**Assignment Brief**

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| **Unit:** | **Systems Analysis (SAS)** |
| **Unit Level:** | **H1** |
| **Unit Code:** | **SAS** |

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| **Student Name:** | **Date of Issue: 22/01/2018** |
| **Student ID:** | **Date of Submission:** |
| **Group:** |  |

**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 College. Please see your Student Handbook for further details of what is / isn’t plagiarism.

**Coursework Regulations**

1. All coursework must be submitted via stponline.co.uk
2. Please check the submission date and time and ensure that coursework is submitted on time.
3. Requests for an extension must be in accordance with the guidelines set out in the college regulations, with the necessary documentary evidence to support your request. Refer to The Student Handbook.
4. General guidelines for submission of coursework:
5. All work must be word-processed and must be of a “good” standard.
6. Document margins should not be more than 2.5cm or less than 1.5cm.

c)  Font size in the range of 11 to 14 points distributed to including headings and body text. Preferred typeface to be of a common standard such as Arial, Calibri or Times New Roman for the main text.

1. All work completed including any software constructed may not be used for any purpose other than the purpose of intended study without prior written permission from St Patrick’s College.

**Remember to keep evidence of your submitted coursework.**

**Assignment front sheet**

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| **Qualification** | | **Unit number and title** | | |
| Pearson BTEC HND Diploma | | Unit: Systems Analysis (SAS) | | |
| **Student name** | | **Student ID** | | **Group** |
|  | |  | |  |
| **Assessor name** | **Date issued** | | **Submission Date** | |
| M.G.Srikanthan |  | | 0 | |
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| **Assignment title** | Assignment: Systems Analysis | | | |

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| **LO** | **Learning outcome**  **(LO)** | **Assessment Criteria**  **(AC)** | **In this assessment you will have the opportunity to present evidence that shows you are able to:** | **Task no.** | **Evidence**  **(Page no)** |
| LO 1 | **Understand the systems analysis life cycle** | 1.1 | Identify the functions and purpose of each stage of a systems life cycle | 1 |  |
| 1.2 | Provide evidence to support an understanding of the lifecycle | 1 |  |
| 1.3 | Compare different life cycle models | 1 |  |
| LO 2 | **Understand systems analysis tools and techniques** | 2.1 | Investigate various systems analysis and development tools | 2 |  |
|  |
|  | 2.2 | Identify number of notation being used for systems analysis techniques. | 2 |  |
|  | 2.3 | Investigate various systems analysis techniques | 2 |  |
| LO 3 | **Perform a system investigation** | 3.1 | Identify functional and non-functional requirements | 2 |  |
| 3.2 | Develop use case diagram | 2 |  |
| 3.3 | Produce the use case documentation | 2 |  |
| LO 4 | **Perform functional and data modelling** | 4.1 | Create data models | 3 |  |
| 4.2 | Produce a functional model | 3 |  |
| 4.3 | Develop an architectural model | 3 |  |

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| **Learner declaration** |
| I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.  Student signature: Date: |

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| **In addition to the above PASS criteria, this assignment gives you the opportunity to submit evidence in order to achieve the following MERIT and DISTINCTION grades** | | |
| **Grade Descriptor** | **Indicative characteristic/s** | **Contextualisation** |
| **M1. Identify and apply strategies to find appropriate solutions** | * Effective judgements have been made * An effective approach to study and research has been applied | To achieve M1 effective judgements will have to be made in order to accurately identify and discuss the factors affecting business strategy.  Tasks 1 & 2 |
| **M2. Select/design and apply appropriate methods/techniques** | * Effective systems modelling techniques applied | To achieve M2 relevant UML designs must be provided. |
| **M3. Present and communicate appropriate findings** | * Presentation have been used appropriately and technical language has been accurately used | To achieve M3 you must produce documentation to set format i.e. tabular form.  Task 3  Appropriate technical language has been used throughout.  Tasks 1 - 4 |
| **D1. Use critical reflection to evaluate own work and justify valid conclusions** | Conclusions have been arrived at through synthesis of ideas and have been justified. | To achieve D1 Analysis and evaluation will have been carried out to compare various business approaches.  Tasks 1,2,4 |
| **D2. Demonstrate convergent/lateral/ creative thinking** | Alternative and innovative approaches have been considered | To achieve D3 constructive criticism must be in evidence of the various case studies researched, with alternative approaches proposed.  Tasks 2, 3 |

**CASE STUDY**

The London Car Company (LCC) is a rapidly growing business. It was formed about two years ago by the merge of a number of garages who specialised in the sale of used cars. As the newly formed LCC, the garages then became dealers for the car manufacturer. Subsequently, as the business of each garage has expanded to cover the sale of new vehicles, the parts and servicing side of the business has also developed as well as the sale of second-hand cars. The primary business of each garage is currently considered to be in car sales; each garage deals in both new and used cars. The used cars held at a particular garage come from a variety of source, some from customer trade-ins at that garage, some from exchanges with other LCC garages.

The LCC senior management wanted to build a distributed system for managing their business. The system should have the following main features;

* The day-to-day business manages individually by the local garage.
* The senior management should be able to monitor the garage’s business and advice the local management for further improvement.
* The senior management knows that to complete the entire system might take long time, however the business climate wouldn’t support this. Therefore the management advice the software development team to build the system phase by phase and deliver evolutionary prototype for use.

You are a ‘business analysist’ part of in-house software development team in the LCC. You have been asked to produce a **Design Document** of a new system which should meet the above requirements.

**YOUR PROPOSAL MUST ADDRESS THE FOLLOWING TASKS.**

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| **Assignment title** | **Systems Analysis** |
| **Purpose of this assignment**  In this unit learners are provided with a detailed insight into the systems analysis life cycle. They are also taught Modelling tools and techniques, testing procedures and the need for systems evaluation. This unit we examine the requirements of analysis for both commercial and technical applications. It will also introduce the data and functional modelling techniques, which the learners can be expected to use. | |
| **Task 1 (AC: 1.1, 1.2 and 1.3)**   1. Identify the suitable systems development life cycle (SDLC) model and rationalise why you have chosen the model. Also, explain that how the chosen model better than other models. 2. Explain how the chosen model will support the evolutionary prototype and discuss how each stage of the model support the approach and differ from traditional SDLC. | |
| **Task 2 (AC: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 and M1 & M2)**   1. List most popular tools and techniques used during the process of software development and discuss the tools and techniques you are proposing for the system development. 2. List all the functional and non-functional requirements. 3. Using the functional requirement produce use case diagram and use case documentation. | |
| **Task 3 (AC: 4.1, 4.2, 4.3, M3, D1, and D2)**   1. Develop an entity relationship diagram (ERD) for the scenario (the ERD should be consistent with the functional requirement). 2. Develop sequence diagram for the use cases 3. Produce an architectural diagram for the proposed system. | |

**Task 1 (AC: 1.1, 1.2 and 1.3)**

1. Identify the suitable systems development life cycle (SDLC) model and rationalise why you have chosen the model. Also, explain that how the chosen model better than other models.

**Models**

**Waterfall –**

**Advantages**

**Disadvantages**

**V-shaped –**

**Advantages**

**Disadvantages**

**Iterative –**

**Advantages**

**Disadvantages**

**Spiral –**

**Advantages**

**Disadvantages**

**Agile –**

**Advantages**

**Disadvantages**

1. Explain how the chosen model will support the evolutionary prototype and discuss how each stage of the model support the approach and differ from traditional SDLC.

**Task 2 (AC: 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 and M1 & M2)**

1. List most popular tools and techniques used during the process of software development and discuss the tools and techniques you are proposing for the system development.

Planning

Analysis

Design

Implementation

Maintenance

1. List all the functional and non-functional requirements.

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| Functional Requirements | Non- Functional Requirements |
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1. Using the functional requirement produce use case diagram and use case documentation.

**Place an order**

**User case name**: Place an order

**User case description**: customer place an order by choosing item, quantity, and delivery date

**User case tasks**

* Customer chose item
* Enter quantity
* Chose delivery date

**Alternate case**:

* If do not place an order the system will notify customer
* If do not enter quantity then system will notify customer
* If do not enter delivery date then system will notify customer

**Post condition**:

System will navigate customer to payment screen (shopping cart)

**Make Payment**

**User case name**: Make payment

**User case description**: customer enter payment details, places order

**User case tasks**

* Customer choses payment method
* Card payment
* PayPal
* Customer enters credit/debit details
* Card number
* Expiry date
* Security details

If PayPal is chosen, then customer will enter PayPal details (email/password)

**Alternative case**:

* If customer enters inappropriate card details the system will notify the customer. (The system will time out if the customer enters inappropriate details more than three times)
* If customer leaves card payment details empty the system will notify the customer.
* If customer enters wrong password/email, then the system will notify the customer

**Post condition**:  Payment will go through and a conformation will be displayed to the customer, customer will also get an email of the conformation.

**Registration**

**User case name:** Enter Registration details

**User case description:**Customer enter personal details, customer enter log in details

**User case Tasks:**

* Customer enters personal details
* Customer enters login details

**Alternative case:**

* If customer doesn’t enter login details correctly when prompted the system will notify the customer
* If customer doesn’t enter correct details e.g. address/email, then the system will notify the customer

**Post Condition:**Confirmation of registration will be displayed in customer email

**Cancel Order**

**User case name: Cancel an order**

**User case description: Cancel a placed order, change order**

**User case Tasks:**

* Cancel an order
* Confirmation of cancellation by customer (written form)

* Change order (swap instead of getting refund)

**Alternative case:**

* If customer doesn’t fill out cancellation form, but tries to cancel anyway the system will notify the customer

**Post Condition:**

**Task 3 (AC: 4.1, 4.2, 4.3, M3, D1, and D2)**

1. Develop an entity relationship diagram (ERD) for the scenario (the ERD should be consistent with the functional requirement).
2. Develop sequence diagram for the use cases
3. Produce an architectural diagram for the proposed system.

**Achievement Summary**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Qualification** | | Pearson BTEC HND Diploma | | | | **Assessor name** | M.G.Srikanthan | |
| **Unit Number and title** | | Unit: Systems Analysis | | | | **Student name** |  | |
| **LO** | **Learning outcome**  **(LO)** | | **AC** | **To achieve the criteria the evidence must show that the student is able to:** | | | | **Achieved** |
| LO 1 | **Understand the systems analysis life cycle** | | 1.1 | Identify the functions and purpose of each stage of a systems life cycle | | | |  |
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|  | | | | | | | | |
| **Higher Grade Achievements** | | | | | | | | |
| **Grade descriptor** | | | | | **Achieved** | **Grade descriptor** | | **Achieved** |
| **M1: Identify and apply strategies to find appropriate solutions** | | | | |  | **D1: Use critical reflection to evaluate own work and justify valid conclusions** | |  |
| **M2: Select / design and apply appropriate methods / techniques** | | | | |  | **D2: Demonstrate convergent /lateral /creative thinking** | |  |
| **M3: Present and communicate appropriate findings** | | | | |  |  | |  |

**Student Grades**

Each Unit will be graded as a Pass, Merit, Distinction, Referred or Withheld

A **Pass** is awarded for the achievement of all Learning Outcomes against the specified *Assessment Criteria.*

A **Merit** or **Distinction** is awarded for higher level achievement.

If all Learning Outcomes have not been achieved the work is **Referred**

Where there is some doubt or concern regarding the origin of some of the content, the work is **withheld.** The student will then be interviewed to ascertain originality.

When a Unit has been assessed Grades are reported on the **Online E - Learning System**. Students can obtain the grade awarded by viewing the **Submission Inbox**.

Grades are reported according to the following;

|  |  |
| --- | --- |
| 50% indicates  65% indicates  75% indicates  35% indicates  10% indicates  05% indicates | **Pass**  **Merit**  **Distinction**  **Referred**  **Withheld**  **Unreasonable Submission** |

A percentage mark within one of the boundaries indicates further work would be required to achieve the next highest grade e.g. 50% indicates that a Pass has been achieved, with additional work (according to the grade descriptors) a Merit could have been achieved.

By viewing the Report the **Originality** can be obtained.

Clicking on the GradeMark tab will reveal the **QuickMark** comments.

Clicking on the **General Comment** tab will reveal the comments made by the Assessor and Internal Verifier

**NOTE**

* The **Assignment Brief** details all Assessment Criterions against which the coursework will be assessed
* The **Assignment Brief** also specifically indicates which of the above grade descriptors have been incorporated within the activities to be assessed, in order that a student can achieve a Merit or Distinction.
* **Late and Very Late Submissions of the assignments are capped to Pass only.**