COMP1632 (2018/19)	Systems Development Project	Faculty Header ID: 300478	Contribution: 50% of course
Course Leader: Dr Elena Irena Popa	COURSEWORK 1		Deadline Date: Saturday 15/12/2018
This coursework should take an average student who is up-to-date with tutorial work approximately 50 hours Feedback and grades are normally made available within 15 working days of the coursework deadline			
Learning Outcomes: A,B,C			

Plagiarism is presenting somebody else's work as your own. It includes: copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort; copying another student's coursework; stealing coursework from another student and submitting it as your own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set down by the University. Please see your student handbook for further details of what is / isn't plagiarism.

All material copied or amended from any source (e.g. internet, books) must be referenced correctly according to the reference style you are using.

Your work will be submitted for plagiarism checking. Any attempt to bypass our plagiarism detection systems will be treated as a severe Assessment Offence.

Coursework Submission Requirements

- **An electronic copy of your work for this coursework must be fully uploaded on the Deadline Date of** 15/12/2018 **using the link on the coursework Moodle page for COMP1632.**
- **For this coursework you must submit a single PDF document. In general, any text in the document must not be an image (i.e. must not be scanned) and would normally be generated from other documents (e.g. MS Office using "Save As .. PDF"). An exception to this is hand written mathematical notation, but when scanning do ensure the file size is not excessive.**

- **For this coursework you must also upload a single** ZIP **file containing supporting evidence.**
- **There are limits on the file size (see the relevant course Moodle page).**
- **Make sure that any files you upload are virus-free and not protected by a password or corrupted otherwise they will be treated as null submissions.**
- **Your work will not be printed in colour. Please ensure that any pages with colour are acceptable when printed in Black and White.**
- **You must NOT submit a paper copy of this coursework.**
- **All courseworks must be submitted as above. Under no circumstances can they be accepted by academic staff**

The University website has details of the current Coursework Regulations, including details of penalties for late submission, procedures for Extenuating Circumstances, and penalties for Assessment Offences. See http://www2.gre.ac.uk/current-students/regs

Note: This is an individual coursework!! All work submitted must be your own unaided work.

Case study: The Greenwich Community Theatre (GCT)

The Greenwich Community Theatre is a local <u>theatre</u> located in south-east <u>London</u>. It is a mid-scale venue adapted from a Victorian building. Since 2000 the theatre has forged a commitment to, and a reputation for, high quality accessible performances for all. With its beautiful stage and intimate auditorium, Greenwich Community Theatre is ideally suited to the presentation of various types of performances such as musicals, dramas, comedies and tragedies.

The theatre runs daily scheduled evening performances except Sundays and has an additional scheduled matinee (afternoon) performance on Saturdays. From time to time, there are additional special matinee performances of plays, mainly for children. Children and OAPs (Old Age Pensioners) are given a 25% reduction.

Theatre tickets can be booked in one of the following ways:

1. Customers can phone up to book tickets with their credit cards, paying on booking. The operator then provides them with a confirmation id. On the day of the performance the customers can collect their tickets from the special collection booths, using their credit cards.
2. **2.** Customers can go to the ticket office during working hours and buy the tickets with cash, cheque or credit card. In the last hour before the start of a performance, this method incurs a 10% discount on the full price.
3. Agencies and social clubs can phone to book tickets. These are charged directly to accounts they hold with the theatre. There is a discount of at least 5% on the nominal price. This is increased by a further 5% for bookings of more than 20 tickets for a single performance.

Ticket prices vary depending on the performance and the location of the seats. The seating plan (figure 1) identifies three different price bands A through to C.

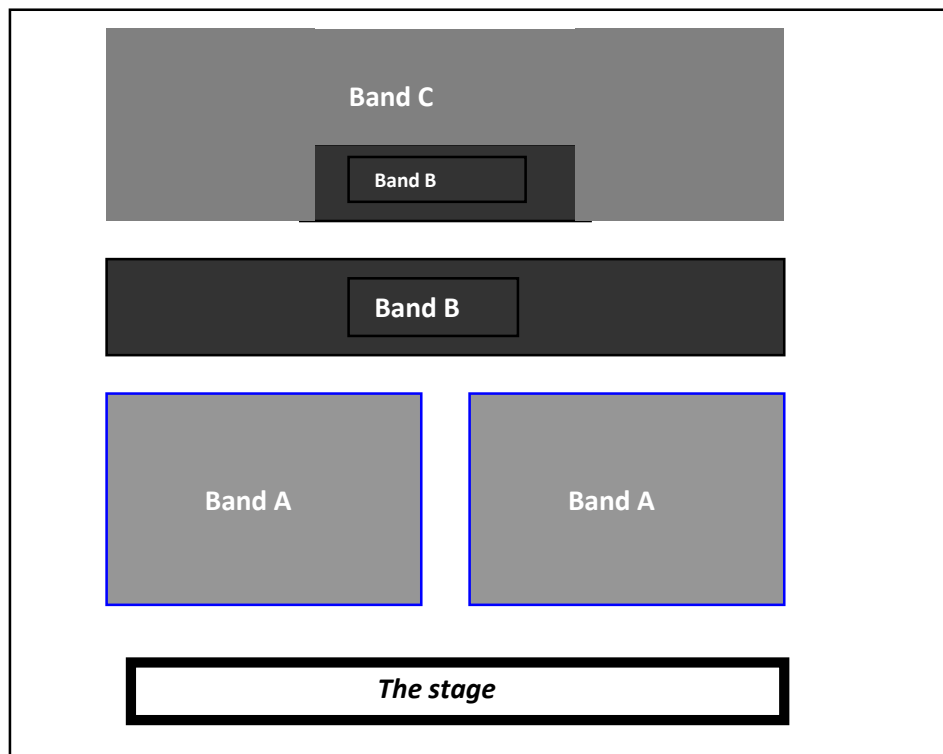For each band, there is a different price for each performance.

Figure 1. Layout of the GCT

The Greenwich Community Theatre is at the moment controlled by the Greenwich Cultural Centre Authority. The Board of Directors of the Greenwich Cultural Centre Authority have decided that it is now time for the **development of a software system which will facilitate the automatic booking of tickets for performances.** They believe that having such an automated system will save them time and money as the sales staff at the counters will not have to manually be filtering such information and thus they will be able to serve more customers.

However, the sales staff are not particularly keen on the development of a computerised system. Most of them have been working there for years and therefore they prefer sticking to their old way of working rather than having to deal with computers. They are reluctant to go through training and they don't see the value of automating the process of booking tickets.

The Board of Directors still believe this will speed up work. Their vision is to attract more customers and they believe that this new system has a great potential in helping them to achieve that.

They are also thinking to provide customers with cheaper options of theatre ticket bookings such as booking theatre packages (book for 4 plays and get one ticket free), or the weekday's special offers (watch a play any day between Monday and Thursday with a 10% discount).

The Board of directors believe that one of the keys to increase sales is to expand their services by housing plays that might appeal more the younger audience. The sales staff, however, feel that promoting such plays might risk their reputation of providing high quality performances.

With the theatre industry affected by the economic crisis, the Board of Directors believe that by expanding their services and providing other options for customers to book tickets, such as by allowing those to browse their online plays list and place orders online at a discounted price will enable them to attract new customers and increase market share. They also feel that by allowing customers to share/write their honest views about a play and their experience at the GCT online, will have a positive impact on their reputation.

A new option the system shall support is therefore for Customers to write reviews and also order tickets online using conventional electronic "shopping basket" and "check out" functionality.

All online payments will be by credit card. The checking of credit card details will be done by the theatre's bank, through a link to a system known as VISACheck. The VISACheck system acts as an interface between the theatre and their bank's credit check services.

Customers will have the option to choose from several different shipping methods and rates based on a formula related to the urgency of an order, or collect their tickets on the day of the performance from the special collection booths, using their credit card.

During the process of booking, the system should allow the operator, or the customer (if this happens online) to select the seats to be booked on a graphical representation of a seating plan, mark them as booked, calculate the individual and total prices and issue a reservation slip. When processing a payment, the system will print the tickets and produce a receipt showing a breakdown of the total payment.

You are consultants called in to assist the Greenwich Community Theatre with the analysis, design and development of their new hybrid system. They have a tight deadline of 6 months for the system to go live, staff should be trained within 2 weeks and the analysis, design and development of the new system should be within the budget of 40.000 pounds as decided by the Board of Directors.

Deliverables

You are required to produce a report documenting details on your project management approach, as well as the initial analysis and design of given system. The report should be brief and to the point. In preparing your UML diagrams, you can use any CASE tool. **The report should include the following sections (in this order):**

1. **The SMART objectives** relevant to your project. Assumptions should be stated clearly. Make sure that the objectives are specific, measurable, achievable, realistic and time-framed. (3-5 objectives, 300 -400 words)

2. **A Rich Picture** serving as an initial exploration of the primary issues, conflicts, processes and stakeholders; include any assumptions you had to make throughout this process.

3. **A root definition and CATWOE** to be used as a starting point for the proposed design. Include a discussion regarding the **key stakeholders** - include brief descriptions (400 -500 words)

4. Project management documentation:
   a. **Screenshots of your Gantt Chart** based upon your Work breakdown structure for the project. Clearly identify individual activities, **dependencies** and **parallel activities.** Your MS Project file should be submitted as a zip file in the relevant Coursework Submission area**.**
   b. **Costs** associated with your project. (staff, equipment, other resources and consumables together with any fund set aside for contingencies). Itemise **each cost**, showing **when the expenditure would be incurred**, and indicate whether this is **within the budget**. Present your figures in the form of a table (150~200 words).

5. A section regarding the **System development methodology** you propose for the process. (400-500 words)

6. A list of **functional** and **non-functional** requirements. For non-functional requirements, include organisational constraints, technical constraints, security constraints etc (300-400 words)

7. **Analysis UML documentation:**
   a. **A Detailed Use Case diagram** (use <<includes>> and <<extends>> where appropriate) from the perspective of the main actors.

b. **A conceptual Class Diagram** demonstrating the main classes with their attributes, methods and associations (aggregation/composition and generalisation where appropriate).

Your report also needs to include:
1) A title page with your name and student ID.
2) Table of contents with appropriate sections.
3) Page numbers.

You must ensure that the diagrams are readable! They are best reproduced on a separate page.

Grading Criteria

Your work will be assessed for the quality of the report you will produce. In particular, marks will be awarded for:

1) Suitable project plan and demonstration of superior use of the MS project.

2) Correct use of the first three stages of the Soft systems methodology.

3) Correct use of UML notation.

4) Suitability and consistency between the UML models (This includes selecting suitable aspects to model for each of the diagram types).

5) Coherence between the proposed system, as expressed in the root definition, with the UML diagrams.

6) Demonstration of independent thinking.

Assessment Criteria

Typically marks will be awarded as follows:

70+ marks	- Excellent - A thorough understanding of the subject. - Excellent knowledge of project management tools and techniques. - Mastery of relevant methods and techniques (e.g. UML modelling and SSM techniques). - Extensive range and consistent accuracy of information and knowledge. - Fluent argument demonstrating independent thinking or critical insight. - Outstanding presentation, structure and standard of English.
60-69 marks	- Very Good - A clear understanding of the subject. - Very good knowledge of project management tools and techniques. - Competent application of relevant models and techniques (e.g. UML modelling and SSM techniques). - Wide and accurate range of information and knowledge deployed.

	▪ Clear argument which may demonstrate a degree of independent thinking or critical insight. ▪ High quality of presentation, structure and standard of English
50-59 marks	▪ Good ▪ A sound understanding of the subject. ▪ Good knowledge of project management tools and techniques. ▪ Knowledge and some application of relevant models and techniques (e.g. UML modelling and SSM techniques). ▪ A standard and largely accurate range of information and knowledge. ▪ May rely more on knowledge rather than on argument. ▪ Satisfactory quality of presentation, structure and standard of English.
40-49 marks	▪ Adequate ▪ Basic understanding of project management techniques. ▪ A basic understanding of the subject. ▪ Some knowledge and simplistic application of relevant models and techniques (e.g. UML modelling and SSM techniques). ▪ A familiar or limited range of information and knowledge deployed, with some areas of inaccuracy. ▪ Argument and analysis may not be fully developed. ▪ Acceptable quality of presentation, structure and standard of English.
<40 marks	▪ Unacceptable standard. ▪ Lacking of basic understanding of the subject. ▪ Minimal understanding of project management tools and techniques ▪ Insufficient or inaccurate knowledge of the subject, its models and techniques (e.g. UML modelling and SSM techniques). ▪ Inability to develop a reasoned argument. ▪ Unacceptable quality of presentation, structure and standard of English.

DETAILED MARKING SCHEME FOR COMP1632 COURSEWORK1

Section for which mark is awarded:	Marks
The SMART objectives relevant to your project. Assumptions should be stated clearly. Make sure that the objectives are specific, measurable, achievable, realistic and time-framed. (3-5 objectives, 300 -400 words)	**10**
A Rich Picture serving as an initial exploration of the primary issues, conflicts, processes and stakeholders; include any assumptions you had to make throughout this process.	**10**
A root definition and CATWOE to be used as a starting point for the proposed design. Include a discussion regarding the **key stakeholders** - include brief descriptions (400 -500 words)	**15** **(5-root definition)**
Project management documentation: • **Screenshots of your Gantt Chart** based upon your Work breakdown structure for the project. Clearly identify individual activities, **dependencies** and **parallel activities.** Your MS Project file should be submitted as a zip file in the relevant Coursework Submission area**.** • **Costs** associated with your project. (staff, equipment, other resources and consumables together with any fund set aside for contingencies). Itemise **each cost**, showing **when the expenditure would be incurred**, and indicate whether this is **within the budget**. Present your figures in the form of a table (150~200 words).	**15** **(10 – Gant Chart 5 – costs)**
A section regarding the **System development methodology** you propose for the process. (400-500 words)	**10**
A list of **functional** and **non-functional** requirements. For non-functional requirements, include organisational constraints, technical constraints, security constraints etc (300-400 words)	**10**
Analysis UML documentation: **A Detailed Use Case diagram** (use <<includes>> and <<extends>> where appropriate) from the perspective of the main actors.	**20** **(10 each)**

A conceptual Class Diagram demonstrating the main classes with their attributes, methods and associations (aggregation/composition and generalisation where appropriate).	
Coherence, structure and sophistication, presentation Students are expected to follow a coherent development process using object-oriented approach. These marks are awarded for how well the whole report holds together and how sophisticated it is. Does the analysis show a certain level of complexity? How well do the diagrams show the skill of the student? Here we are looking for demonstration of independent thinking. Also, here marks are given for coherence and consistency between the various diagrams. Marks are awarded for all elements of presentation, particularly spelling and grammar, editing and diagram presentation.	**10**