

## Wishing on a Star Game Documentation

### Project outline:

Each student may choose the objective of the systems integration project. The choice is subject to the approval of the instructor, and it should demonstrate skills accumulated throughout the semester. The specific requirements include the following.

(p5.js + tone.js + Arduino):

An Arduino must receive at least one digital or analog input and at least one digital or analog output. The project must include a graphical elements implemented using P5 and audio elements implemented using Tone.js. The project must convey some interaction from Arduino to both P5 and Tone.js.

Graphics Suggestions (If developing some single/multi player games):

- 3 scenes: welcome, game play and game over scenes.
- Timer variable to check the game time, score variable to record the scores, and life variable to keep track of the players allowed lives.
- 2 or more classes: Player(s) and Opponent(s) with unique features
- 2 or more user interactions with mouse, keyboards, etc.

Sound Suggestions:

- 2 separate events (one of these: Event, Loop, Part, Pattern, or Sequence)
- 3 different instruments with unique parameters. Only one of these can be a sampler or an object that plays a sample. The other two, synthesizers.
- 2 different effects.
- At least one parameter of these instruments and effects must be modulated. Remember that modulation can be done by an LFO, an envelope or scheduling of a signal (ex: rampTo).
- If you use samples they may not be longer than 3 seconds. This is so that you can not use pre-recorded loops. If you want a background music loop you must compose it yourself with an event. Remember that only one of your instruments can play samples.

Physical Computing Requirements:

- At least one digital and/or analog input sent in from the physical world to control the application
- At least one digital and/or analog output from the application to control something in they physical world

My project elements for a single-player web-based game.

Graphics: Location background, sprites for Star Prince, meteors, text displaying the score, timer, game start, and game over.

Sound: Synth SFXs for catching the stars, damage, background music, and game-over music.

Hardware Input: Joystick (control movement - left & right)

Hardware Output: 3 LEDs (life)

### **Narrative description of the project:**

The myth goes that wishing upon a shooting star will make your wish come true. Star Prince, the character of the player, rules the Wish Planet and oversees everyone's wishes. However, due to a villainous attack, every wish has been scattered throughout the universe. Knowing his responsibility as the prince of the planet, Star Prince sets out on a journey to collect every lost wish. Players will have to catch falling stars, which will count as points in order to save the wishes. While the player aims to collect the stars, there will be meteors falling down as well. Getting hit by three meteors will result in game over.

### **Future Development:**

For future development of the game, I want to focus on improving the technical aspect as well as making the game more interesting. The addition of enemy creatures on floor level can make the game more stimulating and fun as the difficulty level increases. With this implementation, the prince character will be updated in movement and be able to jump. Increasing the speed and more meteors can make the game more addicting and challenging as well.