Level 3 Requirements analysis and systems specification

(7266/7267-306)

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Assignment guide for Candidates
Assignment D

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Level 3 Requirements analysis and systems specification (7266/7267-306) Assignment D

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Requirements analysis and systems specification (7266/7267-306).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **8 hours**.

Level 3 Requirements analysis and systems specification (7266/7267-306)
Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 8 hours

Assignment set up: A scenario is provided for candidates in the form of a customer's project brief for a system they require

This assignment is made up of **four** tasks

- **Task A** - requires candidates to plan for the identification of customer requirements.
- **Task B** - requires candidates to establish the customer's requirements.
- **Task C** - requires candidates to produce the logical design specification.
- **Task D** - requires candidates to produce the physical design specification.

Scenario

A systems development company, Real-time Custom Systems, provides complete IT systems solutions. As a contracted employee of Real-time Custom Systems, you have been asked to undertake an investigation of customer requirements and produce a requirements definition for the implementation of an IT solution for a customer.

Project brief

A company operates several car parks. They require a computer system to control the operation of each car park.

The existing system has a ticket attendant who collects the payment, for a set number of hours, on entry to the car park. There is no calculation of the number of spaces left in the car park and cars are allowed to enter only to find that there are no spaces left. It is difficult to recruit and retain staff and there is no method for checking the amount of money taken each day. Some cars are being left in the car park for several days and therefore are not paying the correct fee. There is no barrier on the exit and cars have been entering the car park using the exit therefore bypassing the car park attendant.

The new system is to be totally automated.

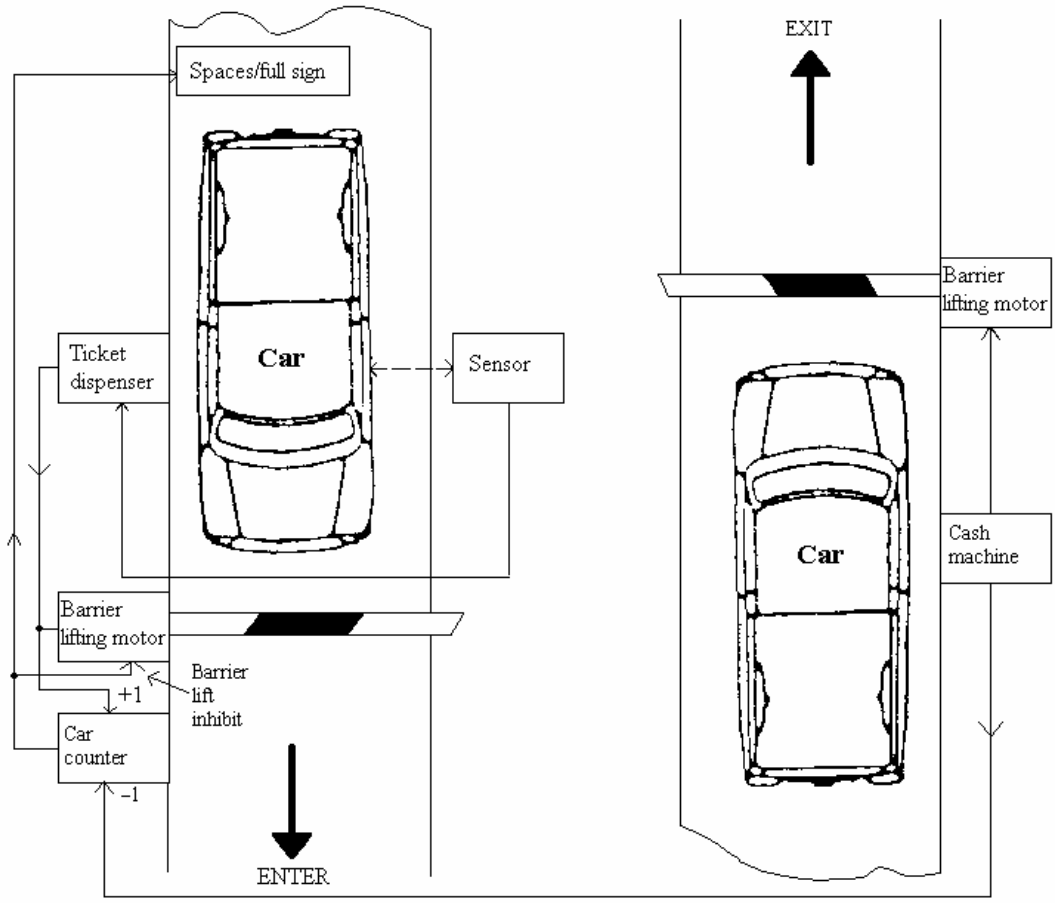
A sensor is to be located at the entrance to the car park and as soon as a car approaches the ticket dispenser must be activated if there are spaces available. The customer must press a button and then a ticket will be issued and the entrance barrier lifted. A counter is to be kept of the number of cars entering the car park and a sign displayed indicating if the car park is full or has spaces. Each car park has a different maximum number of parking spaces. A sensor on the entrance barrier will signal when a car has passed the barrier and the barrier can then be lowered.

At the exit the customer inserts the ticket into the cash machine and the charge for parking can then be displayed. When payment has been made and any change given the exit barrier can be raised.

The counter must be adjusted as cars leave the car park and the sign display refreshed. A sensor on the exit barrier will signal when a car has passed the barrier and the barrier can then be lowered.

At the end of the day the system must be closed down and the total of the money taken for that day calculated. Any cars that have not exited the car park must be accounted for when the system is started the next day. The time that each car park closes down may be different but the start time is always 7 am.

A first draft diagram to show the hardware required and the operation of the car park system is shown below.



Task A

You are strongly recommended to read the instructions and project brief carefully before you begin. An IT solution is required which will automate the operation of a car park.

In this task you are required to plan for the identification of customer requirements.

1 Produce a report which clearly states:
   a. the present situation
   b. the major problems
   c. why a new system is required
   d. what further information is required to confirm and/or establish the details of the system requirements
   e. extra detail as necessary.
   f.

2 Draw either a PERT or GANTT chart showing the activities required to complete the investigation, analysis and requirements definition. Various layouts are acceptable but the chart should follow established practice, use recognised symbols and be as compact as possible.

Before moving on to the next task, obtain approval from your assessor that the activities planned are defined correctly.

Task B

In this task you are required to establish the customer's requirements.

1 Carry out investigations to meet the agreed plan.

2 Use investigative methods to obtain information on inputs, outputs, processing, user interfaces and frequency.

3 Identify constraints.

4 Obtain approval from your assessor before moving on to the next task.

Task C

In this task you are required to produce the logical design specification.

1 Carry out analyses to meet the agreed plan.

2 Identify the main inputs and outputs (signals from hardware and data).

3 Identify the external entities: i.e. the sources and recipients of the inputs and outputs.

4 Identify the receiving and generating processes for each flow.

5 Produce suitable diagrammatical representations for modelling the system (states, hardware signals and data flows).

6 Create a data dictionary with entries for the system.

7 Identify and specify the capacity requirements.

8 Check for and correct defects in the logical design specification.

9 Obtain approval from your assessor before moving on to the next task.

Task D

In this task you are required to produce the physical design specification.

1 Carry out analyses to meet the agreed plan.

2 Produce a hardware specification to include memory size, storage devices, printer specifications, sensors, etc.

3 Produce a software specification to include the outline program specifications, file organisation and access method, screen, file and print layouts, error conditions and associated error messages.

4 Produce input and output specifications to include input and output media and controls.

5 Specify security measures to include backup and passwords.

Note

- Candidates should produce the following for their Assessor:
  - Report.
  - Planning chart.
  - Constraints description.
  - Diagrams for logical design.
  - Data dictionary.
  - Capacity requirements description.
  - Hardware specification.
  - Software specification.
  - Input and output specification.
  - Security measures description.
- At the conclusion of this assignment, hand all paperwork and removable media to the test supervisor.
- Ensure that your name is on the removable media and all documentation.
- If the assignment is taken over more than one period, all removable media and paperwork must be returned to the test supervisor at the end of each sitting.

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