

MODULAR PROGRAMME

ASSESSMENT SPECIFICATION

Module Details

Module Code UFCFB3-30-1	Run 16SEP/1 ay	Module Title Web Programming
Module Leader Zaheer Khan	Module Tutors Zaheer Khan, David Wyatt, Theo Spyridopoulos, Panagiotis Andriotis, Toby O'Hara	
Component and Element Number A1		Weighting: (% of the Module's assessment) 70%
Element Description Group Demo and Presentation		Total Assignment time 24 hours

Dates

Date Issued to Students 30th October 2016	Date to be Returned to Students 7 th April 2017
Submission Place Online submission Blackboard Gradebook Electronic submission system (NO paper submission required)	Submission Date 16 th March 2017
	Submission Time 2.00 pm

Deliverables

Electronically submitted deliverables include:

1. An integrated web system with source code in ZIP file (using e.g., 7Zip). This should contain all the files and folders for the full working website.
2. Relevant Database (e.g. MySQL or MariaDB) dump.
3. A word document that includes names and student ids of all group members. This documents should also provide a very basic guide (or instructions) about how to setup their website for testing including any test usernames and passwords.
4. A presentation in MS PowerPoint (if you are working in Linux these slides can be in PDF format).

All above four items can be submitted in one ZIP file. The naming standard of the zip file is WP1234567.zip where 1234567 is the student Id of a member of the group.

The submission will be by Blackboard Gradebook with **ONE** submission per group but you **MUST** include a student number for each member of your group, within the report and the web site (i.e. programs or scripts).

Module Leader Signature

Zaheer Khan

UFCFB3-30-1 – Web Programming

Assignment 2016-17

This is a group assignment so you'll be working in groups of up to four or five students. Your tutor will form groups randomly. The objective is to work in teams, divide your workload and deliver required output as a team. This will help you to work in a collaborative development environment. All students in a group are expected to contribute equally to gain good marks. A good practice is to plan your project, divide it into tasks with soft deadlines, assign specific role to each group member at the start and keep a log of weekly activities and progress made.

Your group will submit final and complete website that has **integrated** individual components developed by each member of the group. You should submit all source code (i.e. from **htdocs** folder) plus relevant Database dump (e.g. generated by phpmyadmin). You should provide a word document with group student names and Ids and brief instructions about how to setup your system for testing purposes. For demo and group presentation you should provide PowerPoint slides. See deliverables on the front sheet.

The website developers may use Sublime or notepad++ text editors to create python, Javascript, CSS, html etc but, **NOT** any other web development tools without express permission of the module leader. All the Python programs must use version Python34 or above.

The assignment comprises three components with the following marks:

- Quality of **integrated website functionality** and **look & feel** assessed from standard inputs from a case study including any Legal, Ethical, Social and Professional Issues (LESPI) determined by the Tutor **(25%) –assessed by Tutor Review**
- Quality of individual **component functionality** and **look & feel** assessed from standard inputs from a case study including any Legal, Ethical, Social and Professional Issues (LESPI) determined by the Tutor **(60%) –assessed by Tutor Review**
- Quality of group presentation (PowerPoint) by group during Peer/Tutor review containing **maximum 12 slides** each one describing, explaining and justifying how and why each key technology (i.e., Html, CSS, Javascript, Python/CGI, MySQL/MariaDB and any other technology e.g., Bootstrap, JQuery) has been used. One slide should depict and explain the architecture of your overall system (i.e. web server, client/server side programs, database etc) with the rationale of the design choices. Explain how did you plan and integrate different components. Use two PowerPoint slides per individual group member to enable each student to explain his/her part of the system and overall contribution to the team. Here please reflect on group coherence and explain what problems did each individual student encounter and what solution was adopted and why? Give examples. Please reflect on any Legal, Ethical, Social and Professional Issues (LESPI) covered in your group assignment. **(15%) – assessed by Tutor Review**

The tutor review will be carried out in your lecture/lab sessions just after submission deadline. Your tutor will announce the review schedule.

You must use the Blackboard electronic submission system to submit your work – ***only one submission per group is required for the critique but you MUST include a student number for each member of your group. The presentation (in PowerPoint only) and all other components of the deliverables (see above) must be zipped (WP1234567.zip) where 1234567 is the student Id of one of the group.***

Website Development – Inter-City Travel (ICT) Booking Portal

Your group must design and then build an integrated web system for a small travel agency that operates in the United Kingdom. The ICT operates between a fixed number of destinations: Manchester, London, Newcastle, Edinburgh, Birmingham, Bristol, Southampton, Cardiff, Glasgow and Dundee.

The ICT portal has five main components, as depicted in Figure 1, each supporting booking for specific travel mode. **Please note that** if there are four students in a group then they may choose any four components for implementation. The objective here is that each group member can work on one selected component and apply relevant web technologies as appropriate. Then as a group you have to integrate these components to make a functional ICT Booking Portal.

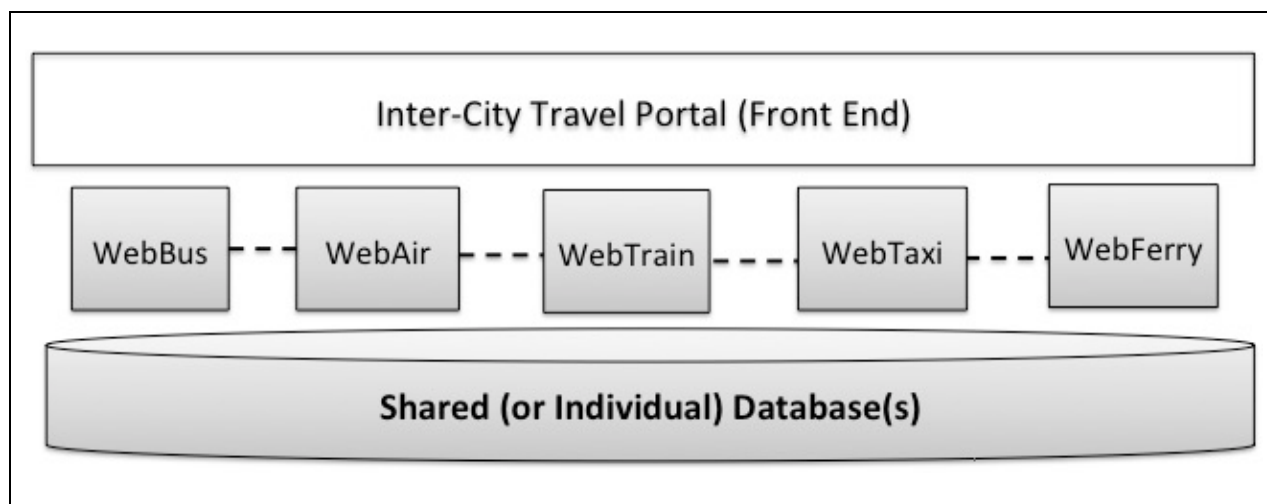


Figure 1: ICT Travel Portal Components

You will need to design a **responsive**, an **attractive**, **functional** and **LESP** compliant web system. The **MoSCoW method** is used to show Must (M), Should (S), Could (C) and Would (W) type of requirements. These requirements are divided into **Group requirements (GR)** and **Individual Component requirements (CR)**. Individual component represents a specific travel mode and its requirements specifications reflect what is needed for that component. So each student will have to fulfil these requirements for his/her selected component. Group requirements reflect specifications which are needed to integrate your individual components and provide an integrated ICT portal. This ICT portal is like **System-of-Systems** that should provide single entry point for travellers to make booking for specific travel modes. Here you'll have to work in team to design and integrate your components.

Individual Component Requirements (CR)

Individual component requires travel booking for a specific travel mode. There are total five travel modes: WebAir, WebBus, WebTrain, WebTaxi and WebFerry. As an example, the timetable for ICT's WebAir component is as follows (**journeys operate Tuesday to Sunday only**):

Leave	At	Arrive	At
Bristol	07:00	Newcastle	08:15
Newcastle	17:45	Bristol	19:00
Bristol	10:30	Manchester	11:30
Manchester	12:20	Bristol	13:20

Bristol	07:40	London	08:20
London	11:00	Manchester	12:20
Manchester	15:30	Bristol	16:30
Bristol	06:30	Glasgow	07:45
Glasgow	14:30	Newcastle	15:45
Newcastle	16:15	Manchester	17:05
Manchester	18:25	Bristol	19:30
Bristol	06:20	Manchester	07:20
Cardiff	06:00	Edinburgh	07:30
Edinburgh	18:30	Cardiff	20:00
Southampton	12:00	Manchester	13:30
Manchester	19:00	Southampton	20:30
Birmingham	16:00	Newcastle	17:30
Newcastle	06:00	Birmingham	07:30
Dundee	10:00	London	11:30

Also, WebAir uses a fixed fare for each journey. Fares are:

Bristol-Manchester (or v.v.)	£30
Bristol-Newcastle (or v.v.)	£50
Bristol-Glasgow (or v.v.)	£60
Bristol-London (or v.v.)	£35
Manchester-Southampton	£30
Cardiff-Edinburgh	£40
All other routes are charged at:	£45

For other components following requirements are identified:

CR1 [M]: Above tables show travel destinations for WebAir only. You need to adapt this table for WebTaxi, WebBus, WebTrain and WebFerry based on the following assumptions:

- WebTaxi fares are 3 times of WebAir fares per passenger.
- WebBus fares are half of WebAir fares per passenger.
- WebTrain fares are twice of WebAir fares per passenger.
- WebFerry fares are half of WebAir fares per passenger.
- All travel destinations are same for WebBus, WebAir, WebTrain, WebTaxi and WebFerry.
- Maximum number of bookable seats for WebBus = 45, WebAir = 100, WebTrain = 200, WebTaxi = 8 per taxi (There are total 5 taxis available for each journey), WebFerry = 200.
- Journey time from one travel mode to another varies i.e. WebBus is 11 times more journey time than WebAir; WebTrain is 6 times more than WebAir; WebTaxi is 7 times more than WebAir; and, WebFerry includes combination of land and sea travel and on average is 8 times more than WebAir.

CR2: The website shows the schedules and fares. User should be able to select a specific journey (i.e. route, date/time and desired number of passengers), see the journey details and booking price before booking the journey (hint: think about features seen during your analysis of Airline companies like Expedia.co.uk, Easyjet.com etc.). [M]

CR3: All children (passengers under 10 years old) receive a 20% discount if accompanied by an adult. However, children travelling alone attract the full adult fare. [M]

CR4: Provide a suitable booking process that should issue a booking number, collect payment and display a formatted receipt with the total journey fare/payment details. This receipt should be downloadable as .txt file. [M]

CR5: The system should validate user inputs for incorrect text-based values entered by users e.g. correct email address, dates, etc. [S]
CR6: The system should be able to generate various admin reports – think creatively. [S]
CR7: Customer should be able to view past and recent bookings. [C]
CR8: The website needs to include a maintenance feature to allow routes and fares to be altered by admin staff – think creatively. [C]
CR9: The website should provide an admin feature e.g. provide a mechanism to allow system admin to view the number of bookings for each scheduled journey and travel mode. [W]
CR10: Provide a mechanism for customers to cancel a specific booking at least 72 hours in advance to journey. Any booking cancellation 72 hours prior to flight departure will result in 50% refund of booking price. Any cancellation later than that will not refund anything; Notify users with the outcome of cancellation before/after cancellation event [W]

Group Requirements (GR)

GR1: All individual components are integrated. For example, a user should be able to explore different travelling options on the ICT website (e.g. travel mode, journey dates, number of passengers, travel time, seats availability and prices etc.). [M]
GR2: The website should show results of alternative travelling modes including journey time and booking cost for a specific journey. This will help end user to decide which travel mode is appropriate to book the journey. The end user should be able to select one of the resulting options and then may proceed to booking. [S]
GR3: An end user should be able to book a journey for any mode of travel. Please note that your group should collectively decide on the booking process that is intuitive and can fulfill GR1 and GR2. [C]
GR4: System should be able to generate various reports – think creatively. For instance, viewing the number of bookings for each scheduled journey and travel mode for a specific date. [W]

You should incorporate any other requirements that seem necessary for a satisfactory travel booking system for ICT web portal. There is a lot of scope for adventurous teams to improve functional (as detailed above and others e.g. secure login for customers and admins) and non-functional aspects (e.g. responsive design, usability etc) – you will need to be selective in what you include!

NOTE: You are NOT required to provide a payment mechanism for your website, though you may simulate this. Hint: Think about PayPal payment buttons.

Teamwork and student roles

Group work is an essential element of this coursework. Please make sure that every student in your group contributes equally. It would be a good idea to keep a diary of tasks you worked on a daily basis as it will help you to identify/verify your individual contributions in the group. You can define roles and responsibilities for each student in your group. Please do consider LESP issues you dealt with in your own role as well as a group. LESP should be reflected in your code and group work.

You must design, develop and implement your website and have it ready for submission by 16 March 2017. **Remember you have to work on the individual component as well as on group part to develop, deliver and demonstrate an integrated ICT booking system.** All group members must attend group presentation to claim any marks. You should be able to justify use of specific technologies for the development of the website. Your design and implementation must show that your team is competent in the use of these technologies:

- HTML
- CSS (style sheets)
- JavaScript

- CGI/Python
- MySQL/MariaDB

Inappropriate use of other technologies will be penalised, but use of Ajax, Bootstrap, JQuery and Python web development frameworks like flask or Django is permissible.

Deliverables

ICT Travel website (source files) and all necessary files fulfilling the requirements listed above (one completed website per group), database structure/dump, setting up instructions and powerpoint presentation.

Marking Scheme for the functionality of the Website

	0%	1% to 14%	15% to 29%	30% to 49%	50% to 64%	65% to 74%	75% to 84%	85% to 92%	93% to 100%
Requirements Coverage (Group) (25%)	No integration - totally unsatisfactory	Initial group planning but couldn't realise it fully	Group coherence and detailed planning for UI design and shared database	Implemented single entry point to ICT, all components have responsive and consistent look and feel, and ICT has shared database (or at least some components e.g. customer details)	All MUST requirements implemented with high standard	LESP issue covered	All SHOULD requirements are also implemented with high standard	All COULD requirements are also implemented with high standard	All WOULD requirements are also implemented with high standard
Group Presentation (15%)	Not present or unsatisfactory	Use of technology presented with some reasoning	Clear roles defined and followed for the development of individual and integrated components	System architecture diagram(s) presented and explained	Examples of issues faced and solutions found presented	LESP Issues covered and presented	Group coherence and planning from start to end – examples included	Example of each client side and server side technologies presented	Advance features presented which were not specified in requirements
Individual Contribution (60%)	Not submitted/ totally unsatisfactory	Limited functionality and use of web technology	A limited or somewhat functionally incorrect website but showing at least some insight and use of the technology (static webpages)	A reasonably well designed responsive website, showing partial functionality and reasonable awareness of the usability & design, (Responsive and dynamic web pages generated)	A functional web site, showing above average awareness of usability & web design; All MUST requirements implemented with high standard	Written to a high professional coding standard and LESP issue covered	All SHOULD requirements are also implemented with high standard	All COULD requirements are also implemented with high standard	All WOULD requirements are also implemented with high standard

Note that *ALL* grades are provisional until confirmed by the appropriate UWE examination board.

The finished ICT Travel website will be assessed during the two working weeks after submission.

Tutor Review

After the formal completion of this work, you will be required to attend the Tutor review sessions, normally in one of the scheduled practical sessions. In these, the other student groups in the lab will review your work and you will review theirs. Your tutor will also review all the work and will provide a mark for each website and demonstration thereof.

More information on the peer/tutor review will be available nearer the time.

Every student who is part of a group undertaking an assignment or other piece of assessed group work is required to take, and will be deemed to have taken, individual as well as joint responsibility for all the work submitted by the group. In particular, this includes individual as well as group responsibility for any assessment offence committed, whether by the student or any other student in the group. Any penalty applied in the event of an assessment offence will normally be applied to all members of the group.