**Task 1: Design Data Structure for Calculating Sprint Team's Velocity**

**Objective:**

The goal of this document is to outline the design decisions for creating a data structure that enables the efficient calculation of a sprint team's average velocity, fulfilling the user story requirements.

**Design Choices:**

**1. Data Structure Selection** **(Estimated Time: 20 minutes):**

* The system will utilize a dictionary-based data structure to store sprint points.
* The dictionary structure allows key-value pairing, facilitating easy association of sprint numbers with their respective point completions.

**2. Key-Value Pairing** **(Estimated Time: 10 minutes):**

* Sprint numbers will serve as keys and point completions will be values in the dictionary.
* This design choice ensures a straightforward and intuitive relationship between sprint numbers and their corresponding point completions.

**3. Efficiency Consideration** **(Estimated Time: 10 minutes):**

* The design is geared towards efficiency in calculating the team's average velocity.
* Dictionary operations, such as lookup and modification, provide swift access to sprint points, contributing to an efficient computation process.

**Implementation Plan:**

1. **Data Structure Initialization:**

* Implement a function to initialize an empty dictionary to store sprint points.
* This function will be responsible for setting up the initial data structure used throughout the application.

1. **Adding Sprint Points:**

* Develop a function to add sprint points to the dictionary.
* Parameters include sprint number and point completion, updating the dictionary accordingly.

1. **Calculating Average Velocity:**

* Implement a function to calculate the average velocity based on the points stored in the dictionary.
* Iterate through the dictionary, summing up point completions, and then calculate the average.

1. **Testing:**

* Create unit tests to validate the correctness of the implemented functions.
* Include tests for dictionary initialization, adding sprint points, and calculating average velocity.

**Conclusion:**

This design document outlines the choice of a dictionary-based data structure for storing sprint points. The design aims to provide an efficient solution for calculating a sprint team's average velocity, meeting the user's requirements. Implementation will follow the outlined plan, with testing ensuring the robustness of the system.