I.   Introduction

This document outlines the design-level specifications for the system, building upon the foundational work completed during the analysis phase. Its primary purpose is to provide a clear and detailed blueprint for implementation by refining the initial models and incorporating technical specifics necessary for development. Included within this document are refined class diagrams that detail attributes with data types, initial values, and valid ranges where appropriate. Methods are also specified with their return types, parameters, and pseudocode to clearly define their logic and intended behavior. In addition to the class diagrams, the document presents statechart diagrams for key objects to illustrate their lifecycle, showing how they transition between states in response to events or method invocations. Finally, first-cut domain sequence diagrams are included for each core use case to demonstrate the flow of interactions between objects and support a better understanding of system functionality. Collectively, these elements provide a comprehensive design framework that guides the implementation and ensures alignment with system requirements.