Project Plan

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*Premium Travel*

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# Introduction

This document explains a comprehensive approach to the project. The entrance criteria for deployment included designing and documenting several object-oriented diagrams, including but not limited to state machine diagrams, class diagrams, and use case diagrams. These diagrams were used to outline and framework variables, classes, and data structures. For exit criteria, the program will utilize Java software and allow information to be displayed through an integrated development environment such as IntelliJ IDEA.

# Project Overview

## Scope

### Identification

The system will help streamline employees at Premium Travel in their day-to-day tasks. In addition, the need for a paid subscription to a database has been removed by implementing XML and JSON serialization. This will also prevent any required maintenance on the code as it is set to be flexible not only for several users but also for several entries.

### System Overview

The system will help streamline employees at Premium Travel in their day-to-day task. By implementing XML and JSON serialization the need for he paid subscription to a database has been removed. This will also prevent any required maintenance on the code as it is set to be flexible not only for a number of users, but for a number of entries.

### Document Overview

This document aims to share all material required to build the project and all documentation necessary to profile the project. In addition, a high-level description will feature information required for software development and elaborate on the plan generated for execution.

## Current System or Situation

The overall system will be compiled using IntelliJ IDEA and Java language. Employees will interact only with the user interface. Because no database is being built into the system, private information will be encrypted into serialization and deserialization to prevent a breach

## Background, Objectives, and Scope

Requirements have been stated by the chief technical officer for Premium Travel and will be met with compliance.

## Operational Policies and Constraints

Travel agents will have access to all information in the system. However, it is recommended that preventative measures be taken place to avoid any data loss.

# Features

## Feature List

Behavioral design patterns show the algorithm and assignment of responsibilities between the objects to allow commands to contain all information, alter behavior internally, and allow objects to be interchangeable. Each of these patterns creates a unique yet common identity, allowing for That could not happen without utilizing these patterns. The flexibility that the patterns demonstrate will help the business overall as it adds employees and as it adds customers. The goal of behavioral design patterns is to improve the overall performance of the software.

Moreover, it is common knowledge that organization is beneficial in many aspects of life, from work to personal. Proper organization and categorizing of the interaction between objects and classes is necessary and object-oriented development. This allows for reusability, maintainability, efficiency, functionality, and reliability. This also increases portability because no excess software, databases, APIs, or other requirements exist to use the code. Responsibilities can be divided among the different patterns, allowing for this coupling and high cohesion. Factory design patterns have been included with the behavioral design pattern because they can help create modifications easily and help prevent coupling problems. Adding factory design patterns creates an elegant way to modify the toad without the rippling effect. In addition, it helps provide the framework for abstract methods into a concrete class by encapsulating created objects.

Below are images of the source code with the patterns implemented in the project for Premium Travel:

* **Strategy Pattern:**

Text

Description automatically generated

* **Factory Pattern:**

Text

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* **Decorator Pattern** :

Text

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* **State Pattern:**

Text

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* **Singleton Pattern:**

**Text

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# Project Process

When designing the project, we used many different strategies that have been incorporated into object-oriented development. The first three diagrams built upon each opportunity to add more detail. Knowing that object-oriented programming relies on encapsulation, abstraction, inheritance, and polymorphism helps to create a visual of simplistic diagrams that contain intricate amounts of information. The code would be modeled around objects, creating the unique attributes and behavior of the software, allowing for the function and logic to present themselves. Object storage is utilized in the form of XML and JSON serialization by not using a database or backend communication while designing source code. As ideas were formed and coding took place, constant use of UML class diagrams was compared and studied. UML diagrams were essential to ensure the appropriate implementation of inheritance and polymorphism. They also verify the appropriate abstraction of classes. The example provided displays some of the communication between classes and the relationships between those classes. As Premium Travel grows, software developers will use these diagrams and design patterns to maintain the code to meet all requirements of potential stakeholders.

**Premium Travel UML Diagram:**

**Graphical user interface, text

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