

Turnip Time

Custom Project Final Report

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Introduction

Turnip Time is a turnip harvesting game where one or two players move around collecting turnips. In one player mode, the goal is to collect turnips until you fill up your basket. In two player mode, the goal of player one remains the same while player two's goal is to steal the turnips away from player one. Essentially, if player two retrieves the turnip before player one does, player one's basket loses one turnip since player two took player one's turnip. A player wins the game when either the basket becomes full or empty.

Insert a picture of your project

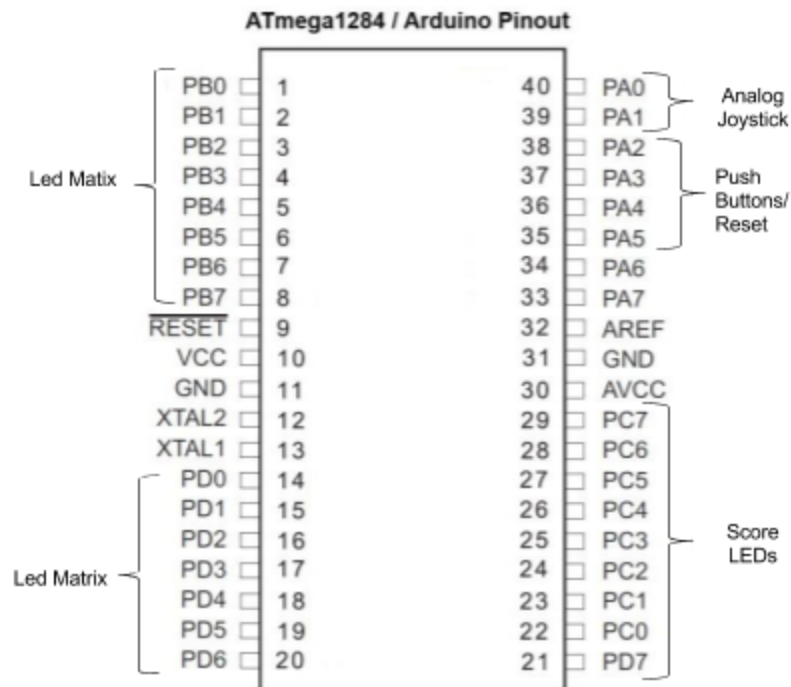
Hardware

Parts List

The hardware that was used in this design is listed below. The equipment that was not taught in this course has been bolded.

- ATmega1284p microcontroller
- 8x8 Led Matrix
- 10-LED bar
- Push-Buttons
- **Analog Joystick**

Pinout



Completed Complexities:

- Integrating and calibrating the joystick
- Using 8x8 Led Matrix display
- Two player mode

Incomplete complexities:

Youtube Link

<https://www.youtube.com/watch?v=pSWu8MQuBmc&feature=youtu.be>

Known Bugs and Shortcomings

- Upon starting the game, the Led Matrix display flickers. I believe this is because of my code design where the patterns displayed are being turned on and off really fast. To fix this bug, I would probably have to redesign my code so that all of the outputs to my led matrix are in synch or stable, not just flashing different patterns really fast so that it seems like only one pattern design is occurring at once.

Future work

In this section pretend for a moment that you were going to continue working on the project. What would be the next feature you would add?

In the future, I am going to fix the flicker glitch and will add power ups to the game. For example, maybe once in a while a really big turnip will appear. Big turnips will probably give more points than a regular turnip. I may also add “bad” turnips that are detrimental to your score if collected. As far as complexities go, I would like to use shift registers so that the turnips and players are color coded and everything is not the same color. Some game music would also be nice if it were added.