

# CS101 PROJECT LASSO

## HELP DOCUMENT

**This project is an enhancement of the simple lasso game that was given as the starter code for this project.** Before reading this help document, please read the file README.pdf in the same folder (Enhancements to the starter code are listed in the README.pdf file).

**Objective:** The objective of the game is to maximise our score by collecting more coins, avoiding the bombs, along with the strategic use of boosters while moving up in levels.

### Getting Started:

#### 1. Compiling the Game:

This project is done on Ubuntu 18.04. For compiling the game, first navigate to the directory where the zip file has been extracted. From there, run the following command:

```
s++ -o lasso lasso.cpp coin.cpp MovingObject.cpp bomb.cpp booster.cpp main.cpp
```

This command will make an executable called lasso.

#### 2. Executing the file:

To execute the file, stay in the same directory and run the command:

```
./lasso
```

This will launch the executable and the game will start.

### Playing the Game:

#### 1. Controls:

- **'t':** (throw) on using this, if the lasso is in a stationary state, then the lasso is launched
- **'l':** (loop) when the lasso is in a moving state, then this will capture all objects in its capture radius and attach it to the lasso.
- **'y':** (yank) if the lasso is in a moving state, then the lasso is yanked. The lasso returns to its original position. All the objects attached to the lasso take their effects (mentioned in subsection "Types Of Objects") and the number of coins and lives are adjusted accordingly.
- **'q':** (quit) This is to be used in the event we need to quit the game. Note that using this will lead to stopping the game and the progress made till then will be lost.
- **'[':** to rotate the lasso in clockwise direction when the lasso is stationary
- **']':** to rotate the lasso in anticlockwise direction

## 2. Types of Objects

- Regular coin: This is Golden in colour. Collecting this will increase your points by one. Failing to collect it will lead to the loss of a life. If the number of lives left reach 0, the game ends.
- Bomb: This is Red in colour. Collecting this will reduce the score by 1. Hence, these are to be avoided.
- Boosters: There are 2 types of boosters. Any of them can spawn randomly. These boosters are the only way to adjust the speed of the lasso.
  1. Type 1: These are blue in colour. On collecting this, we get a bonus of 2 coins and an extra life. However, this also leads to a decrease in the speed of the lasso.
  2. Type 2: These are purple in colour. On collecting these, we lose 2 coins. However, the speed of the lasso increases if we collect this.

Note that the game is easier to play with a faster lasso, and a slower lasso means a tougher game, hence collecting boosters should be done strategically.

## 3. Gameplay

- The player starts with a certain number of lives, and the game starts at level 0. We must start by pressing 't' to launch the lasso and trying to catch the coin.
- On catching coins, we move ahead in levels.
  - Lev 0 - (From coins 0-2) An introductory level, coins and boosters spawn from the same fixed location.
  - Lev 1 - (From coins 3-5) The spawning of coins and boosters is from a random location within a limited region.
  - Lev 2 - (From coins 6-7) Bombs are introduced from this level, and they must not be caught.
  - Lev 3 - (From coins 8 and above) Coins and Boosters now spawn randomly from a more larger region.
- If we fail to catch a coin (golden), then we lose a life.
- The game ends on reaching 0 lives.
- The objective of the game is to maximise our score without losing too many lives.
  - Extra lives can be obtained from blue boosters with reduction of lasso speed
  - Speed of lasso can be increased by Purple booster with reduction in coins
- The current high score will also be displayed on the screen. The player can try to beat the score and if he/she succeeds, then the high score is updated in real time. At the end of the game, the new high score is updated in the memory.
- After losing all our lives, the game is over.
- To exit, we can use the mouse to click on the screen of the game, and the game will end.