ReDI Python I: Maze Game

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Overview

This is a proposal for a course project in Fall 2017 Python Basics course at ReDI School

Goals

1. Learn how to build simple game with pseudo-graphics interface
2. Understand data structures like dictionaries and two-dimensional arrays
3. Communicate with fellow developers, define modules and distribute tasks in the group. Combine the pieces together

Specifications

The idea is to write a maze game, where the player defines the size of the maze to be generated by the game and then tries to escape it by moving right, left, up or down.

Basic version (single player)

The basic version will include square shaped labyrinth (a grid with some cells marked as walls) and one player. You start at entrance at the border and try to exit pressing arrow buttons on the keyboard to make moves. After you escape the game should display number of steps and time used.

Extended version (two players)

Extended version might allow multi-player setup with two players sharing the same keyboard (one uses arrow keys and another one using keys ‘a’, ‘d’, ‘w’, ‘s’ to move left, right, up and down respectively. When one player escapes, the game offers to repeat. Total score (number of wins) is tracked.

Milestones

I. Maze generator

The program can generate a random maze in memory when the user enters the required size

II. Maze visualisation

Given a maze and coordinates of one or two players the program can print it on the screen using pseudo-graphics (text mode)

III. Player movements

When the user presses defined keys (arrows), his position in the maze changes. After that if you run Maze visualisation again the position of the user will be different

IV. Single-player mode

There is a way to run the whole game using the results of I., II. and III. where the maze is generated and one player can move there. The game ends when the player reaches the exit point.

V. Two-player mode

In addition to IV. there is a way to run the game in two-player mode and compete each other using the same keyboard