



Family Name(s):	Student ID No.
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Forename(s):

**Declaration:** I / We declare that this Coursework is my / our own work. Cheating is a serious academic offence. I / We have read and agree to abide by the University guidance on Academic Honesty. I / We consent to appropriate storage of our work for plagiarism checking.

**Signature(s):**

**Time taken to complete assignment (hrs):**

Module Title: Systems Development and Procurement	Assignment Title: Individual assignment
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Lecturer: Mr. Puttaswamy

Assignment Type: Individual

Hand-out Date: 25<sup>th</sup> July 2016,

Estimated Time (hrs): 32

Work proposal submission date: 11<sup>th</sup> August 2016, 11:59pm

Date of Submission: 8<sup>th</sup> September 2016, 11:59 pm

**Learning Outcomes Assessed (or on separate sheet)**

As on assignment

Assessment Criteria (or on separate sheet)	Max	Awarded
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1. Individual topic paper

100

Comments	Total	
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Total

Assessor's signature:	Date:	Penalty	
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Penalty

Final Mark	
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**Individual Assignment-Summer 2016  
Systems Development and Procurement (ECM39IS)**

**Work proposal submission date: 11<sup>th</sup> August 2016, 11:59pm**

**Submission Date: 8<sup>th</sup> September 2016, 11:59pm**

**Total Marks: 100**

### **Introduction**

This is an individual assignment aimed to give the student exposure to the concepts and principles underpinning Information Systems Development and their application to a realistic scenario.

### **Background of the assignment**

This individual assignment is an opportunity for student to analyze the requirements, evaluate methodologies and tools and to apply the chosen methods and tools to design a software system for a realistic scenario provided. This assignment requires the compilation and presentation of the findings/discussion in the format of a report inclusive of design diagrams—well edited, attractive, and professionally laid out and academically sound.

### **Outcomes of the assignment**

1. Discussion of various approaches/methodologies used in the development of information systems and proposing an appropriate one for realistic scenario.
2. Critical evaluation of alternative options for requirement capturing.
3. Apply an effective user/system requirement capturing technique.
4. Proposal for the tools and techniques for the design, and development of information system with respect to the scenario provided.
5. Design and develop static and dynamic models with the usage of appropriate tools

## **The System Development for Qurum Natural Park**

### **I. Background**

A Qurum Natural Park is going to be established. The Qurum Natural Park will consist of many different amusement facilities located in different area zones. In order to track and monitor the customers' choices in playing facilities, each customer will be given a ticket containing a RFID tag before entering the park. The tickets can be read by the sensors deployed at the entrance and exits of each facility.

The manager in charge desires to set up an advanced PMS (Player Monitoring System) to record and process the information sent from each tickets, aiming to provide better customer service. The registration work is done by the ticket sellers at the box and the hardware production and deployment has already been finished. So only the software-related analysis of PMS is left to you.

### **II. User Requirement**

The manager has given the following user requirements:

1. Before playing a facility, the players must first place the tickets on the sensors set at the entrance of the facility. The PMS will record the entry. Then they are free to enjoy the excitement brought by the facility. Upon leaving, the user needs to present the ticket again on the sensors at the exit of the facility. An exit record will be saved by PMS.
2. If the number of players in the area of a facility has exceeded the threshold number that a facility can hold, PMS will issue a warning message on the Desktop PC screen of the manager in charge when the customers tab their tickets.
3. At 10 P.M. of each day on the screen of the computer the manager works on, PMS will remind the manager of generating the daily report on usage frequency of each facility? The manager then asks PMS to sort out ten least popular facilities and show it on the screen. After the manager's confirmation, PMS will generate the report including each total entrance number of each facility visited by the customers from 9 A.M. to 5 P.M. on that day. In the end the manager saves the report to file.
4. At 10 P.M. on every 15th of each month, PSM will automatically produce a monthly report of customer list that includes the names and phone numbers of ten randomly chosen customers who have paid a visit to the Qurum Natural Park in the latest month, so that the manager could further contact them in the future. The report will be sent to the manager by email then.

## Assignment tasks

### Task 1

Submit a work proposal for this assignment by the end of week 3<sup>rd</sup> i.e. 11<sup>th</sup> of August, 2016 (11:55 pm) which must include;

- ❖ Expected Deliverables of the assignment [The deliverables are the specific work products that student must produce in order to complete the assignment. Example: For a business analysis assignment, deliverables could be business analysis plan, feasibility report, business requirement specification etc.]
- ❖ Approach towards the solution [Specify the Literature, Software and Hardware needed to meet the assignment objectives]
- ❖ Potential risks foreseeable [Technical risk, Management risk, External risk etc.]
- ❖ Timeline and work breakdown (Gantt chart):
- ❖ References

(10 marks)

### Task 2

Compare and Contrast any two well proven methodologies used for information systems development belonging to the categories of *Iterative* and *Agile*. You are required to propose an appropriate situation/requirement suits to implement your selected methodologies within the context of the given scenario. Your discussion points/ findings should be furnished as a write up with 300 words of your own apart from the referred contents. (15 Marks)

### Task 3

Critically evaluate the various options available for requirement capturing within the context of an information system development project. List down various *functional* and *non-functional* requirements of the scenario given. (15 Marks)

### Task 4

Perform a use case analysis for the scenario provided. You are required to produce an appropriate Use Case Diagram of the whole system with all the use case relationship along with Use Case Specification for the Use Cases identified.

(15 Marks)

### Task 5

Produce a proposal for the tools and techniques for the design, and development of an information system for the scenario provided. Your proposal should have the recommendation of an appropriate development methodology, modeling technique, modeling and development tool. Your recommendations should be justified with adequate

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supporting points. Your proposal should be furnished as a write up with 200 words of your own apart from the referred contents. **(10 Marks)**

### **Task 6**

Design a class diagram for developing an information System for the scenario provided. Your class diagram should produce a static architectural view of the proposed information system for the scenario. You are required to provide appropriate role names and multiplicities for the relationships in the class diagram. **(15 Marks)**

### **Task 7**

Critically evaluate your proposal and your design as prepared by you for task 5 and 6 prepare a report of critical evaluation mentioning relevant aspects with improvement. **(10 Marks)**

### **Task 8**

Be ready for a presentation with your teacher to demonstrate your knowledge with concepts incorporated on the assignment. **(10 Marks)**

***Note: Task 8 is compulsory. No marks will be awarded to tasks 1-7 without presentation.***

### **Guidelines**

Follow the guidelines mentioned below for your assignment.

- Assignment should be **typed and an electronic copy** is to be submitted through **moodle**
- **Handwritten assignments will not be accepted**
- The assignment should not be more than 20 pages in (size A4) paper. Minimum acceptable size is 6 pages.
- Assignment should have Complete and sign the cover sheet with the following information
  - Assignment Name
  - Class
  - Student name
  - Student ID
- It should have Table of Contents
- Use page numbers
- Assignment should be typed in your own words using **Times New Roman font size 12**.
- Heading should be with **Font Size 14, Bold, Underline**
- Use Diagrams and Examples to explain your topic, provided citation, if applicable.

- You are encouraged to refer the books in Library or use internet resource or computer magazines or any other resource but you should not cut/copy and paste from internet. The report should be in your own words.
- Copy paste from the Internet is strictly not acceptable.
- Reference should be included in the last page as follows
  - Author name, Book Title, Publisher, Year in case of books
  - In case of web site references type the full path of the web page with referenced date
  - In case of magazines/ periodicals type article name, magazine name, Issue Number and date

### **Regulations**

- Work submitted up to 1 week (5 working days) after the due date for submission will lose 10% of the mark (after internal moderation).
- Work submitted after this, but up to 2 weeks (10 working days) late will lose 20% of the overall mark.
- Work tendered for submission more than 2 weeks (10 working days) after the due date will not be accepted and an absence will be recorded for the assessment concerned. This will count as a failed attempt and may result in you failing the module overall.

### **Plagiarism policy**

As per MEC policy, any form of violation of academic integrity will invite severe penalty. Plagiarized documents, in part or in whole, submitted by the students will be subject to this policy.

#### **A. First offence of plagiarism**

- a. A student will be allowed to re-submit the assignment once, within a maximum period of one week. However, a penalty of deduction of 25% of the marks obtained for the resubmitted work will be imposed.
- b. Mark deduction: When the work is resubmitted, the marking will be undertaken according to the marking criteria. In compliance with this policy, the 25% deduction is then made on the marks obtained. For example, in an assessment that carries a maximum of 50 marks, suppose a student were to obtain 30 marks for the resubmitted work, the final marks for that assessment will be 22.5 (after deducting 25% of the marks actually obtained for the resubmitted work).

- c. Period of resubmission: The student will have to resubmit the work one week from the date he or she is advised to resubmit. For example, if the formal advice to resubmit was communicated to the student on a Sunday (latest by 5 pm), the student will have to resubmit the work latest by next Sunday 5 pm.
- d. If the re-submitted work is also detected to be plagiarized, then the work will be awarded a zero.
- e. Resubmission of the work beyond the maximum period of one week will not be accepted and the work will be awarded a zero.

B. Any further offence of plagiarism

- a. If any student is again caught in an act of plagiarism during his/her course of study (either in the same module, same semester or in any other semester), the student will directly be awarded zero for the work in which plagiarism is detected. In such cases, the student will not be allowed to re-submit the work.

C. Guidelines

- a. Type 1: In case plagiarism is detected in any component or part submission (submitted at different times) of one assessment (assignment), the deduction in marks will be applicable for the whole assessment (assignment), even if only the component or part submission alone needs to be resubmitted.
- b. Type 2: In case plagiarism is detected in a group assessment, all students of the group will be considered as having committed an act of plagiarism irrespective of whether plagiarism is on account of the act of all or a few or only one member. The policy will then be applied to all students.
- c. Type 3: Combination of Type 1 and Type 2: In case plagiarism is detected in any component or part submission (submitted at different times) of a **group assessment (assignment)**, the deduction in marks will be applicable for the whole assessment (assignment), even if only the component or part submission alone needs to be resubmitted. All students of the group would be considered as having committed an act of plagiarism irrespective of whether plagiarism is on account of the act of all or a

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few or only one member. The policy will then be applied to all the students of the group.

- d. Type 4: Variation of Type 1 and Type 2: In cases where the assessment consists of components or part submissions that could be a group assessment component (e.g. group assignment) and an individual assessment component (e.g. individual reflection), the following will be applicable:
  1. If plagiarism is detected in the group assessment component, all students of the group will be considered as having committed an act of plagiarism, irrespective of whether plagiarism is on account of the act of all or a few or only one member. The policy will then be applied to all students of the group. In such cases the group assessment component will be resubmitted as per the policy.
  2. If plagiarism is detected in the individual assessment component, the individual assessment component will be resubmitted as per the policy. The policy will then be applied to that student alone.
  3. In both cases (a) and/or (b), the deduction in marks will be applicable for the whole assessment (assignment).

D. Amount of similar material

- a. The total amount of similar material in any form of student work from all sources put together should not exceed 30% (including direct quotations).
- b. The total amount of quoted material (direct quotations) in any form of student work from all sources put together should not exceed 10%.
- c. The total amount of similar material in any form of student work from a **single source** should not exceed 7 percent. However, cases having a similarity of less than 7 percent in such cases may still be investigated by the faculty depending on the seriousness of the case.
- d. If faculty member find enough merit in the case of a student work with a similarity (with a single source) of more than 7 percent as not a case of plagiarism, the faculty member should provide detailed comments/remarks to justify the case.



**Systems Development and Procurement**  
**SUMMER 2016**

Student Id: \_\_\_\_\_

Student Name: \_\_\_\_\_

**Assignment Evaluation Grid**

Deliverables	Aspects	0	1-6	7-10	Marks
Task 1	Work Proposal submission	Weak/Plagiarized content/ No report/No Presentation	Satisfactory attempt, some of the components are missing	Perfect work proposal with all the components	
Deliverables	Aspects	0	1-7	8-10	11-15
Task 2	Methodology Comparison	Weak/Plagiarized content/ No report/No Presentation	Identification of two correct methodologies and comparison made with minimal points.	Satisfactory level of comparison among identified methodologies with situations.	Complete and Perfect Comparison among methodologies with perfect situations
Deliverables	Aspects	0	1-4	5-10	11-15
Task 3	Selection of appropriate requirement capturing technique	Weak/Plagiarized content/ No report/No Presentation	evaluation on various options available for requirement Capturing	Satisfactory Level of evaluation on various options available for requirement Capturing along with suggested techniques for the situation.	Complete and an accurate requirement capturing techniques with perfect justifications and the list of requirements
Deliverables	Aspects	0	1-4	5-10	11-15
Task 4	Use Case Analysis	Weak/Plagiarized content/ No report/No Presentation	Good attempt/ Identification of correct use cases and actors	Satisfactory Use Case diagram and Specifications.	Complete and Perfect Use Case diagram and Specifications.
Deliverables	Aspects	0	1-4	5-7	8-10
Task 5	Proposal on tools and techniques	Weak/Plagiarized content/ No report/No Presentation	Identification of an appropriate methodology, modeling and development tool with minimum justification.	Recommendation of an appropriate methodology, modeling and development tool with satisfactory justification.	Recommendation of an appropriate methodology, modeling and development tool with complete justification.
Deliverables	Aspects	0	1-5	6-10	11-15

<b>Task 6</b>	<b>Class diagram</b>	Weak/Plagiarized content/ No report/No Presentation	Good attempt. Correct symbol and model as per the use cases.	Satisfactory model as per the use cases.	Perfect model with regards to the use cases identified	
<b>Deliverables</b>	<b>Aspects</b>	<b>0</b>	<b>1-4</b>	<b>5-7</b>	<b>8-10</b>	
<b>Task 7</b>	<b>Critical Evaluation</b>	Weak/Plagiarized content/ No report/No Presentation	Evaluation on various points options available for proposal and design	Satisfactory evaluation	Complete and perfect evaluation	
<b>Deliverables</b>	<b>Aspects</b>	<b>0</b>	<b>1-10</b>			<b>Marks</b>
<b>Task 8</b>	<b>Presentation</b>	No Presentation	Marks are allocated as per the presentation evaluation grid			

**Signature of evaluator:**

<b>Total Marks</b>	
<b>Penalty</b>	
<b>Final Marks</b>	

**Presentation Evaluation Grid (Task 8)**

<b>Evaluation Criteria</b>	<b>Range of Marks</b>	<b>Marks</b>
<b>Correctness of explanation or response to the questions</b>	<b>0-5</b>	
<b>Presentation Content, slide Show</b>	<b>0-3</b>	
<b>Presentation Skill</b>	<b>0-2</b>	
	<b>Total</b>	



**Systems Development and Procurement**  
**Summer 2016**

Student Id \_\_\_\_\_ Student Name: \_\_\_\_\_

**Presentation Evaluation Grid (Task 8)**

Evaluation Criteria	Range of Marks	Marks
Correctness of explanation or response to the questions	0-5	
Presentation Content, slide Show	0-3	
Presentation Skill	0-2	
<b>Total</b>		

Comments:

Name and Signature of evaluator/moderator: