جامعة الحسين التقنية
Al Hussein Technical University

ASSIGNMENT BRIEF

HTU Course No: 40201220	**HTU Course Name:** Software Development Lifecycles
BTEC Unit Code: K/618/7408	**BTEC UNIT Name:** Software Development Lifecycles

Student Name/ID Number/Section	
HTU Course Number and Title	40201220 Software Development Lifecycles
BTEC Unit Code and Title	K/618/7408 Software Development Lifecycles
Academic Year	2024-2025 1
Assignment Author	Ashraf Alsmadi
Course Tutor	Ashraf Alsmadi - Razan Alquran - Mohammad Yahia - Balqis Aldabaibeh - Ashwaq Khalil
Assignment Title	Building a Software Utilizing a Software Development Lifecycles & Model
Assignment Ref No	1
Issue Date	17/11/2024
Formative Assessment dates	From 18/11/2024 to 09/01/2025
Submission Date	26/01/2025
IV Name & Date	Islam Alomari 16/11/2024

Submission Format

Submission for this assignment is expected to be an individual written reports. This reports should be:

- In the form of a soft copy (.docx) submitted to HTU Elearning,
- Signed Declaration form
- Written in a formal business style (headings, content page, paragraphs, subsections, and illustrations as appropriate, single spacing & font size 12)
- Supported with research and referenced using the Harvard referencing system.
- An oral discussion with your assessors illustrating your assignment and answering questions

Unit Learning Outcomes

LO1 Describe different software development lifecycles

LO2 Explain the importance of a feasibility study

LO3 Undertake a software development lifecycle

LO4 Discuss the suitability of software behavioural design techniques

Assignment Brief and Guidance

You have been hired by an agency to develop a comprehensive tourism booking software system. The system must handle various aspects of the booking process, including user registration, package creation, reservation management, and payment processing. Your task is to create a software system that is secure, efficient, and user-friendly.

You are required to provide the following:

Part 1: Software Lifecycle Models

1. Describe two iterative and two sequential software lifecycle models.
2. Explain risk Management: Definition, Steps, and Risk Strategies in Agile and Waterfall Models

3. Explain the purpose of a feasibility report in software development and discuss the components of a feasibility report.
4. Describe criteria and methods for comparing two technical solutions.

Part 2: Software Investigation and Analysis

1. Conduct a software investigation to understand the requirements for the tourism booking software by gathering requirements using two techniques (with evidence), analyzing current systems, and identifying key functionalities needed.
2. Create a feasibility report for the tourism booking software system.
3. Create a Software Requirements Specification (SRS) document for the tourism booking software system.
4. Discuss why you might select a particular lifecycle model for developing a tourism booking software system.

Part 3: Software Design Techniques and Behavioural Tools

1. Discuss using two examples the suitability of software behavioural design techniques.
2. What is the difference between a finite state machine (FSM) and an extended FSM, and examples of where each might be used in a tourism booking software system?
3. Create a Software Design Specification (SDS) document for the tourism booking software system. You must provide two techniques; one of the techniques must be a Data Flow Diagram (DFD) in two forms: context level, level 0.
4. Provide an implementation of the tourism booking software system. You can use tools like Adalo, WordPress. You may use other tools with the approval of your instructor. The implementation must cover following requirements (user registration, package creation, and reservation management) you must provide screenshots for each feature in addition to your implementation URL or Code.

Part 4: Software Quality and Testing

1. Discuss two approaches to improving software quality.
2. Evaluate the process of undertaking a systems investigation that you use in Part 2.1 with regard to its effectiveness in improving software quality.
3. Create a Requirements Traceability Matrix (RTM) document for the tourism booking software (The RTM must be relevent to your implementation in Part 3.4 minmum five functional requirements with two test cases for each one) .

Part 5: Evaluation and Justification

1. Assess the merits of applying the Waterfall lifecycle model to a large software development project.
2. Evaluate how criteria like cost, time, resources, and legal requirements affect the decision-making process and the overall feasibility of the tourism booking software project.

3. Justify the use of data analytics, machine learning, and other data-driven approaches to enhance the performance, reliability, and user satisfaction of the tourism booking software.

In Summary, the Student Must Submit:

- A final report based on the requirements of the above parts
- Your implementation of the tourism booking software system

Learning Outcomes and Assessment Criteria			
Learning Outcome	**Pass**	**Merit**	**Distinction**
LO1 Describe different software development lifecycles	**P1** Describe two iterative and two sequential software lifecycle models. **P2** Explain how risk is managed in software lifecycle models.	**M1** Discuss using an example, why a particular lifecycle model is selected for a development environment.	**D1** Assess the merits of applying the Waterfall lifecycle model to a large software development project.
LO2 Explain the importance of a feasibility study	**P3** Explain the purpose of a feasibility report. **P4** Describe how technical solutions can be compared.	**M2** Discuss the components of a feasibility report.	**D2** Assess the impact of different feasibility criteria on a software investigation.
LO3 Undertake a software development lifecycle	**P5** Undertake a software investigation to meet a business need. **P6** Use appropriate software analysis tools/techniques to carry out a software investigation and create supporting documentation.	**M3** Analyse how software requirements can be traced throughout the software lifecycle. **M4** Discuss two approaches to improving software quality.	**D3** Evaluate the process of undertaking a systems investigation with regard to its effectiveness in improving software quality.
LO4 Discuss the suitability of software behavioural design techniques	**P7** Discuss, using examples, the suitability of software behavioural design techniques.	**M5** Analyse a range of software behavioural tools and techniques. **M6** Differentiate between a finite state machine (FSM) and an extended FSM, providing an application of use for both.	**D4** Present justifications of how data-driven software can improve the reliability and effectiveness of software.