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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 the 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, the public gathering is not so good. In Sri Lanka, most systems are running manually.

Phoenix Airline PVT is an airline with a small online flight booking system. Other processes, such as user management, flight management, and ticket management, are done manually. Currently, they cannot do them manually. So, they required a website for that. There are three types of users: Staff, Users (client), and 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 two grades of staff members. Grade one and Grade two. Only Grade one Staff members can update or 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, checking, updating or deleting ticket information, checking the user's accounts, 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 and filter flights on a particular date and destination point. 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 those 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:**

The completed assignment should be uploaded to GitHub (All the required resources to open the application should be included), and a report containing all the screenshots of the application should be uploaded to nLearn before the submission deadline. The front page of the report should contain the information of all the group members on a table (Student number, Name, Signature)

## 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 standard DBMS used by your prototype. Students are encouraged to use NOSQL databases such as MongoDB if required.

The table structures should reflect the content described in the above scenario and from the benchmarking of websites 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 few JSPs to allow the user to do the above scenario: -

#### Testing (10%)

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

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

#### Clear demonstrations of your prototype JSPs (10%)

The overall work should be demonstrated clearly in the report. 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:** *Formal Presentation of the design (15th September 2022)*

**Submission 2:** Submission of Software Application (08th October *2022)*

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

**Submission Type**

Moodle e-submission through N-LEARN is compulsory for each Group. Hardcopy submission can be done at 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.

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

And, you’re advised not to present freely available systems. All work should be an original effort.

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