



Tuesday, 16 May 2017  
9.30 am – 11.00 am  
(Duration: 1 hour 30 minutes)

DEGREE OF MSc

## Software Project Management (M)

Answer All Questions

This examination paper is worth a total of 60 marks

The use of a calculator is not permitted in this examination

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### INSTRUCTIONS TO INVIGILATORS

Please collect all exam question papers and exam answer scripts and retain for school to collect. Candidates must not remove exam question papers.

1. The following problem description is a system to keep track of used cars for a car dealership. Use it to answer all the parts of question 1.

RonsCars is a car dealership and part of our operation deals with used cars. We already have existing software to process these cars but are unhappy with the way it is performing. We would like you to tender for a replacement system. Here is a brief description of what we do.

Our salesmen receive many of our used cars in exchange for newer models. They are responsible for deciding what price we will offer them for. One of our managers also buys bargains from sales by individuals and also decides on the price to charge. Our workshop foreman will look at all cars that arrive and determine what work needs to be done, if any. We have a reputation for selling good quality used cars and so this step is important. The work is allocated to mechanics, who sign off when it is completed. At the same time the car is cleaned, photographed and the car details put on our website. We have a number of standard files with the details for the various car types which we also add to the website. We like to get cars onto the website as soon as possible and so initially just display a picture of the outside of the car, adding more pictures when the car is cleaned.

Customers contact us through the website and are assigned a salesman to answer their questions. They will usually book a test drive, which can only take place if the workshop foreman says the car is ready. Customers can reserve a car for 24 hours free of charge, or pay a deposit to reserve the car for longer. It is possible that several customers can be interested in the same car, and it is important that all the salesmen involved know about the others. Eventually the car will be sold, either to a customer or to an auction house.

This system will not handle money. We already have another system to do that.

- (a) One of the initial tasks when starting a project is to produce a domain analysis. Explain domain analysis and create an initial domain analysis of this problem based just on the information given in this question. Describe the additional material that would be needed to complete the domain analysis. [8]
- (b) Describe how you would obtain this additional information. [4]
- (c) One key aspect of the system, from the users' point of view is 'Book a Test Drive' Use the information in this question to create two scenarios based on this use case. [5]
- (d) Use these two scenarios to produce full use case details for the 'Book a Test Drive' use case. [3]

2. (a) Prince2 is often called a waterfall style project management system. Give two reasons why this is true and two ways in which it differs from a traditional waterfall approach. Explain why it is not an agile approach. [5]
- (b) How are customer requirements gathered and how it is possible to find out if the delivered product meets these requirements? [3]
- (c) What is the quality – cost – time triangle and how is it used as a project management tool? [4]
- (d) What is management by exception? Explain your answer with examples of possible exceptions. Describe the important management roles in a Prince2 project and show how they apply the management by exception principle in three different ways. [5]
- (e) Describe how a Prince2 project is started and also how it can be shut down. [3]

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3. (a) Your boss has appointed you as project manager for a project that will be run using Dynamic System Development Method (DSDM). His reasoning is that he knows people in his organisation are his main problem and that DSDM is specially designed to cope with this. DSDM also promises to always deliver quality software on time and on budget, which he likes. Explain how accurate these claims are.

[4]

(b) Your first task is to form your teams and you have the following people available (among others):

A: a very experienced developer who has also managed several smaller projects using Scrum.

B: has worked for the company for a number of years, mainly building small websites for a variety of customers. He/she is looking for a new role now that the company has cut down on this type of work.

C: used to be a developer a long time ago but has been a manager for long enough to forget how to code. He/she is very good at working with people, both developers and customers.

D: a sharp developer who has been with the company for a few months. They know everything there is to know about PRINCE2.

What roles would you give them and why?

[8]

- (c) One of your first tasks is to gather requirements, work out how long each will take, and plan the work. How would you go about this using DSDM? After going through this process you find that your budget would have to increase by 50% to complete all of the work. The work is categorised as 40% must have, 30% should have, 20% could have, 10% would like to have. Should you (a) find the person who made the mistake and fire them, and if so, who is to blame; or (b) assure your boss that the project will be delivered on time and on budget. If so, why are you so confident?

[4]

- (d) You will need to plan both iterations and timeboxes. Explain the difference between the two? What is the first activity in each iteration?

[4]