Dept of Computer Science and Information Systems

BSc Final Year Project Form (2017/2018)

1. Proposal

The student should complete parts 1(a), 1(b), 1(c) and 1(d) below, and then agree the maximum pocket values with the supervisor and put these in part 2(a) below. An electronic version of this form should be uploaded to the Final Year Project page on Moodle no later than **Monday 6th November 2017**.

(a) Student details

Name:	Module
Claudius de Moura Brasil	**Project BSc Computing Type 4 (BUCI027S6)**
Email:	
dinhobahai@hotmail.com	

(b) Project details

Title: The design and build of a simple personal finance system, focused on budgeting and analysing expenditure

Objectives:

To develop a basic personal finances system which shall include:

- an income and expenditure analysis tool, which will include a system to categorise these types of transactions;

- a budgeting tool, which will use income and expenditure data to produce periodic budget estimates.

Time permitting, the features below will also be included:

- a personal tax estimator;

- a feature which analyses entered categories for income and expenditure data, and uses it to suggest categories for any new entries;

- a web server which will store categories and patterns related to them to attempt to improve the accuracy of the category suggestion tool.

Description:

Design a simple application to assist with personal finances. The system will be based on the accounting principle of double entry. The project will include a description of this system, and what are its advantages and disadvantages. It will try to implement this using databases and an application layer, by restricting the operations allowed on the tables holding the income and expenditure data to 'Read' and 'Insert', with some limited access to 'Create'. This restriction may be implemented within the database itself and/or at the application layer level.

The application will be hosted in the user's machine, and will allow the user to upload bank and credit card statements in a suitable format (initially CSV, but time permitting the program will be adapted to accept other input types). It will then ask the user for category names for each entry, and for a pattern to match that category. This pattern will be later used to match future entries and try to suggest a category for them.

The interface implemented shall allow the user to:

- view and export income and expenditure reports by period;

- generate a budget based on that data; and

- save the budget for comparison with future income and expenditure.

Time permitting, a feature will also be implemented to allow the user to estimate whether they have over or under-paid taxes. This will be an estimate only, and should be used as a guideline to help the user decide if they should take a closer look at their taxes.

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Method:

This project will be developed over a few iterations, following the approach below:

- Define the requirements;

- Analyse them;

- Design a solution;

- Implement and test it.

The first few iterations should be spent on elaboration and should result on an initial minimum viable product, so during these more time should be spent on analysis and design. Whereas the last few iterations will be more focused on construction, so should see more time dedicated to design and implementation of the solution.

Test Driven Development shall be used throughout the implementation phase to facilitate testing, and where appropriate design patterns will be used. Also, as much as possible the classes and entities shall adhere to SOLID principles.

Git will be used for version control.

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Work Plan:

The plan below is a rough estimate of the work, and will be changed and/or adapted according to the project's needs:
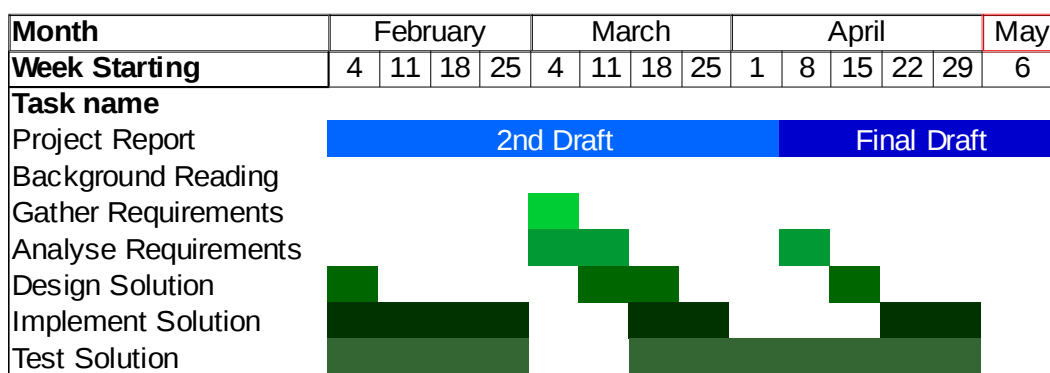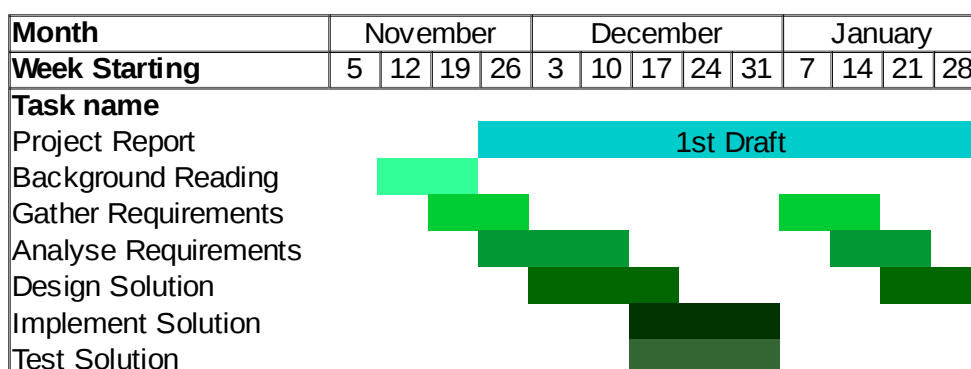
- Submit project proposal by 6/Nov/2017;

- Finish most of the relevant research of the problem domain (Accounting) by 19/Nov/2017;

- Gather detailed requirements of a personal finance program by 26/Nov/2017;

- Finish analysis and documentation of these requirements by 10/Dec/2017;

- Design (model) most of the back and some of the front-end logic of the program by 17/Dec/2017;

- Finish a TDD developed Minimum Viable Product (MVP) by 31/Dec/2017. The MVP should allow users to:

    - upload bank and credit card statements in CSV;

    - view and export income and expenditure reports by period;

- Based on experienced gained over the previous phases, gather and analyse the budgeting features by 14/Jan/2018;

- Submit first draft of project report to supervisor for revision by 28/Jan/2018;

- Finish revision of existing model to include new budgeting features by 4/Feb/2018;

- Deliver TDD developed second version of software by 25/Feb/2018. This version should allow the users to also:

    - generate a budget based on existing income and expenditure data; and

    - save the budget for comparison with future income and expenditure.

- Gather requirements for tax calculation feature by 4/Mar/2018;

- Analyse and document these requirements by 11/Mar/2018;

- Finish revision of existing model to include tax feature by 18/Mar/2018;

- Deliver TDD developed third version of software by 25/Mar/2018. This version will include the aforementioned feature to allow the user to estimate the correct amount of tax they should have paid;

- Submit second draft of project report to supervisor for revision by 1/Apr/2018;

- Analyse and model any further final touches which may need to be implemented by 15/Apr/2018;

- Finish final debugging and testing by 29/May/2018;

- Submit printed and electronic versions of project report by 6/May/2018;

- **Final deadline for submission: Tuesday, 8ᵗʰ of May 2018.**

(Continues...)

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(… Continued) Work Plan:

Below is a chart which will hopefully assist to illustrate the plan described above:

Month	November				December					January			
Week Starting	5	12	19	26	3	10	17	24	31	7	14	21	28
Task name													
Project Report					1st Draft								
Background Reading													
Gather Requirements													
Analyse Requirements													
Design Solution													
Implement Solution													
Test Solution													

Month	February				March				April					May
Week Starting	4	11	18	25	4	11	18	25	1	8	15	22	29	6
Task name														
Project Report	2nd Draft								Final Draft					
Background Reading														
Gather Requirements														
Analyse Requirements														
Design Solution														
Implement Solution														
Test Solution														

College equipment required:

Possibly a web server and the SQL database available there, which need to be accessed on premise or via VPN.

(c) Ethical issues

Have the guidelines on research with ethical implications been consulted by the student? **yes/~~no~~**.
See http://www.bbk.ac.uk/committees/researchintegrity/GuidelinesonResearchwithEthicalImplications.pdf

(d) Supervisor details

Name: Peter Wood	Date agreed:

2. Evaluation Report

Please note the following descriptions of projects of types 2, 3 and 4, as given in the Project Briefing document.

Type 2: Information Systems Research projects (BSc in ISM only)
An Information Systems Research project involves the investigation of information systems phenomena usually using interpretative research methods such as case studies or action research. Often the phenomena are newly emergent technologies and their social settings, development approaches or some aspect of the success or failure of an information system. Students who are considering a Type 2 project must take the module Research Methods in Management prior to enrolling for the project module. Supervision is carried out by the DCSIS.

Type 3: Information Systems Development projects
An Information Systems Development project could involve the requirements capture and design of an information system or the evaluation of an existing system in order to identify problems and suggest improvements. Code may be written to check the feasibility of requirements or for comparison with existing code. Supervision is carried out by the DCSIS. Any code implemented during the project must be demonstrated to the supervisor and supplied on a disk or USB memory.

Type 4: Computing projects
A Computing project involves the use of one or more programming languages for implementing a system or for investigating particular algorithms and data processing methods or for investigating computer based models of natural or artificial phenomena. Supervision is carried out by the DCSIS. Any code implemented during the project must be demonstrated to the supervisor and supplied on a disk or USB memory.

The marks are divided among five pockets, as shown in the table below. The mark for each pocket is selected by the student, but in consultation with the supervisor, from the range of marks associated with the pocket. The table contains a default selection of marks, namely 15%, 15%, 50%, 20%, 0%. Other selections by the student are possible, provided each selected mark is in the appropriate range and the total adds up to 100%. For example, 10%, 10%, 60%, 20%, 0% is an alternative selection. If no selection is made then the default marks apply.

The examiners should complete parts 2(a) and 2(b) below. All examiners should send the completed electronic copy of this form to the course administrator (bscadmin@dcs.bbk.ac.uk).

(a) Examiner's report

First/Second/Third Examiner [Delete as appropriate] Name:	Date received:
Pocket A: Proposal Mark .... out of ....10%.... (10% -> 15%)	
Pocket B: Awareness and understanding of related work Mark .... out of ....10%.... (10% -> 20%)	
Pocket C: Achievement, taking into account the difficulty of the project and also including but not limited to **Type 2: understanding and investigation of information systems phenomena** **Type 3: requirements capture, design or evaluation of an information system** **Type 4: design, layout and effectiveness of the code. If you are the supervisor, then indicate when you saw the code demonstrated.** Mark .... out of ....60%.... (40% -> 60%)	
Pocket D: Grammar, spelling, structure and coherence of the report, ability to present complex or technical material Mark .... out of ....20%.... (15% -> 25%)	
Pocket E: Other Mark .... out of ....0%.... (0% -> 15%)	
Date returned:	**Total .... out of 100%**

(b) Student feedback