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CA programming Assignment Report for Game development Asteroids-like Game

1. Modelling the environment

Four walls surrounding the game like a boundary - done

Atleast 3 asteroids - done

One spaceship - done

Playing field is large - done

2. Keyboard interaction

2.1 Implementing Fly

Initial direction is always facing upwards - done

Initial speed is 0 - done

The spaceship works using the four arrow keys in the keyboard as well as A,S,W,D can be used.

Button "forwards" - increases the speed

Button "backwards" - decreases the speed

Button "rightwards" - rotates clockwise

Button "leftwards" - rotates anti-clockwise

2.2 Implementing shoot

The space bar is used for shooting the asteroid - done

Releases bullet from the position of the spaceship and along the current direction of spaceship - done

Speed of the bullet is faster than the spaceship - The speed of the bullet(500.0f) is 500x speed of the spaceship(1.0f) - done

The speed of the spaceship when going reverse is half times that when the spaceship is going upwards.

3. Physics

3.1 Implementing float

The asteroid is always floating because the gravity - done

The asteroids move linearly according to a given direction and speed - done

3.2 Implementing bounce

Asteroid will reflect with the wall - done

Asteroids will collide with each other - done

Asteroid collides with the spaceship, player will lose - done

3.3 Implementing break

Asteroid will break into smaller pieces once it is collided - done

This works only for asteroids of bigger sizes, in that way the game will end eventually at a point.

Direction and speed of the smaller asteroids will be different than that of the removed asteroid(speed is randomised) - done

4. Gameplay

The points are defined by the size of the asteroid - done

5. Creativity

Extra features - Explosion effect is added when the bullet hits the asteroid

When the player loses one life it is unfair to make the asteroid hit with the asteroid at the same place and not give enough time to move from it, so there is a time set to 3 seconds for the player to move away from the asteroid when the player gets extra life.

If the spaceship hits the wall, a boundary is made so that the asteroid will not get out of the rectangle.

When the bullet hits the wall, it just goes out since it does not affect us in any way but they die at the point of collision. (whatever it hits, it will die at the spot)

When the game is over, the player will be displayed his score and "Game Over" will be displayed on the screen.

A player has 3 lives, which means he can die 3 times and the total score will be the sum of the scores achieved on each game.

As mentioned earlier, players can use A,S,W,D instead of arrow buttons.