**Software Requirements Specifications (SRS) for "Wandering in the Woods" Game**

1. **Introduction:**
   1. Purpose:

This document describes the software requirements for the "Wandering in the Woods" game, a computer simulation designed to educate K-8 students about computation, computational thinking, and related concepts.

* 1. Scope:

The game offers three versions tailored for different grade levels (K-2, 3-5, and 6-8) with increasing complexity.

1. **General Description:**
   1. Product Perspective:

The software is a standalone application that runs on standard computer systems.

* 1. Product Functions:
* Provide a visual grid simulation where players (representing people) wander.
* Offer distinct versions for different grade levels.
* Display statistics and results based on player interactions.
* Play background music and sounds to enhance user experience.

1. **Specific Requirements:**
   1. External Interfaces:

* User Interface: Graphical interface with visual grids, buttons, and statistics display.
* Audio Interface: Background music and sound effects.
  1. Functions:

1. K-2 Version:

* Square grid setup.
* Two players start in diagonally opposite corners.
* Players move randomly.
* When players meet, a celebration animation/sound plays.

1. 3-5 Version:

* Users can set grid dimensions (rectangular or square).
* 2 to 4 players allowed; users can set their starting positions.
* Players move randomly, converging when they meet.
* Statistics displayed include longest run, shortest run, and average run.

1. 6-8 Version:

* All features of 3-5 version
* Students can run experiments to analyze average run times.
* Introduces different wandering protocols for experimentation.
  1. Performance Requirements:

The application should support real-time movements and interactions for the players on the grid without noticeable lag.

* 1. Attributes:
* Usability: The software should be intuitive for K-8 students.
* Reliability: The software should run without crashes or errors.
* Robustness: The software should handle unpredictable inputs, especially given that kids may interact with it in unexpected ways.

**User Guide for "Wandering in the Woods" Game**

1. **Introduction**

Welcome to the "Wandering in the Woods" game! This guide will walk you through how to navigate and play the game across its three levels tailored for grades K-2, 3-5, and 6-8.

1. **Starting the Game:**

Go to folder named **dist** and double click on the main.exe file in that folder. Upon launching the game, you will be presented with the main menu, prompting you to select the level you wish to play.

1. **Playing the Game:**
2. Level K-2:
3. Click on the "K-2" button from the main menu.
4. The game will automatically start a simulation for two players.
5. Observe the two players as they wander the grid.
6. Once the players meet, a celebratory animation or sound will play.
7. After this, the game will exit to the main menu.
8. Level 3-5:
9. Click on the "3-5" button from the main menu.
10. You will be directed to a setup screen where you can:

* Adjust the size of the grid.
* Select the number of players (2, 3, or 4).

1. After setting up the game, proceed to place the players on the grid by clicking on the desired cells.
2. As soon as you've placed the correct number of players, the simulation will begin automatically.
3. Watch the players as they move around the grid, converging when they meet.
4. Upon completion of the simulation, the game will display statistics such as the longest run, shortest run, and average run.
5. After viewing the statistics, you will be redirected to the setup screen for another round or to select a different level.
6. Level 6-8
7. Click on the "6-8" button from the main menu.
8. You will be directed to a detailed setup screen where you can:

* Adjust the size of the grid.
* Choose a wandering protocol from the available options.

1. After making your selections, click on the button labeled "Place Player".
2. An empty grid will appear. Place the players on the grid by clicking on the desired cells.
3. Once players are placed, the simulation will commence immediately.
4. Observe the players' movements based on the wandering protocol you've chosen.
5. **Exiting the Game**

To exit the game at any point, simply close the game window.