Sydney Airbnb Application

Vishesh Sagar S5247450

Hayden Baker S5278212

Zachary Hardman S5134726

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# Introduction

## Problem Background

Sydney becomes as an important node within Airbnb's environment in the constantly changing world of international housing. With Sydney holding the fourth position in the worldwide listings hierarchy in 2016, Sydney continues to be a popular destination for Airbnb fans. The Sydney Airbnb Dataset, a sizable collection of data on homestay listings, served as the inspiration for this research. The project seeks to make use of this dataset in order to reveal the complex interactions linking Airbnb's effect with Sydney's many neighbourhoods.

## Scope

We're focusing on specific tasks related to data analysis, like figuring out vibes in different neighbourhoods and spotting trends. By narrowing its scope, the project seeks to develop a powerful data analysis tool that takes the form of software and is designed to interact with the complexities of the Sydney Airbnb Dataset. Notably, the initiative does not aim to create a standalone Airbnb platform. Instead, creating a tool capable of coordinating analytical efforts is the focus. These projects, in particular, focus on identifying the distinctive characteristics of various neighbourhoods and identifying historical trends engrained in the dataset.

## Document contents

This document serves as the project plan for the Sydney Airbnb Dataset Tool. It outlines the tasks, timeline, and deliverables for the project's design and implementation stages. The project plan is organized as follows:

Section 2: Work-Breakdown Structure (WBS)

- Section 3: Activity Definition and Estimation

- Section 4: Gantt Chart

- Section 5: Git Log

- Section 6: Other Supporting Documents

- Section 7: Conclusion

This project plan will guide the project team throughout the development process, ensuring tasks are properly defined, estimated, and tracked. Regular updates will be made to the Gantt chart and Git log to reflect the progress made and adjustments to the timeline. The ultimate goal is to deliver a robust and user-friendly data analysis tool that fulfils the requirements outlined in the Software Design Document.

The subsequent sections of this document provide detailed information about the various aspects of the project plan, including task breakdown, time estimation, and the overall timeline for project completion.

# Work Breakdown Structure

1. Project Initiation

1.1 Understand Dataset

1.2 Define Project Goals and Scope

1.3 Form Project Team

2. Requirements and Analysis

2.1 Gather Dataset Details

2.2 Identify Analysis and Visualization Needs

2.3 Define Functional and Non-functional Requirements

3. User Interface Design

3.1 Create Wireframes for User Interface

3.2 Design User Interaction Flow

3.3 Define UI Components and Layout

4. Software Architecture

4.1 Select Programming Language and Framework

4.2 Design System Components (Frontend, Backend)

4.3 Define Data Storage and Retrieval Approach

5. Implement Data Analysis Features

5.1 Develop Accident Information Display

5.2 Implement Accidents by Hour Chart

5.3 Integrate Accident Filtering by Type

5.4 Build Alcohol Impact Analysis

6. Additional Analysis Feature

6.1 Design and Implement Custom Analysis Feature

7. Testing and Quality Assurance

7.1 Unit Testing for Individual Components

7.2 Integration Testing of Modules

7.3 User Acceptance Testing

8. Documentation

8.1 User Manual Preparation

8.2 Software Design Document Update

8.3 Testing Report Compilation

9. Project Management

9.1 Regular Team Meetings and Progress Updates

9.2 Maintain Git Repository and Version Control

10. Project Review and Finalization

10.1 Review Project Deliverables

10.2 Refine User Interface and Functionality

10.3 Final Testing and Bug Fixing

11. Submission Preparation

11.1 Compile Required Documents

11.2 Review and Ensure Completion

12. Project Submission

# Activity Definition & Estimation

1. Project Initiation- Total Estimated Time: 5 days

* 1.1 Understand Dataset: Analyse the dataset to understand its content, structure, and potential insights. This will involve preliminary data exploration and possibly some basic statistics.

Estimated Time: 2 days

* 1.2 Define Project Goals and Scope: Set clear objectives for the project, delineate the scope, and ensure alignment with stakeholder expectations.

Estimated Time: 2 days

* 1.3 Form Project Team:Assemble a team with the required skills and expertise, including data analysts, developers, and testers.

Estimated Time: 1 day

2. Requirements and Analysis - Total Estimated Time: 5 days

* 2.1 Gather Dataset Details: Delve deeper into the dataset to gather specifics like its source, size, attributes, and other relevant metadata.

Estimated Time: 1 day

* 2.2 Identify Analysis and Visualization Needs: Determine the types of analysis and visualizations that can be derived from the dataset, focusing on property listings and customer reviews.

Estimated Time: 2 days

* 2.3 Define Functional and Non-functional Requirements: Specify the functionalities the project should achieve and set non-functional criteria like performance, usability, and security.

Estimated Time: 2 days

3. User Interface Design - Total Estimated Time: 6 days

* 3.1 Create Wireframes for User Interface: Sketch out basic visual representations of the user interface, highlighting layout and user pathways.

Estimated Time: 2 days

* 3.2 Design User Interaction Flow: Chart the user's journey through the application, defining how they'll interact with the various features.

Estimated Time: 2 days

* 3.3 Define UI Components and Layout: Finalize the design elements, components, and their positioning within the interface.

Estimated Time: 2 days

4. Software Architecture - Total Estimated Time: 5 days

* 4.1 Select Programming Language and Framework: Choose the most suitable programming language and framework based on the project's requirements and team's proficiency.

Estimated Time: 1 day

* 4.2 Design System Components (Frontend, Backend): Architect the system, detailing the frontend and backend components and how they'll interact.

Estimated Time: 3 days

* 4.3 Define Data Storage and Retrieval Approach: Decide on data storage solutions (like databases) and design efficient data retrieval methods.

Estimated Time: 1 day

* 4.4 Part A Submission: Relevant files will be consolidated and submitted**.**

Estimated Time: 1 day inclusive

5. Implement Data Analysis Features - Total Estimated Time: 15 days

* 5.1 Report the information of all listings in a specified suburb: Develop a feature to filter and display property listings based on user-specified suburbs.

Estimated Time: 3 days

* 5.2 Implement chart showing distribution of property prices: Design a visualization that displays the range and distribution of property prices.

Estimated Time: 2 days

* 5.3 Retrieve all records containing a user-entered keyword (e.g., pool, pet): Implement a search feature allowing users to find listings based on specific keywords.

Estimated Time: 2 days

* 5.4 Analyse how many customers commented on factors related to cleanliness: Develop an analysis feature to quantify and possibly visualize customer feedback on cleanliness.

Estimated Time: 3 days

* 5.5 Implement search by name feature: Develop a search feature that allows the ability to search review by name.

Estimated Time: 5 days

7. Testing and Quality Assurance - Total Estimated Time: 8 days

* 7.1 Unit Testing for Individual Components: Design and execute tests for each component or unit of the application, ensuring they operate as intended.

Estimated Time: 3 days

* 7.2 Integration Testing of Modules: Test the interplay between the application's components or modules, ensuring smooth operation.

Estimated Time: 3 days

* 7.3 User Acceptance Testing: Engage potential users to test the application under real-world conditions, collecting feedback to ensure it meets their needs and expectations.

Estimated Time: 2 days

8. Documentation - Total Estimated Time: 5 days

* 8.1 User Manual Preparation: Draft a detailed guide to assist end-users in navigating and utilizing the application.

Estimated Time: 2 days

* 8.2 Software Design Document Update: Update the design documentation to mirror the application's final architecture and features.

Estimated Time: 2 days

* 8.3 Testing Report Compilation: Document the results from all testing phases, including any discovered bugs and their resolutions.

Estimated Time: 1 day

9. Project Management - Total Estimated Time: 2 days

* 9.1 Regular Team Meetings and Progress Updates: Schedule and hold regular team meetings to discuss progress, tackle issues, and ensure alignment with goals.

Estimated Time: 1 day

* 9.2 Maintain Git Repository and Version Control: Make sure code is consistently committed to a Git repository and adhere to version control best practices.

Estimated Time: 1 day

10. Project Review and Finalization - Total Estimated Time: 5 days

* 10.1 Review Project Deliverables: Assess all project outcomes to ensure they meet the defined requirements and quality standards.

Estimated Time: 2 days

* 10.2 Refine User Interface and Functionality: Make any final adjustments to the UI and functionality based on feedback and testing outcomes.

Estimated Time: 2 days

* 10.3 Final Testing and Bug Fixing: Conduct a last round of testing to identify and rectify any remaining issues.

Estimated Time: 1 day

11. Submission Preparation and submission - Total Estimated Time: 2 days

* 11.1 Compile Required Documents: Assemble all necessary documentation, like design documents, user manuals, and testing reports, in preparation for submission.

Estimated Time: 1 day

* 11.2 Review and Ensure Completion: Conduct a last review to ensure every aspect of the project is complete and up to standard.

Estimated Time: 1 day

12. Project Submission: Submit the finalized project, inclusive of all deliverables and documentation, to authority.

Total Estimated Time: 2 days

# Gantt Chart

*This section should contain your Gantt chart. The items in the Gantt chart should match the activity definition from section 3. You should also submit your Gantt chart file separately.*