



Unit:
Office Solutions Development

Assignment title:
Car Parking Office Systems

Spring – Winter 2023

Important notes

- Please refer to the *Assignment Presentation Requirements* for advice on how to set out your assignment. These can be found on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- You **must** read the NCC Education document *Academic Misconduct Policy* and ensure that you acknowledge all the sources that you use in your work. These documents are available on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- You **must** complete the *Statement and Confirmation of Own Work*. The form is available on the NCC Education website. Hover over 'About Us' on the main menu and then navigate to 'Policies and Procedures' then scroll to the 'Student Support' area.
- Please make a note of the recommended word count. You could lose marks if you write 10% more or less than this.
- You must submit a paper copy and digital copy (on disk or similarly acceptable medium). Media containing viruses, or media that cannot be run directly, will result in a fail grade being awarded for this assessment.
- All electronic media will be checked for plagiarism.

Introduction

Fordley Car Park is a large car park company in your local town. The company has contracted you to lead automation of their information systems.

Scenario

Fordley Car Park is open between 7am and 9pm every day. They charge £2.30 per hour with a minimum fee of one hour and a £2 overnight charge for stays between 9pm and 7.30am. Payments are made at the end of a visit.

The car park is also used by resident and business permit holders on the basis of annually renewable membership. All new memberships are registered via the Fordley Car Park website or by completing a form which can be picked up from the car park attendant.

Recently Fordley has invested in a paperless attended smart parking system that scans car registration numbers as cars drive through the entrance gate. To ensure that a reading has been captured, the gates only open when a valid registration is read. Exit gates also have a camera which scans the car registration number and will open automatically unless payments are outstanding in which case the payment can be made at the attendant kiosk without leaving the car. Members whose membership has expired can also pay for the visit or the full renewal fee at this point.

Each member has a 7-character **Membership Code** used as a unique identifier and can register **up to three cars**. Only one of these cars is permitted to use the car park at a time.

The registration form includes the following details for **each car**: Car Registration Number + Make + Model + Date and Time Registered

Car Park Usage Data recorded by the smart system is as follows: Car Registration + Arrival and Departure Date and Time + [Payment Made]

At each visit, **Member details** are automatically assigned based on the Car Registration Number with non-member visits assigned to member code ZZZ999. **Attendant details** are based on linking the Exit Date and Time to the attendant shift clock in.

In addition to Car Details, Member details captured by the **Registration Form** are as follows: Member Code + Member Name + Member Address + Membership Start Date + [Member Email] + [Member Phone 1] + [Member Phone 2] + Membership Payment

The records also keep track of **Membership Renewal Dates and Times** which also include any updates (removal or addition) to registered cars.

Attendant details include: Company Email Address used as a unique identifier for the attendant + Attendant Home Address + [Attendant Home Phone Number] + [Attendant Cellphone/Mobile Number]

Attendant Shift records include a Date and a Time.

Note: [] represent optional fields

Task 1 – 25 Marks

[1000 words]

Application software and business processes

Conduct research on car parks and smart parking meter systems and then write a report of no more than 1000 words that contains the following:

- An outline of the key business processes required to manage the car park.
- An explanation of the key information processing activities in each of the business processes.
- A recommendation of application software that could be used to support each of the activities.

Task 2 – 30 Marks

[750 words]

End-user development

It has been proposed that a Microsoft Access database could be developed in-house to dynamically interface with the car parking system, manage membership and produce management reports. You have been asked to work as an adviser to the Senior Administrator who has been tasked to develop and maintain the proposed system. The administrator has expertise in Microsoft Office products.

- a) Make at least FIVE (5) recommendations as to how you would ensure success of this end-user development including support and measures required from Fordley throughout the different stages of the development life cycle. **[10 marks]**
- b) Investigate the advantages and disadvantages of using Microsoft Access as a product. After your investigation, consider ONE (1) alternative solution that Fordley could use instead of using Microsoft Access. Having identified an alternative, compare it to Microsoft Access. The comparison must include costs. **[10 marks]**
- c) Produce a conceptual diagram illustrating the different data tables you would create and showing key fields and relationships if you were to use Microsoft Access to capture the data described in the car park scenario. There is no need to provide detailed field properties descriptions at this stage. **[10 marks]**

Task 3 – 25 Marks

Advanced features and functions of Microsoft Word

Apply the following to the Word document for this assignment:

- Styles
- An automatically generated table of contents
- Automatically generated index list

Marks will also be awarded for structure, appropriate use of language and clarity of arguments across the written submission.

Create a membership table using Microsoft Excel. Add a second sheet containing test data that would be imported from the smart parking system for each visit. When creating the tables, include calculated fields where necessary and take care to ensure that the data structure can be used to extract data for sending MailMerge letters to members.

Create a ONE (1) page MailMerge letter template that will send a renewal reminder only to members whose membership has expired. The reminder must also include a list of car park visits based on sample data held in the spreadsheet plus total number of usage hours and calculation of what the usage would have cost if charges had been based on non-member rates.

Add at least TEN (10) test members with varying number of visits and membership periods. Produce a test plan with THREE (3) test cases for the MailMerge and use them to document test results.

Provide instructions for sending letters once a week by email.

Task 4 – 20 Marks

[250 words]

Advanced features and functions of Microsoft Excel

Create an interactive form that will be used to capture membership details using Excel.

- The form must include confirmatory buttons and must allow new records to be added to the end of the Excel sheet when the user clicks submit.
- The form must also include validation of data entered before it is added to the sheet.
- Briefly explain the relative merits and demerits of using macros to make the form interactive.

Guidance

Consult with your tutor if you are uncertain about any aspect of this assignment.

Submission requirements

You must submit an electronic word-processed report in Microsoft Word format plus a MailMerge letter and spreadsheet.

Your report should answer Tasks 1 to 4 including all tables and diagrams and must allow markers to see the use of advanced Microsoft Word features. The overall word count limit for the written part of the assignment is **2500 words**.

Candidate checklist

Please use the following checklist to ensure that your work is ready for submission.

Have you read the NCC Education document *Academic Misconduct Policy* and ensured that you have acknowledged all the sources that you have used in your work? ☐

Have you completed the *Statement and Confirmation of Own Work* form and attached it to your assignment? **You must do this.** ☐

Have you ensured that your work has not gone over or under the recommended word count by more than 10%? ☐

Have you ensured that your work does not contain viruses and can be run directly? ☐