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| **New Zealand Diploma in Information System (Level 5 - 2597)**  **Project-Based Assessment Package** | |
| Title | Business Analysis |
| Version | 1 |
| Last updated | 10 November 2021 |
| Learning Outcome | 2.1 - Development and architecture approach; and introductory architecture requirements engineering  2.2 - Business logic, practices, concepts and values, and the role of information systems  2.3 - Investigation and analysis techniques, systems thinking, process management and modelling |
| Credits | Level 5 Credits 15 |
| Duration | 3 Days |
| Assessment Location | 182 Broadway Newmarket Auckland |
| Assessment Type | Project-Based (Open Book) |
| Start Date | Monday 29 November 2021 |

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| Assessment Section | Marks Possible |
| Project Nestle Coffee bar - Software Solution | 30 |
| Project Nestle Coffee bar - Data Flow Diagram | 30 |
| Project Nestle Coffee bar - UML | 30 |
| Interview | 10 |
| **Total** | **100** |
| **Grade** A+=95-100, A=90-94, A-=85-89, B+=80-84, B=70-79, B-=60-69, C+=55-59, C=50-54, D=Below 50 |  |
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# Learner Declaration Statement

I have read, understood, and agreed on the following (refer to learner handbook):

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| Before the assessment |  |
| 1. Techtorium Assessment Conditions and Guidelines | 1. The responsibilities of the learner |
| 1. The assessment environment is safe and accessible | 1. The responsibilities of the assessor |
| 1. The Learning Outcomes that will be assessed | 1. Options for re-assessment |
| 1. This assessment is my own original work, unless otherwise specified | 1. Your completed assessment paper is the property of Techtorium and should not be removed from the premises at any time. |
| 1. I have acknowledged all sources of information used in the writing of this assignment by using the recognized in-text APA referencing standard using the latest version. All unpublished sources of information have been acknowledged. | 1. I have not copied either partially or in full any work from any other learner or former learner of Techtorium or any other tertiary institution. I promise not to share this project in part or whole with any other learner at Techtorium or outside this campus |
| 1. I make this declaration in full knowledge and understanding that, should it be found false, Techtorium may take disciplinary action. | 1. I understand that Techtorium may make use of systems such as Turnitin.com or Plagscan.com to verify the originality of my work. |
| 1. [Academic Fraud](https://www.nzqa.govt.nz/assets/Providers-and-partners/NZQA-Effective-practice-guide.pdf) is a serious issue and will compromise your ability to study at Techtorium. If there is any doubt in your mind, then you should:  * State that you have copied and pasted work from another source * Use APA referencing * Include a weblink to the original source * Ask your Trainer for clarity | |
| After the assessment |  |
| 1. During the assessment it was clear what I was expected to do | 1. The feedback I received enabled me to find ways of reaching the standard (if it was not reached during the assessment) |
| 1. I was treated fairly | 1. The feedback I received met my needs and expectations |
| Learner feedback – *Before and After Assessment*:    *Please provide feedback so we can improve our Assessment Process* | |

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| Assessment Outcomes |
| **GPO 2:** **Apply the fundamentals of information systems concepts and practice to support and enhance organisational processes and systems.** |
| **Programmes must include:**  **• 2.1 -** **Development and architecture approach; and introductory architecture requirements engineering**  **• 2.2 -** **Business logic, practices, concepts and values, and the role of information systems**  **• 2.3 - Investigation and analysis techniques, systems thinking, process management and modelling** |
| Learner Instructions |
| 1. If you have any questions, you can ask your assessor before you start the assessment. You can also inform the assessor about any special needs that you may require completing this assessment. 2. If you wish to query the Assessors marking, then follow the appeal process stated in the Learner Handbook 3. This assessment is to be submitted using a soft copy which will be saved to a location specified by the Assessor at the time of the assessment 4. If you are referring to external work, you must use appropriate referencing style APA version 7 [reference link](https://guides.unitec.ac.nz/apareferencing/webpages)   **Success Criteria**   1. To pass this assessment you must reach a minimum of a C grade (50%) 2. You will not receive a chance to improve your grade in the event that you pass 3. Changes to the deadline will require prior approval in writing by the Head of Learner Engagement Team and only in exceptional circumstances. Requests will need to be initiated by the Learner. 4. In normal circumstances any delay in submission will result in a DNS (Did not Submit) which will mean your late submission will be considered as the second attempt. Any second attempt for this assessment will receive no higher than a C grade 5. All work for this assessment must be original including any written work. See referencing section above if you have any doubts |
| Learner Resources |
| You will have access to the following resources for this assessment:   1. Assessment Coversheet (This document) 2. Declaration from Learner (This document) 3. Learner Instructions (This document) 4. Your own BYO Device |

# Project - Nestle Coffee bar - Software Solution (30 marks)

**Outcome Mapping:**

**2.2 Business logic, practices, concepts and values, and the role of information systems**

**2.3 Investigation and analysis techniques, systems thinking, process management and modelling**

## Business Overview

You are appointed as a “System Analyst” in a “West-Tech” private limited company. The company is famous for developing quality software solutions for the various needs of their customer. The company is recently approached by the owner of “Nestle Coffee bar” to extend their business by making it available online. The company is looking forward to develop software for its online version. The online version should work as per the following functionality:

* New users can create a profile
* Existing users can log in with their credentials
* Customers can place orders online
* Invoice will be generated and sent to the customer
* Customers can pay online or in-store
* Admin can manage and update online menu bar

## Project Requirements

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| SR | Solution Requirement | Description |
| SR02 | Identify roles of Software Project Manager | List down at least three roles |
| Proof of work  Software Project Management Roles   1. Oversee project requirements – This involves gathering what is required for the project, planning time, cost and human resource allocation, and organising communications. 2. Managing meetings – Consistent meetings with clients, stakeholders, and development team regarding any changes to project, or the progress in each step 3. Reporting – Ensuring progress is being made in terms of the time frame, and taking action when not.   Reference:  Software project management. (n.d.). Online Tutorials Library. <https://www.tutorialspoint.com/software_engineering/software_project_management> | | |
| SR03 | Identify Project Estimation Techniques | List down at least two techniques |
| Proof of work  Project Estimation Techniques   1. Top Down Estimating - This method aims to break the project into phases in a given time, based on the structure that your team breaks projects down into. A top-down method enables you to determine how much time you can allocate for each activity within the project, depending on the clients requirements, and then plan accordingly to meet those requirements. 2. Parametric Model Estimating - While using data from previous projects, parametric modelling adjusts the data to represent the variations between each project. An example may be a building company scoping out a project for a new home. To get the average project cost per square metre, parametric modelling could divide the total cost of all previous construction projects by the square footage of each project. Your overall project budget would then be calculated by multiplying that amount by the current home's intended square footage.   Reference: A complete guide to project estimation techniques. (n.d.). Versatile & Robust Project Management Software | Wrike. <https://www.wrike.com/blog/project-estimation-techniques/> | | |
| SR04 | Define the concept of business logic with the help of a flow chart to present "order placement by the user". | Provide Screenshot of the flowchart which must cover the whole process from login to payment, which must cover following processes.   * User signup * User login * Order Placement * Order payment |
| Proof of work  Diagram  Description automatically generated | | |
| SR05 | Identify the role of Information System in Business | List down at least 3 major roles of Information System |
| Proof of work  The three major roles in information system assist in the decision making process of a business. It makes delivering essential information more efficient, and allows for effective communication between employees. The three roles are as follows:  Input, processing, and output. Input is the process of collecting raw data from the organisation, or an external environment. This input gets processed and  is transferred to the users for it to be used through output. Information systems require feedback to analyse or improve the input stage, so that the organisation can evaluate the input stage.  Reference: Chapter 1. (n.d.). FEUP - Universidade do Porto. https://paginas.fe.up.pt/~als/mis10e/ch1/chpt1-2bullettext.htm#:~:text=Input%2C%20processing%2C%20and%20output%20are,or%20from%20its%20external%20environment | | |
| SR06 | Identify good software practices | List down At least 5 practices that can be applied to support and enhance the software development process |
| Proof of work   1. The simplicity of your code allows for more efficient changes and reduces unnecessary complexity. 2. Testing and maintaining your website, and fixing the bugs 3. Coherently working alongside your team. This means that you keep the same design and writing style throughout 4. Consistently ask for team members to review your work and give feedback 5. Set realistic time management goals and work towards them   Reference: 5 software development best practices — Dialexa. (2021, August 20). Dialexa.  <https://www.dialexa.com/our-insights/2019/12/9/five-software-development-best-practices> | | |
| SR07 | Gather requirements from the client using Interview | Gather all the requirements by interviewing your client and record them in the template provided on SharePoint. At least 5 questions and respective answers should be recorded.   * Provide screenshot with min 5 questions and relative answer. |
| Proof of work | | |
| SR08 | Gather requirements from the client using Questionnaire | Gather all the requirements by sending a questionnaire to your client and record them in the template provided on SharePoint. At least 5 questions and respective answers should be recorded.   * Provide screenshot with min 5 questions and relative answer. |
| Proof of work  Text  Description automatically generated | | |
| SR09 | Priority Management | Complete the table for at least 5 different activities planned for project completion.  Use the Urgent/Important Matrix to plan every activity (Use Template provided on SharePoint)  Provide screenshot of priority Matrix |
| Proof of work | | |

# Project - Nestle Coffee bar - Data Flow Diagram (30 Marks)

**​​​​​​Outcome Mapping:**

**2.1 Development and architecture approach; and introductory architecture requirements engineering**

## Business Overview

You are appointed as a “System Analyst” in a “West-Tech” private limited company. The company is famous for developing quality software solutions for the various needs of their customer. The company is recently approached by the owner of “Nestle Coffee bar” to extend their business by making it available online. The company is looking forward to develop software for its online version. The online version should work as per the following functionality:

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* Customers can place orders online
* Invoice will be generated and sent to the customer
* Customers can pay online or in-store
* Admin can manage and update online menu bar

## Project Requirements

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| SR | Solution Requirement | Description |
| SR01 | Develop the architecture of “Nestle Coffee Bar” based on gathered requirements using Data Flow Diagram (Level 0) | Provide Screenshot of Level 0 Data Flow Diagram  It should cover the following criteria   * External Entities * Process * Appropriate DFD Symbols |
| Proof of work | | |
| SR02 | Develop Data Flow Diagram (Level1) architecture of “User Profile Signup” | Provide Screenshot of Level 1 Data Flow Diagram for "User Profile Signup"  It should cover the following criteria   * External Entities * Process * Data Storage * Appropriate DFD Symbols |
| Proof of work  Diagram, schematic  Description automatically generated | | |
| SR03 | Develop Data Flow Diagram (Level1) architecture of “User Profile Login” | Provide Screenshot of Level 1 Data Flow Diagram for "User Profile Login"  It should cover the following criteria   * External Entities * Process * Data Storage * Appropriate DFD Symbols |
| Proof of work  Diagram, schematic  Description automatically generated | | |
| SR04 | Develop Data Flow Diagram (Level1) architecture of “Order Placement” | Provide Screenshot of Level 1 Data Flow Diagram for “Order Placement”  It should cover the following criteria   * External Entities * Process * Data Storage * Appropriate DFD Symbols |
| Proof of work  Diagram, schematic  Description automatically generated | | |
| SR05 | Develop Data Flow Diagram (Level1) architecture of “Bill Pay Process” | Provide Screenshot of Level 1 Data Flow Diagram for “Bill Pay Process”  It should cover the following criteria   * External Entities * Process * Data Storage * Appropriate DFD Symbols |
| Proof of work  Diagram  Description automatically generated | | |
| SR06 | Develop Data Flow Diagram (Level1) architecture of “Inventory Management” | Provide Screenshot of Level 1 Data Flow Diagram for “Inventory Management”  It should cover the following criteria   * External Entities * Process * Data Storage * Appropriate DFD Symbols |
| Proof of work  Diagram  Description automatically generated | | |

# Project - Nestle Coffee bar - UML (30 marks)

**Outcome Mapping:**

**2.3 Investigation and analysis techniques, systems thinking, process management and modelling**

## Business Overview

You are appointed as a “System Analyst” in a “West-Tech” private limited company. The company is famous for developing quality software solutions for the various needs of their customer. The company is recently approached by the owner of “Nestle Coffee bar” to extend their business by making it available online. The company is looking forward to develop software for its online version. The online version should work as per the following functionality:

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* Customers can place orders online
* Invoice will be generated and sent to the customer
* Customers can pay online or in-store
* Admin can manage and update online menu bar

## Project Requirements

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| --- | --- | --- |
| SR | Solution Requirement | Description |
| SR02 | Use Case Diagram | Provide Screenshot of Use Case Diagram for "Nestle Coffee Bar"  It should cover the following criteria   * Identify Actor * Use Case Name * Relationships between Use Cases (include/extend) * Generalization * Association * System Symbol |
| Proof of work | | |
| SR03 | Class Diagram for User “User Profile Signup” | Provide Screenshot of Class Diagram for “User Profile Signup”  It should cover the following criteria   * Name of Class * Attributes (Scope and Type) at least 2 * Methods/Operations at least 1 |
| Proof of work | | |
| SR04 | Class Diagram for User “User Profile Login” | Provide Screenshot of Class Diagram for “User Profile Login”  It should cover the following criteria   * Name of Class * Attributes (Scope and Type) at least 2 * Methods/Operations at least 1 |
| Proof of work  Table  Description automatically generated with low confidence | | |
| SR05 | Class Diagram for “Order Placement" | Provide Screenshot of Class Diagram for “Order Placement”  It should cover the following criteria   * Name of Class * Attributes (Scope and Type) at least 2 * Methods/Operations at least 1 |
| Proof of work  Graphical user interface, text, application  Description automatically generated | | |
| SR06 | Class Diagram for “Inventory Management" | Provide Screenshot of Class Diagram for “Inventory Management”  It should cover the following criteria   * Name of Class * Attributes (Scope and Type) at least 2 * Methods/Operations at least 1 |
| Proof of work  Text  Description automatically generated | | |
| SR07 | Class Diagram for “Bill Pay Process" | Provide Screenshot of Class Diagram for “Bill Pay Process”  It should cover the following criteria   * Name of Class * Attributes (Scope and Type) at least 1 * Methods/Operations at least 1 |
| Proof of work  Text, table  Description automatically generated | | |
| SR08 | Activity Diagram for "Nestle Coffee Bar" | Provide Screenshot of Activity Diagram based on swim lanes for "Nestle Coffee Bar"  It should cover the following criteria   * Start Point * Forking * Joining * Correct Symbols per Event/Action * Clear Arrows to Signify Flow from one action to another * End Point |
| Proof of work  Diagram  Description automatically generated | | |

# Interview (10 Marks)

**Outcome Mapping:**

**2.1 Development and architecture approach; and introductory architecture requirements engineering.**

**2.2 Business logic, practices, concepts and values, and the role of information systems.**

**2.3 Investigation and analysis techniques, systems thinking, process management and modelling.**

Learner will be asked some questions based on the projects that they have completed to make this assessment and to check the authenticity of their work.