Activity-Led Learning – Project Two

Level 1 – Computer Science

Virtual Robot Bargain Hunt (VRBH)

Activity Brief: Weeks 1-8

Activities Brief – Week 1 (18-22 January)

Welcome to the first week of the Activity-Led Learning (ALL) project 2 sessions. Your project tutor will brief you on the first ALL project and associated assessments, which are detailed in the 'Project2_Assessments_Specification' document.

To start with, you should get to know your team members for the second project. Based on the experience you have acquired from the first project, you should reflect on how you, as a group, should manage the VRBH project more effectively and what tools could be utilised to facilitate the development of your project. Therefore, **as a minimum requirement for Project Two, your group must manage the program development through GitHub.** Please see the worksheet, 'Program Development with GitHub' for guidance. You are encouraged to use other tools for project management. You are also required to produce weekly meeting logs to demonstrate how your project is conducted, managed and monitored.

You are required to develop a program with a graphical user interface which enables virtual robots to carry out the following tasks:

Program requirements
Group work requirements: (contributed to 75% of project marks) Your team is required to develop a program with a graphical user interface which enables virtual robots to search for bargains. The basic elements of the program are required as follows: (contributed to 70% of project marks) • To set up different locations with items, each of which should have a name, type (e.g., clothing, jewellery), price and quantity • To enable a list of items to be specified by the user for a robot to search for bargains • To enable a location specified by the user for a robot to start the searching for a list of requested items • To display the bargain items (i.e. cheapest) requested by the user, along with their locations, on the screen • To allow a robot to gather as many bargain items requested by the user as possible within the given time specified by the user • To display a robot's movement through different locations when gathering the bargain items • To allow a robot to sort the bargain items gathered in an ascending or descending order specified by the user according to certain criteria, such as name or price, determined by the user. • To display the sorted items on the screen
Individual work with extra features: (contributed to 25% of project marks) Each team member may produce extra features, in addition to the above required for the group work.

Based on the above project brief, you should produce a project plan agreed by the group, based on a basic program development life cycle (i.e. design, implementation, testing and evaluation). Your group should discuss and produce a breakdown of work and allocate work to group members.

N.B. Please note that each group member should make sure an equal contribution to all stages of program development life cycle, as the assessment is on an individual basis.

Finally, before starting the project, you should review the Python basics which are given in the 'ALL Projects - Python Programming Basics' worksheets. You will also start to learn the Python GUI (Graphical User Interface) basic features provided in the Tkinter package. Please see details in the worksheet, '**ALL Projects - Python Programming GUIs**'. You should work individually or as a group to complete the programming tasks given in the GUI tutorials. The worksheets will be available to download from ECU178.

Activities Brief – Week 2 (25-29 January)

In Week 2, you should continue and complete the GUIs associated tasks. Next, your team is required to produce the prototype graphical user interface design for the VRBH program.

Next, based on the scenario for the VRBH program, you are required, as a group, to produce a storyboards prototype (i.e. screen outputs). You, as an individual, should report on what the design concepts and principles you have learnt from 106CR (Designing for Usability 1) have been considered and applied to your design.

The final task is to set up your Individual Project Portfolio (IPP) for Project Two. In addition, similar to Project One, you are required to set up an IPP file which will contain a set of sample work using the IPP template.

N.B. Please be reminded that the purpose of the IPP is for an assessor to ask you questions during the viva from the work you have submitted, so that the assessor can verify whether you have understood the areas to be assessed. The content of IPP will not be marked.

For this week, you should start the preparation for your individual IPP for the viva assessment as follows:

- **122COM:**
  - ✓ **a graphical user interface design prototype (i.e. a storyboards with screen outputs) for the VRBH program with your contribution to the GUI design as an individual clearly identified on the prototype**
- **106CR:**
  - ✓ **a report of what design concepts and principles that have been considered and applied to the prototype design (a maximum of 500 words)**

Activities Brief – Week 3 (1-5 February)

This week, you should continue and complete the GUIs associated tasks, if you have not done so. You are also required to research and understand the basics of searching algorithms. You will be given the examples of basic searching algorithms given in the worksheet, 'ALL Projects – Search Algorithms' and complete the exercises. The worksheets will be available to download from ECU178 in this week.

In addition, you are required to document the program flow in UML activity diagrams. You should work as a team to produce the program designs that meet the requirements.

For this week, you should start the preparation for your individual IPP for the viva assessment as follows:

- **122COM:**
  - ✓ **a report of your research on search algorithms supported with in-text citations/references. (A maximum of 500 words)**
- **104KM:**
  - ✓ **UML activity diagrams for the program flow with your contribution to the design as an individual clearly identified on the diagrams**

Activities Brief – Week 4 (8-12 February)

In this week, you should complete the GUIs associated tasks. You will also be learning basic sorting algorithms, which are given in the 'ALL Projects – Sorting Algorithms' worksheet for details. You are required, as an individual, to carry out a research on a sorting algorithm of your choice, and you should then as a group decide a sorting algorithm to be implemented for the Project. The worksheets will be available to download from ECU178 in this week.

You may wish produce the program flow in pseudo-code to assist in the development.

For this week, you should start the preparation for your individual IPP for the viva assessment as follows:

- **122COM:**
  - ✓ **a report of your research on sorting algorithms supported with in-text citations/references. (A maximum of 500 words)**
- **104KM:**
  - ✓ **Updated UML activity diagrams for the program flow with your contribution to the design as an individual clearly identified on the diagrams**

Activities Brief – Weeks 5-6 (15-26 February)

In weeks 5-6, based on the design you have produced, your team should work together to implement the VRBH program and carry out the testing to ensure the program function successfully and meets all of the functional requirements in your design.

In addition to the program developed as a group (contributed to 75% of the project marks), each member of the group can also add extra features to the program as an individual piece of work (contributed to 25% of the project marks).

Also, you are required to update your Project Work Portfolio (PWP) with the work from project two.

For this week, you should start the preparation for your individual IPP for the viva assessment as follows:

- **122COM:**
  - ✓ **Program implementation – GitHub commented code including algorithms (e.g. searching and sorting algorithms) and external libraries/APIs with screen shots of key functionality testing**
  - ✓ **One additional feature implementation on GitHub (individual work)**
- **PWP – the link to your up-to-date Project Work Portfolio (PWP).**

N.B. GitHub:

- A Link to your group's GitHub repository
- Screenshots of your group's commits to GitHub (as a list), highlighting the commits that you have made
- Screenshots of open and closed issues (as a list), showing your use of assigning users to tasks and labelling tasks as "bugs" and "enhancements"
- Screenshots showing issues assigned to you (as a list)
- A copy of your README.md File
- Please note that you should make sure all screenshots are readable and give the assessor the "CovUniStaff" access to see your repository.

Activities Brief – Week 7 (29 February – 4 March)

In this week, you should complete the implementation and testing of the program and ensure all functionality work well together.

In addition, you are required to evaluate your program using one of the usability methods (such as heuristic analysis, usability tests and cognitive walkthroughs) learnt from the module, 106CR (Designing for Usability 1). You are required to produce a prototype demo and present to another development group who will act as your clients for the project and revise your program where appropriate based on the feedback. Your group will also act as clients to provide feedback to a different group. Please note you should not present your demo to the same group to which you act as a client.

Finally, you should start the preparation for a group presentation (including a program demo) in week 8. The presentation is a formative assessment, i.e. for feedback only and will not be marked. You are required to prepare a 10-minute group presentation (such as PowerPoint, Prezi) to which each group member should contribute equally, which may include the following but is not limited to:

- What you have achieved as a group
- What problems you have encountered and how you resolved them
- What you have learnt from working as a group (in terms of skills and knowledge)

For this week, you should start the preparation for your individual IPP for the viva assessment as follows:

- **106CR:**
  - ✓ **Program usability testing – a report (a maximum of two pages) on the evaluation of the program using one of the usability methods (such as heuristic analysis, usability tests and cognitive walkthroughs)**
- **122COM:**
  - ✓ **Program testing and results**

Activities Brief – Week 8 (7 – 11 March)

In this week, your team are required to deliver a program demo and a group presentation to tutors and the other groups in your project sessions.

You should also complete the IPP with your sample work from Project Two in preparation for the viva assessment.

Summative Assessments

Summative Assessment: (as part of end-of-year coursework marks)

Assessment items	Requirements
Individual viva	Oral exam to an assessor (with evidence of work on your IPP in a PDF file)

IPP PDF Submission Date: 13 March 2016 by 23:55 (on Moodle for viva reference only)
Submission Date: 14-24 March 2016 (timetable announced on Moodle later)

***Please note that if you fail to attend your viva (oral exam), a zero mark will be awarded. Please also note that you must be available in the period of 14-24 March 2016 for viva. A time slot will be allocated for you and cannot be changed.**

If you wish to apply for an extension or deferral due to mitigating circumstances, you need to submit the extensions application form (Examination/coursework deferral /extension application form, which can be downloaded via the link at: https://share.coventry.ac.uk/students/Registry/Documents/Deferral%20and%20Extension%20Form%202015-16%20FINAL.doc?Web=1) with third part evidence before your viva assessment deadline. The application is subject to the Registry's approval.

*Please note the above is subject to change.