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|  | Module Learning Outcome (LO) | Award LO |
| LO1 | Construct server-side programs to enhance the interactivity of Web pages. | Application, Knowledge & Understanding |
| LO2 | Describe alternative approaches to interaction between Web clients and servers. | Enquiry, Reflection |

## Requirements Descriptor:

Design and develop a web-based application to manage Airline Service Process for the following requirements but not limited to.

End of December 2019, COVID 19 new virus was found in Wuhan, Hubei, China. The virus has spread globally since its discovery. Like other countries, we are facing many challenges with COVID 19. The number of COVID 19 victims is increasing day by day. Therefore, public gathering is not so good. In Sri Lanka, most systems are run manually.

Phoenix Airline PVT is an airline with a small online flight booking system. Other processes such as user management, flight management, ticket management, done manually. Currently, they cannot do them manually. So, they required a website for that. There are 3 types of users: Staff, Users (client), and the Admin. Users and Staff can create their accounts by themself. But Staff accounts must be approved by the admin also the admin can add staff members to the system.

There are 2 grades of staff members. Grade one and Grade two. Only Grade one Staff members can update, delete some information. Grade two staff members can view information and only add new flight details. Every activity of the staff and users should be monitored by their ID or email. The admin dashboard can only be accessed by the admin, only staff members can access the staff dashboard, and the user’s (client’s) dashboard can be accessed by users and staff members. Grade One staff members are responsible for adding, updating, deleting flights and checking and updating or deleting ticket information, checking the user's accounts and blocking or updating accounts, and providing information to users via internal chat. Ticket information can be found on the Ticket ID. The admin can monitor every activity of the staff and users. Users can view flights and filter flights on a particular date and destination point. They can also reserve their seat and check their reservations. Users can update their profiles and reservations. The last login time and IP of all users should be monitored. All users can search flights through the flight ID.

You can include more features in addition to discussed above.

**Note:** Students can use any website design framework to make the application more user-friendly and responsive.

**Nature of the assignment:** This is a group assignment, and the size of the group is between 5-6. The maximum limit cannot be exceeded under any circumstances and no student is expected to do the assignment as an individual assignment and is not accepted for evaluation.

**Submission:**

Completed assignment should be written into a CD in complete (All the required resources to open the application should be included in the CD) and submit to the Program Office of Faculty of Computing before 4:00 PM on or before the given submission deadline.

## Marking Scheme

1. **Marks will be awarded for:** Analysis and Design & Implementation **(100%)**

#### Design of a supporting database and UML model diagram (15%)

The site requires a database designed using MySql or any other standard DBMS which will be used by your prototype. Students are encouraged to use NOSQL databases such as MongoDB if required.

The table structures should reflect the content as described in the above scenario and from the benchmarking of web sites as per the advice at the end of this document.

You should also provide a website map (Visio: File/New/Network/Web Site Map) and a basic flowchart for the site (Visio: File/New/Flowchart/Basic Flowchart).

#### Programming of Java Server Pages (40%)

The site requires a number of JSPs to allow the user to do the above scenario: -

#### Testing (10%)

Testing of some of the prototype using a browser will be expected.

We suggest you conduct your testing using a test script or grid to test the expected outcome against actual outcome.

#### Use of Design Patterns such as MVC (25%)

Students are encouraged to use design patterns in your application as we are using Java Enterprise Edition.

#### Demonstrations of your prototype JSPs to the review panel (10%)

The demonstrations will take place over the course of the module, typically at the end of the semester. You will be expected to run through your prototype for a couple of minutes. At this stage the prototype should:

* Have multiple JSP pages, linked together
* Have basic login facilities
* Be based on CSS (style sheets) for the look-and-feel
* Correspond to the initial design diagrams (there should be some very basic documentation)
* Link to a back-end database

1. **Marks awarded for Evaluation- 100%**

## Submission instructions

**Submission 1:** Proposal Submission

**Submission 2:** Submission of Software Application *(21st April 2021)*

**Submission 3:** *Formal Presentation of Implementation (TBC)*

You’re required to present your application to the class.

Hand in the CD on the above date. The media must have been virus checked.

The media should contain the source jsps/html and any other source/compiled java files (.java and .class files) plus the database and document files, images and diagrams.

**More Details:**

**Assignment Owner:** Chaminda Wijesinghe

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| **Final Contribution to Core Elements (As per DMR)** | **Contribution to the final Grading** | **Element** | **Marks Awarded** | **Assessed Learning Outcome** | **Criteria** |
| P1:  Presentation and Q/A (67%) | 40% (Group Mark) | Analysis and Design | 40% | LO1 | Design of a supporting database and UML model diagram- Group Mark Will |
| Implementation  Data Model, JSP, Servlets | 60% | LO1 | Programming of Java Server Pages, Testing, |
| 60% (Individual Mark) | Evaluation | 100% | LO2 | Display insight into strengths and weaknesses of the structure and performance and final product and into personal development practices |

**Submission Type**

Moodle e-submission through N-LEARN is compulsory for each module. Hardcopy submission can be done on the request of the module leader.

**Assessment Offences:**

For this assignment you may be using information from differing sources:

* Books, journal articles
* Course/module hand-outs
* Webpages

Thus, if you:

1. Use text verbatim, i.e., word-for-word.
2. Copy and / or amend figures / diagrams.

Then material used this way must be referenced: The text **must** be in quotes and referenced, and source of the figure/diagram **must** be placed under the figure/ diagram.

And also, you’re advised not to present system which are freely available all work should be original effort.

**The University treats plagiarism very seriously and you are advised to read the relevant sections in your student handbook.**