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Submission Date: 29th Nov 2021

PFUN PROJECT

# REPORT

Our Programming Fundamentals project is a 2D racing game named Delta SpeedRun. This game was made using *pygame* library in python. The first page gives the user the option to exit the game right there or start the game. Before the game begins, the player selects the difficulty level: Easy, Hard, or Torture. The game includes a scrolling background whose speed increases as time passes. The scrolling background is created by using 2 copies of the same background image and moving down the y-axis, when one image reaches the end of the screen, we *‘blit’* the image back to its starting position. The two images follow each other.Obstacles are generated at random. The obstacles include trees, ditches, cones, and people, etc. The player controls the car by the arrow keys. A screeching sound is played when the car moves left or right. The user has the option to change background or car during the game. The score increases as the user collects coins, which are generated at random. Every time the car hits an obstacle, a crash sound is heard and the ‘life’ of the car decreases. The player can shoot obstacles by pressing the spacebar to shoot bullets. The game ends when life is zero. A game-over screen along with the score is displayed. The user has the option to shut the game or replay.

The game has 3 difficulty levels:

>Easy: The background speed is comparatively slower and a lower frequency of obstacles generated.

>Hard: The background speed is comparatively faster and a higher frequency of obstacles is generated. This level also includes random passer-by. Hitting them will immediately end the game since murder isn’t tolerable.

>Torture: This level is still in the development stage. The background speed and the speed of the vehicle can change at random. The goal is to catch the player off guard. The background not only scrolls on the y-axis but also constantly zigzags on the x-axis. This is to challenge the user.

Useful links:

Python: <https://www.python.org/downloads/release/python-3100/>

VS Code: <https://code.visualstudio.com/download>

Pygame library: <https://downloads.digitaltrends.com/pygame/windows>

Instructions To Play:

>Starting the game: Open the main python file to run the game.

>Movements of car: Arrow up to move up, arrow down to move down, left arrow to move left and right arrow to move right

>Shooting bullets: Press spacebar to shoot bullets at obstacles!

>Quit game: Press Esc to quit the game

>Changing Background: Press 1, 2 or 3 to change the backgrounds during the game

>Changing Vehicle: Press ‘q’, ‘w’ or ‘e’ to change the car during the game