1. Methodology:

1.1 Selected methodology:

Prototyping Model (Evolutionary Prototyping):

The chosen methodology for this application is evolutionary prototyping.

Using the evolutionary prototyping method, the software developer or development team first produces a prototype. The final product is created after collecting initial consumer feedback and creating subsequent prototypes, each with enhanced or expanded features (Sherrell, 2013).

Prototyping Model Phases (SDLC phases):

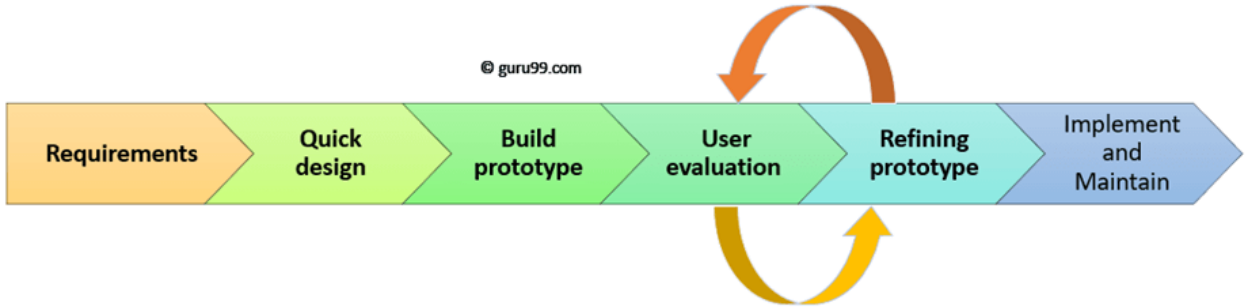

Figure 1 Prototyping Model Phases

i) Requirements gathering and analysis: The first step in prototyping is to do a requirement analysis. At this stage, the system's needs are thoroughly established. (Martin, 2022).

Throughout this process, I would ask the client questions to determine what they wanted from the product and move forward with their answers.

ii) Quick design: The second stage could consist of a quick design or a rough design. During this stage, the system's fundamental design is developed. But it's not a fully realized design yet. It provides the user with a quick overview of the system. The rapid design aids in the development of the prototype (naimishsahu08, 2021).

To give the client information on the product's basic design, I would therefore give them a quick design of the product.

iii) Build of a prototype: Using the information obtained during rapid design, I would create a true prototype of the product at this step. It is a condensed form of the necessary system.

iv) Initial user evaluation: After creating a prototype, I would give it to the client for a preliminary assessment. The prototype-refinement process considers any necessary modifications and consumer requirements.

v) Prototype refinement: I would adjust the prototype as needed in response to the user's recommendations and criticisms if they were unhappy with the present version. The refinement procedure is carried on until the client's demands are satisfied. I would develop a final system based on the customer-accepted prototype after the client is satisfied with the finished outcome.

vi) Implementation of the product: When the final prototype is made, I will extensively test the system using the right testing techniques and put the final product to use.

vii) Maintenance of the product: I would perform routine maintenance on the product to ensure that it works well over the long term.

Reasons for choosing this methodology:

i) One of this methodology's main elements is its support for the product's evolving environment. This component makes it simpler to meet the client’s needs more effectively.

ii) This methodology offers a superior risk analysis as changes are encouraged.

iii) This methodology requires user participation in the product's development phase to provide a better product.

iv) There is room for improvement, which enables the addition of new and improved features to the product.

v) With this methodology, errors and functional gaps are found right away, enabling me to develop a better product.