**ASSIGNMENT 01 FRONT SHEET**

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| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number and title** | Unit 09: Software Development Life Cycle | | |
| **Submission date** |  | **Date Received 1st submission** |  |
| **Re-submission Date** |  | **Date Received 2nd submission** |  |
| **Student Name** |  | **Student ID** |  |
| **Class** |  | **Assessor name** |  |
| **Student declaration**  I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice. | | | |
|  |  | **Student’s signature** |  |

**Grading grid**

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| P1 | P2 | P3 | P4 | M1 | M2 | D1 | D2 |
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| **❒** **Summative Feedback: ❒ Resubmission Feedback:** | | |
| **Grade:** | **Assessor Signature:** | **Date:** |
| **Internal Verifier’s Comments:** | | |
| **Signature & Date:** | | |

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# Introduction

This report is about the analysis of the development of software for Tune Source, a music store founded by John Margolis, Megan Taylor, and Phil Cooper. The analysis includes an SDLC model, risk assessment, and management along with feasibility studies. They began as an offline music business focusing on locating and collecting rare and high-quality vinyl; as a result, people consistently flock here to find their favorite recordings. Aside from a headquarters shop, they also offer a website where customers may buy and search records. Last year's recorded sales were $40 million, with an annual growth rate of 3% to 5%, and they wish to expand their business to earn more commissions. Their website had already been published and was given by a local Internet Service Provider in Los Angeles and the firm IT department; the website seemed to be functioning well. They also intend to establish modest kiosks to boost sales.

# SDLC models

## Definition

The Software Development Life Cycle (SDLC) is a software industry method for designing, developing, and testing high-quality software. The SDLC seeks to develop high-quality software that meets and exceeds customer expectations and is completed on time and within budget. (Tutorials Point, 2022)

SDLC is used inside a software organization to construct a software project. It is a thorough strategy that describes how to build, maintain, replace, and change or improve certain software. The life cycle outlines an approach for enhancing software quality and the development process. (Tutorials Point, 2022)

There are various types of SDLC models that a development team can choose to develop their project. Each model has its unique traits along with pros and cons. The following section discusses some of the most prevalent ones and the final verdict on which one suits the project the best is given followed by an explanation.

## Waterfall

### Definition

The Waterfall is considered the first SDLC model to be introduced and implemented. In a waterfall model, each phase must be finished before the next one can begin, and the stages must not overlap.



Figure 1 Waterfall Model (tutorialspoint, 2022)

### Advantages

* Structure is clear, granting ease of use for the team members.
* End goal is determined early, making it easier to develop the project
* Information is communicated effectively, making the model suitable for larger projects where tasks and team members are big.

(Lucid Content Team, 2022)

### Disadvantages

* Since the model does not allow going back to the previous step to make changes. Any changes needed to make to the system would have to wait until the whole process is done and a new one is made. Implementing changes is harder.
* Client and end-users are not included in the process, changes are likely to come after the product is finished and more time is needed to develop it.
* Testing is delayed until the process is complete. Risking errors appearing early but fixed late.

(Lucid Content Team, 2022)

### Principles

* The waterfall paradigm splits your processes into consecutive segments. You may only progress to the next step of your project when the current one has been completed. This also means that there is no room for deviation or revisiting a phase once it has been completed. The only way to go back is to start from scratch.
* Minimal client involvement: A waterfall project requires little or no customer engagement. This is largely because operations begin only once the customer's needs and objectives have been properly specified. The first meeting occurs before operations begin, and the second occurs when the project is nearing completion.
* This technique also includes detailed documenting of all requirements, the development process, and the end result. This contains everything from a timetable to the specific steps you will take to solve the client's difficulties. Because there is little to no client interaction during the development phase, every critical element must be recorded beforehand.

(Waseem, 2022)

## V-model

## Prototyping

Diagram

Description automatically generated

Figure 2 Prototyping model (Martin, 2022)

### Definition

The Prototyping Model is a model in which a prototype is developed, tested, and changed until it is acceptable. It also builds the foundation for the final system or program. It works best when the project's needs are not fully understood. It is an iterative, trial-and-error process used by both the developer and the customer. (Martin, 2022)

### Advantages

* Customers get an early say in the product, which increases customer happiness.
* Errors and missing functionality are quickly recognized.
* Prototypes can be utilized in more complex projects in the future.
* It stresses teamwork and adaptable design techniques.
* Users now understand how the product works better.
* Quicker client feedback allows for a greater understanding of customer demands.

(Lewis, 2019)

### Disadvantages

* The primary downside of this technique is that it is more time and money consuming than alternative development methods such as the spiral or Waterfall model. Because prototypes are often abandoned, some businesses may not see the benefit in using this method.
* Inviting client feedback so early in the development process may also generate issues. One issue is that there may be an overwhelming number of modification requests that are difficult to satisfy. Another difficulty might develop if, after viewing the prototype, the buyer requests a faster final release or loses interest in the product.

(Lewis, 2019)

### Principles

## Agile

## Spiral

# Feasibility study

# conclusion

# References

Tutorials Point, 2022. *SDLC Tutorial.* [Online]   
Available at: https://www.tutorialspoint.com/sdlc/  
[Accessed 24 June 2022].