Voice Recognition Project

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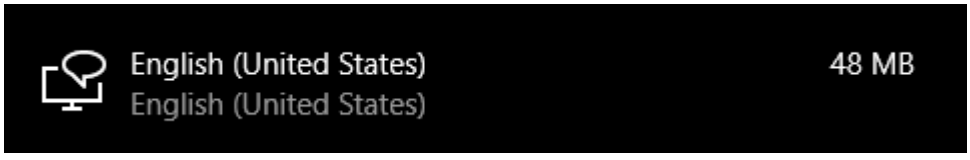
Unity version: 2019.4.18f1

Requirements:

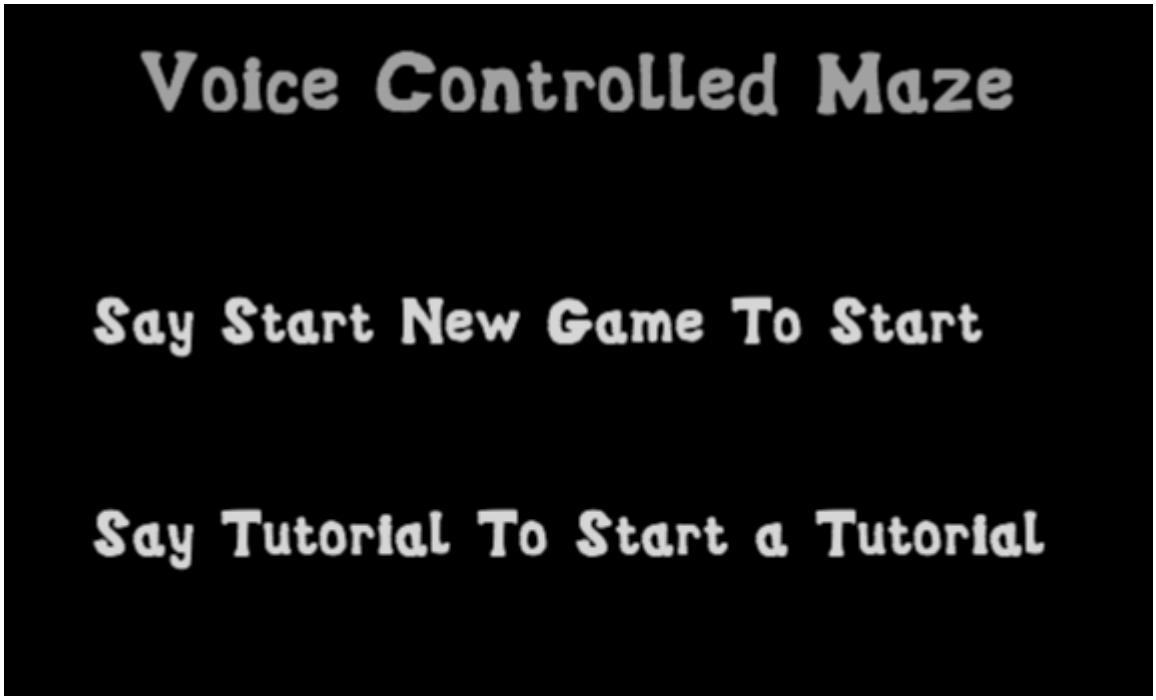
Make sure you have English (US) speech recognition installed.



If not (**on Windows 10**) go to Settings > Time & Language > Language > Speech or simply press ⊞ key and type *languageAt the end of this document, you can find a list of all the voice commands used in the game.*

Voice controlled 2D Maze game, this game replaces traditional ways of input such as mouse and keyboard.

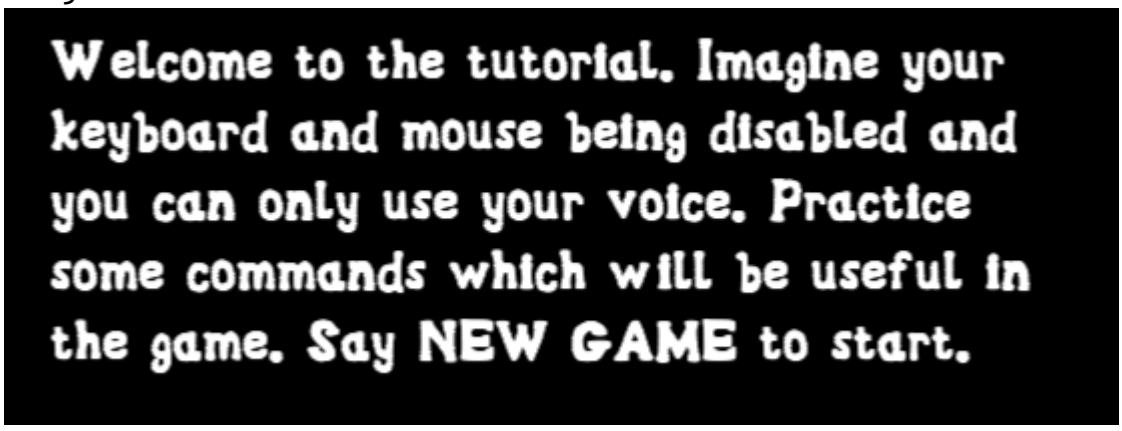
Main Menu



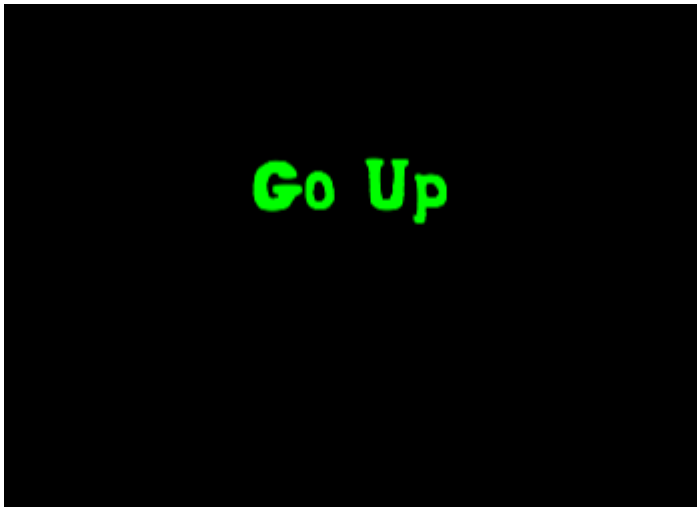
Menu is intuitive and suggest the user what commands to use to perform particular action.

Tutorial

I've also implemented a tutorial part where user can practice commands used during the game.



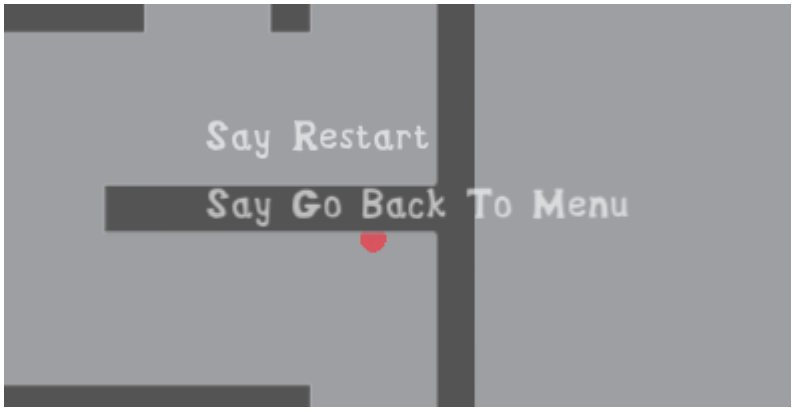
Several commands are displayed, and once they match with the user's voice input then it highlights green and proceed to the next command.



The Game

The game itself is quite simple, the goal is to direct a red dot to the end of a maze while not touching the walls.

Once the player hit the wall. The screen is invoked which gives user an options to either restart or go back to the menu.



Throughout the game, in the bottom left corner there is an information indicating what command has been used.

Rules & voice commands

```
<rule id="toplevel" scope="public">
    <one-of>
        <item>
            <ruleref uri="#playstate" />
        </item>

        <item>
            <ruleref uri="#movestate" />
        </item>
        <item>
            <ruleref uri="#tutorialstate" />
        </item>

        <item>
            <ruleref uri="#ingame" />
        </item>
        <item>
            <ruleref uri="#losemenu" />
        </item>
    </one-of>
</rule>
```

Play State rule is responsible for several menu actions. Each action contains additional alternatives which player can use.

PlayState

```
<!--Menu Controls-->
<rule id="playstate">
    <one-of>
        <item>
            <tag>out.action = "start";</tag>

            <one-of>
                <item>Start a new game</item>
                <item>Begin a new game</item>
                <item>Play a new game</item>
                <item>New Game</item>
                <item>I want to play</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "quit";</tag>

            <one-of>
                <item>Quit the game</item>
                <item>I give up</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "tutorial";</tag>

            <one-of>
                <item>Go to tutorial</item>
                <item>Start a tutorial</item>
            </one-of>
        </item>
    </one-of>
</rule>
```

Start – starts a new game

Quit – closes the application

Tutorial – invokes tutorial part

MoveState

```
<!-- Controls the player movement -->
<rule id="movestate">
    <one-of>
        <item>
            <tag>out.action = "right";</tag>

            <one-of>
                <item>Move Right</item>
                <item>Go Right</item>
                <item>Turn Right </item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "left";</tag>

            <one-of>
                <item>Move Left</item>
                <item>Go Left</item>
                <item>Turn Left</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "up";</tag>

            <one-of>
                <item>Move Up</item>
                <item>Go Up</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "down";</tag>

            <one-of>
                <item>Move Down</item>
                <item>Go Down</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "stop";</tag>

            <one-of>
                <item>Stay</item>
                <item>Stop here</item>
                <item>Don't move</item>
```

Right – player moves right

Left – player moves left

Up – player goes upwards

Down – player goes down

Stop – command will stop the player

TutorialState

```
<!--Tutorial Controls-->
<rule id="tutorialstate">
    <one-of>
        <item>
            <tag>out.action = "ready";</tag>

            <one-of>
                <item>I'am ready</item>
                <item>Let's go</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "menu";</tag>

            <one-of>
                <item>Go back to the menu</item>
                <item>Bring me to the menu</item>
            </one-of>
        </item>
    </one-of>
</rule>
```

Tutorial part uses few commands from the *movestate* but it also has few unique commands.

Ready – proceeds to the game after completing a tutorial.

Menu – bring the user back to the menu after completing a tutorial.

InGame

```
<!--In Game Controls-->
<rule id="ingame">
    <one-of>
        <item>
            <tag>out.action = "resume";</tag>

            <one-of>
                <item>Resume the game</item>
            </one-of>
        </item>

        <item>
            <tag>out.action = "pause";</tag>

            <one-of>
                <item>Pause the game</item>
            </one-of>
        </item>
    </one-of>
</rule>
```

Ingame rules controls the in game actions such as resume/pause the game.

Resume – resumes the game once it's paused.

Pause – stops the game.

LoseMenu

```
    <!--Lose Menu Controls-->
    <rule id="losemenu">
        <one-of>
            <item>
                <tag>out.action = "restart";</tag>

                <one-of>
                    <item>Restart the Game</item>
                    <item>Play Again</item>
                </one-of>
            </item>

        </one-of>
    </rule>
</grammar>
```

Lose menu controls the actions enabled after the player collides with the wall.

Restart – simply restart the game.

Grammar List

Start

- Start a New Game
- Play a new game
- New Game
- I want to play

Quit

- Quit the Game
- I give up

Tutorial

- Practice
- Train

Right

- Move Right
- Go Right
- Turn Right

Left

- Move Left
- Turn Left
- Go Left

Up

- Move Up
- Go Up

Down

- Move Down
- Go Down

Stop

- Stay
- Stop here
- Don’t move

Ready

- I’m ready
- Let’s go

Menu

- Go back to the menu
- Bring me to the menu

Resume

- Resume the Game

Pause

- Pause the game

Restart

- Restart The Game
- Play again