Project Synopsis

Shapatar Rider

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1 Introduction:

Shapatar Rider is a game where the player controls the movement of a bike. The player has to avoid hitting any obstacles and complete the course/track them as to win the game. If a player hits any obstacle, a life is lost. If the player loses all lives, the game is over. A score will be tracked throughout the game.

2 Assets:

2.1 Bike Customization

The player will have multiple bike options to choose in game.

2.2 Obstacles

There will be assets for different obstacles in the game:

1- Barricade
2- Rock/Cliff
3- Policeman

2.3 Boosters

There will be multiple boosters available to pick up during the game:

1- PointsMultiplier
2- ExtraLife
3- JumpBooster
4- TimeFreezer

2.4 Background Customization

The player would able to select a day or night background

3 Gameplay

3.1 Start Screen

The start screen will be display after running the game and it will include the following options:

1- Start Game
2- Select Background
3- Select Bike
4- Instructions
5- End Game

3.2 Controls

The controls of the game will be basic. You can accelerate the bike using right arrow key, brake using left arrow key and jump using up arrow key

(These controls might change according to the requirements of the game)

3.3 Stats

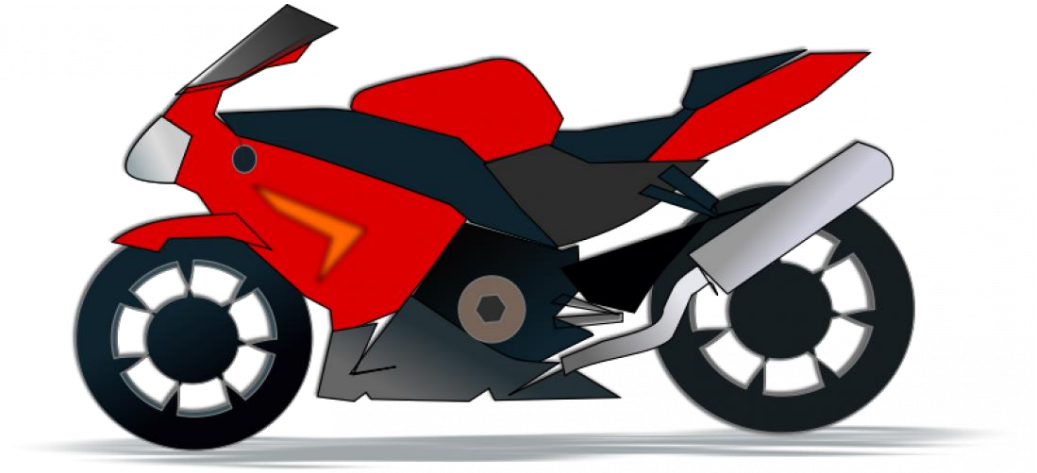
As the game starts, the following stats will be displayed on top of the screen:

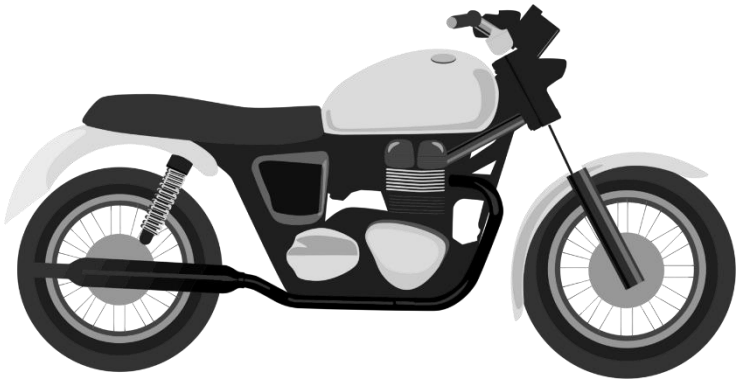
1- Lives
2- Points
3- Time

The game will begin with 3 lives and each time the player hits an obstacle, they will lose a life. And as they move through the course, dodging obstacles and picking up boosters, they will gain points accordingly.

4 Sprites

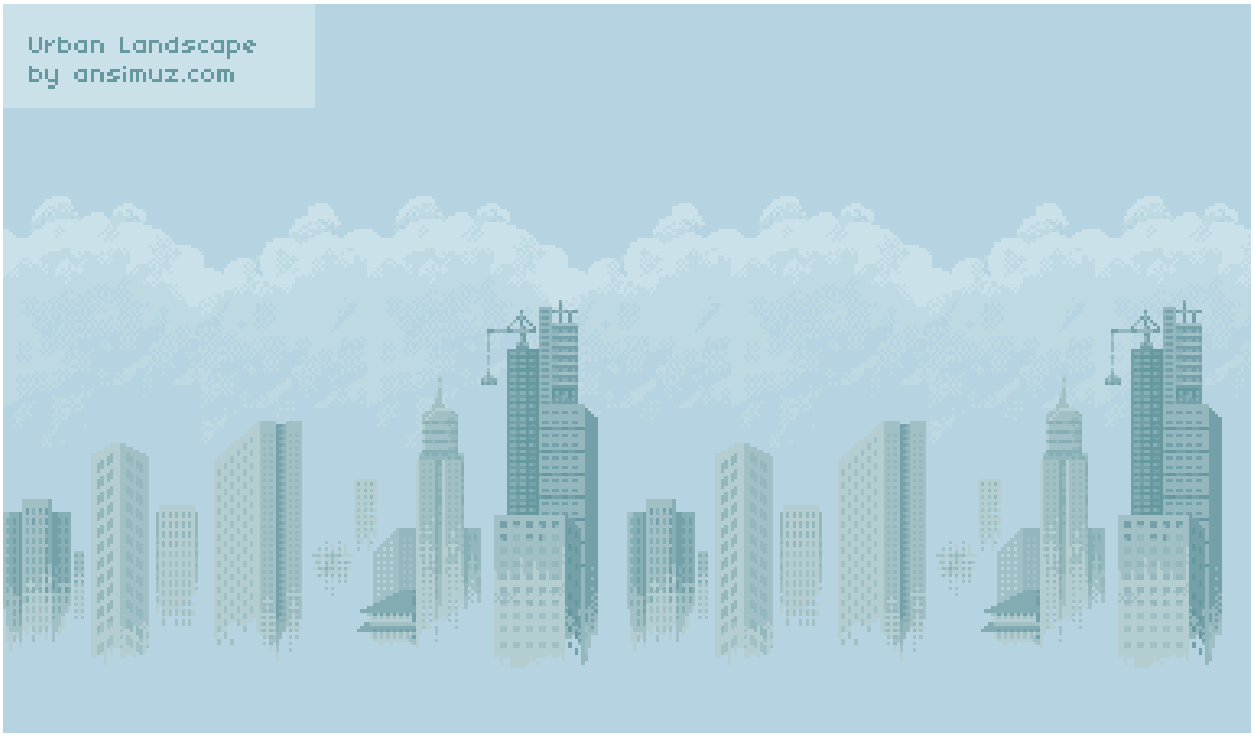
Here are some of the examples of the sprites and assets we intend to use in our project.



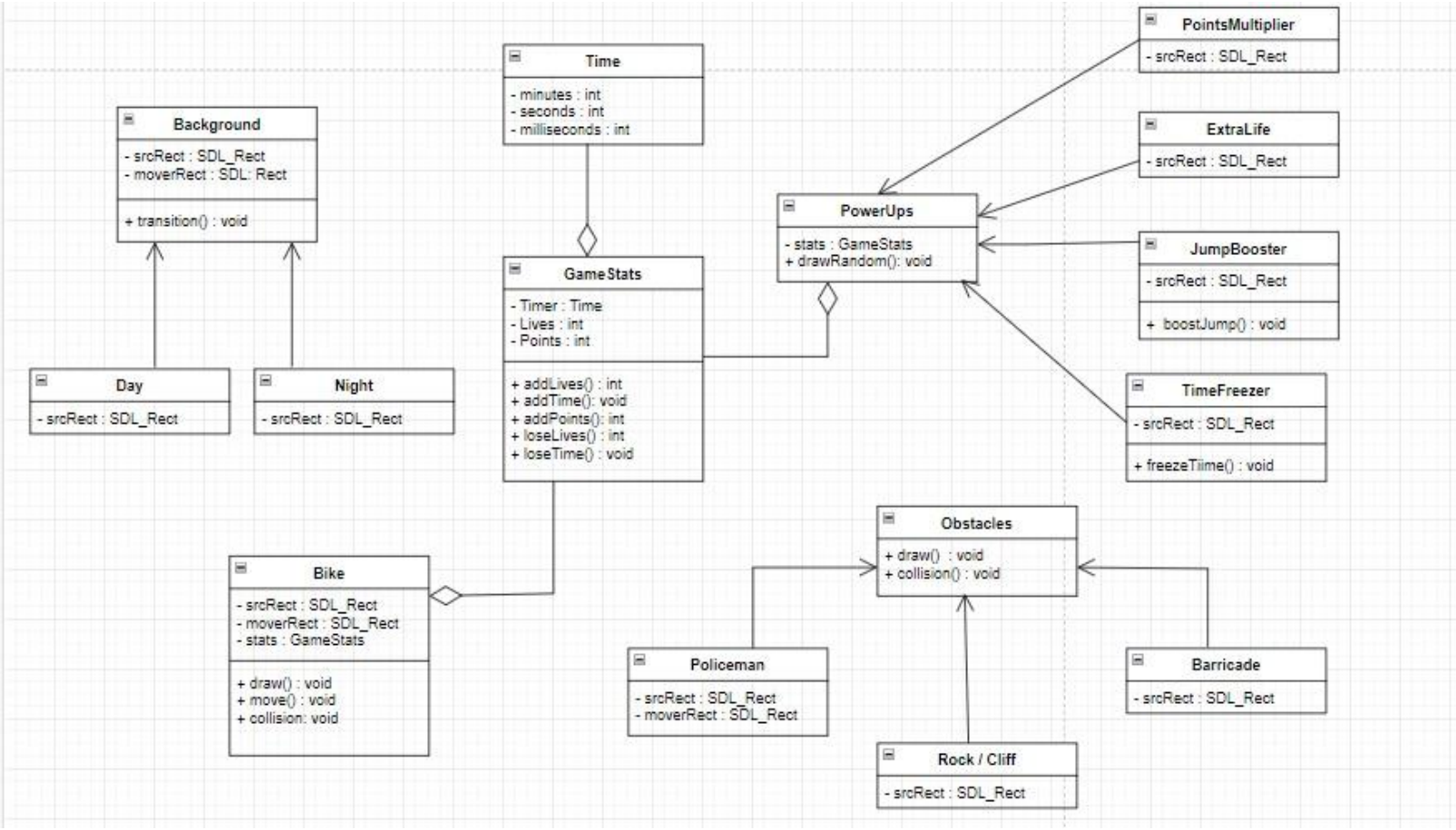


5 Background Screens


REGULAR MOUNTAIN DUSK


Urban Landscape
by ansimuz.com

6 UML



This UML visualizes the classes and objects that are used throughout the game and how they will come together to build the game.

The base game starts with the SDL 2d Library that draws the background. A transition function keeps the background dynamic and changing. Children classes of *background* help switch between day and night.

The *bike* class is the main class. Functions of this class help in moving the bike and interact with the environment. There is a hierarchy of classes leading from the bike classes: *stats* and then time. These are self-explanatory classes to track the score and time within the game.

Finally, the last two parent classes are *obstacles* and *powerups*. To make the game interesting different powerup classes are there to customize the gaming experience. Functions within these classes may freeze time, boost the bike's speed and other.

Similarly, *obstacles* will be generated in the bike library and interact with the bike's movement to add a challenging factor to this game. These obstacles are drawn with the SDL library as usual.