

# ***PUSL2024 Software Engineering 2***

## **Coursework 2021 – 2022**

Term: Term 1 and

**Submission Deadline:** 29<sup>th</sup> December 2021

Coursework Type: Group Assignment (06 Members)

Element of Assessment: C1 & P1

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## Coursework

- Below coursework must be carried out in group of **06 members** each.
- Everyone should contribute and a work breakdown matrix is required.
- There are several self-study-imposed activities which you must undertake to improve your R & D skills as a skilled software professional.
- No email submissions are accepted, and all submissions should be made via the official DLE only.
- All questions must be answered.

## Scenario

XYZ is a leading hotel in the business of hospitality and tourism industry. One of the key drawback of the XYZ hotel is its obsolete website. Compared to the inception of the XYZ hotel, now the business has evolved extensively. Hence, new features like: -

- Online reservation of rooms / conference halls.
- Online payment handling.
- Avoidance of booking collisions
- Visualization of the customer feedbacks for managerial decision making.
- SMS and Email notification of reservation and cancelling options

need to be integrated.

The modern website should be revolutionized with the use of JSP / Servlet technologies.

## Questions.

01. Draw a comprehensive use case diagram with use case narrations for the scenario.
02. Draw a complete class diagram adhering to the **EBC model**.
03. Propose an eligible sequence diagram **for a selected use case**, mapping with the class diagram constructs as well.
04. Develop a sophisticated website using Servlet / JSP technologies adhering to the MVC architecture.
05. Locate an instance where you can introduce a design pattern for logical constructs of the web site's business logics.

06. Justify with proper evidence and clarifications about the suitability of proposed design pattern.
07. Implement thread safe mechanism for the room reservation functionality and explain how you have managed to achieve the thread safety and the advantages of it.
08. What's session management in a web site? How have you managed to accomplish it in this website you developed? Justify your answer with code snippets.
09. Integrate SMS and Emailing facility to improve the user experience of the system.
10. Configure payment handling via PayPal Sandbox configuration or via any other applicable alternative.

## Detailed Assessment Criteria

### Deliverables

#### Coursework (C1) [ 40 % ]

Stages	Marks
Use Case Diagram and Narrations	5
EBC based Class Diagram	10
Sequence Diagram	10
Implementation of the Website with <b>JSP and Servlets</b> adhering to <b>MVC</b>	25
Implement and Justify Design Pattern	10
Thread safe synchronization	10
Session Handling Implementation	10
SMS + Email	10
PayPal Sand-Box configuration	10
<b>Total</b>	<b>100</b>

## Presentation (P1) [ 20 % ]

Stages	Marks
UI / UX	10
Punctuality	10
Comprehension	30
Q & A defense	50
<b>Total</b>	<b>100</b>

## Submission Type

Moodle e-submission through Plymouth Digital Learning Environment (DLE) is compulsory for each module.

Your group will be required to perform a 20-minute defence of your solution at a mutually convenient time (which may or may not be in your timetabled slot). You should ensure that your tables are populated with an adequate amount of sensible test data in advance of this session and it is particularly important that date and time-dependent data is applicable to the date and time of your solution defence. Unless it is unavoidable, all group members should be present at this session.

### Assignment Feedback:

You will receive provisional mark and written feedback within 20 working days of the submission and presentation.

#### Notes:

- You must submit your coursework via the Digital Learning Environment portal.  
**Coursework must be submitted by the specified deadline.**
- You should give due consideration to your personal time management to ensure that coursework is submitted in plenty of time prior to the deadline.
- Coursework can be submitted at any time ahead of the deadline.
- Please note that work submitted late without valid extenuating circumstances will be penalized. Work submitted within 24 hours after the deadline will receive a mark, but it will be capped at the normal pass mark for that module. Work submitted more than 24 hours after the official deadline will receive an automatic mark of zero.
- The report that you present should be supported (where relevant) by appropriate evidence. Any such information that you present must be

appropriately cited and referenced in your report - if you are unfamiliar with referencing style, then a Google search using the term 'Harvard referencing' will help to enlighten you. (Please refer the teaching and learning handbook for more details)

- Although you will be expected to make significant use of printed and online literature in researching and producing your materials, it is not acceptable for you to simply cut and paste material from other sources (small quotes are acceptable, but they must be clearly indicated as being quotes and the source must be referenced appropriately).

### **Academic offences:**

(the following is a fragment of Section AST10.2 from [https://www.plymouth.ac.uk/uploads/production/document/path/8/8388/Section D Assessment.pdf](https://www.plymouth.ac.uk/uploads/production/document/path/8/8388/Section_D_Assessment.pdf))

Academic offences occur when activity is undertaken which could confer an unfair advantage to any candidate(s) in assessment. The University recognises the following (including any attempt to carry out the actions described) as academic offences, regardless of intent:

- a) Copying or paraphrasing of other people's work or ideas into a submitted assessment without full acknowledgement (plagiarism).
- b) Unauthorised collaboration of students (or others) in a piece of work (collusion).
- c) Making false declarations in an attempt to obtain either modified assessment provisions or special consideration (e.g. of extenuating circumstances).
- d) Persuading another member of the University or partner institution (student, staff, or other) to participate in any way in actions which would be in breach of these regulations.
- e) Misrepresenting research outcomes and results.
- f) Being party to any arrangement which would constitute a breach of these regulations.
- g) The inclusion in a piece of assessed work (other than an examination or test) of material which is identical or substantially similar to material which has already been submitted for any other assessment within the University.
- h) Any other activity which could confer an unfair advantage to any candidate(s).

For full details on the academic offences framework and procedures, consult Section AST10 from [https://www.plymouth.ac.uk/uploads/production/document/path/8/8388/Section D Assessment.pdf](https://www.plymouth.ac.uk/uploads/production/document/path/8/8388/Section_D_Assessment.pdf)