developer, cost, ease of use, etc. (6 Marks)
 - e. Name two popular web server names. (2 Marks)

2. State management refers to the management of the state of one or more user interface controls in a graphical user interface.
 - a. Explain one client-side and one server-side state management technique with two facts each, other than cookies and sessions. (4 Marks)
 - b. What are the two types of cookies? (4 Marks)
 - c. Discuss similarities and differences when setting cookies in PHP and ASP.NET. (6 Marks)
 - d. Write C# or PHP code for setting and reading a session variable. (6 Marks)

3. DBMS, database management systems, are a special category of programs written specifically for managing databases.
 - a. Name three different types of storage systems. (3 Marks)
 - b. Name three commercial software programs for managing a DB. (3 Marks)
 - c. Explain the importance of DBMS for web applications stating three facts. (3 Marks)
 - d. What are the required parameters for a DB connection from PHP or ASP.NET? (3 Marks)
 - e. Examine the following code snippet and explain the meanings of **queryString**, **connection**, and **paramValue** providing sample values. (8 Marks)

```
SqlCommand command = new SqlCommand(queryString
                                     , connection);
command.Parameters.AddWithValue("@price",
                               , paramValue);
```

4. The goal of web form validation is to ensure that the user provided necessary and properly formatted information needed to successfully complete an operation.
- What could be the consequences if a form is not validated. (2 Marks)
 - Name four different validator controls in ASP.NET. (4 Marks)
 - Solve the following puzzle using your regular expression knowledge. Note that you need to illustrate how you solve the puzzle. (No marks will be awarded if only the answer is provided.) (14 Marks)

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5. Quality assurance (QA) is a way of preventing mistakes and defects in manufactured products and avoiding problems when delivering products or services to customers. ISO 9000 defines Quality Assurance as “part of quality management focused on providing confidence that quality requirements will be fulfilled”.
- Explain the statement above considering QA principals. (10 Marks)
 - A project manager of a software development company states that the main objective of Software Quality Assurance is to “prove that software is ready to delivery”.
Explain why this is not suitable goal for Quality Assurance Engineer. (10 Marks)
6. You are assigned to test a hotel reservation system. The system is basically has the following features.
- Customers can reserve a room online. Booking must be made 30 days prior to arrival.
 - A guest can book a maximum of 4 rooms at a time.
 - Guests who are having loyalty cards, can claim 40% during their stay between June to August, except weekends and holidays.

- a. Explain the term “good test case”. (5 Marks)
- b. Write down five (5) test cases from above scenario. (15 Marks)