**Part 1**

Game Description

You start by opening the game to which you will find a player in the centre screen. When you press the up, down, left or right keys the player moves around the screen in response to the arrow pressed. When you click the space bar a bullet shoots from the player’s weapon. There is writing in the top left hand corner displaying score and writing displaying round 1 in the top right hand corner. There is writing displaying wave one is then displayed in the centre of the screen and five zombies start appearing from the top, bottom, left and right of the screen. When you press shoot aiming at the zombies they are killed the zombie disintegrates. Every time you shoot a zombie your score goes up. You continue shooting zombies until that round is over and the next begins. When you get hit by the zombie you lose a life and your 10 lives go down to 9. When the next round starts more zombies appear and they are harder to kill than round 1. This continues until you die. When the player is defeated there new score appears in the middle of the screen and that score is saved. At the end of the game you will have an option to replay.

Game Genre

The game genre is a 2D top down shooter game using the inverted T Layout and space bar. It is similar to Dead Ops arcade a mini game in Call of Duty: Black Ops except using a computer keyboard instead of a controller.

Goals

* Your main goal is to defeat and kill each zombie in the infinite zombie outbreak as the number of zombies are endless.
* You have to kill the required number of zombies each round until that round is over and the next round begins.
* You have to survive these waves as you only have a certain number of lives and your lives are not recovered after every round only after every three to five rounds will you regain one life.
* You will fail if you take too much damage and your lives are depleted leaving you dead and the zombies have won.
* After you lose the score you have gotten will be recorded and you will have the option to replay the game the game and set a new high score.

Player Controls

UP ARROW- Moves the plyer to the left

DOWN ARROW- Moves the player down

LEFT ARROW- Moves the player to the left

RIGHT ARROW- Moves the player to the right

SPACE BAR- Makes the player shoot the weapon

How to kill the Zombies

The player can kill enemies by shooting them with his weapon. It takes one shot to kill zombies in wave one. But when the player progresses the zombies become stronger. It the can take up to 5 shots to kill. The super zombies are harder to kill and appear every five rounds.

Enemy Movement

The zombies move towards the player up, down left and right. The zombie location is linked to the player location so every time the player moves the zombies follow in their path. The zombies always move slower than the player as the player can manoeuvre around to kill each zombie. The player can take ten hits from the zombie before he is dead.

Progression

* The main objective of the game is to shoot and kill the oncoming zombies as they swarm towards you whilst manoeuvring around them.
* You have to defeat each zombie until the round is over and round two displays on the screen.
* You then progress by defeating wave after wave of oncoming zombies progressing through the rounds.
* The main achievement is the setting of a new high score and can go back and try to beat this score every time you play the game and defeat the zombies.
* You can also upgrade your weapons as you progress through the game as this will become essential as the game becomes more and more challenging.
* The main reason to replay the game is to set a new high score and try and beat this high score every time you play the game.

**Part 2**

Game class.

GraphicsDeviceManager graphics;

SpriteBatch spriteBatch;

SpriteFont font;

Player newPlayer;

Zombie zombieOne;// creates five zombie object

Zombie zombieTwo;

Zombie zombieThree;

Zombie zombieFour;

Zombie zombieFive;

int viewportWidth, int viewportHeight;//width and height of the screen

Texture2D background;

Int scoreCount = 0;//integer where score will be added

Int liveCount = 10;//lives are counted

Bool personHit = false;//for the hit collision of the player and the enemy

Random random = new Random();

Methods

Game1()

Initialize()

LoadContent()

UnloadContent()

Update()

Draw()

Player class.

//sets the speed for the player to move

const int Move\_Up = -4, -5;

const int Move\_Down = 4, 5;

const int Move\_Left = -4, -5;

const int Move\_Right = 4, 5;

//rectangle in which the player will be positioned

public Rectangle displayRec = new Rectangle();

public Texture2D mSpriteTexture;

public assetName;

Draw();

LoadContent();

MoveLeft();

MoveRight();

MoveUp();

MoveDown();

playerShoot();

Zombie class

//position of the zombie is set to a vector

Vector2 mPosition = new Vector();

Texture2D zombieTexture; //image of the zombie

int direction;

//assigns numbers to the zombies to randomly geneate a start position

const int north = 1;

const int east = 2;

const int south = 3;

const int west = 4;

Sprite();

Draw();

Update();

LoadContent();

Update();

Bullet class.

Texture 2D bulletTexture;

//bullet position is set as a vector

Vector2 bulletPosition = new Vector();

Bool bulletAlive = false;//bool for is the bullet is drawn

const int Move\_Up = -10;

const int Move\_Down = 10;

const int Move\_Left = -10;

const int Move\_Right = 10;

Bullet();

MoveUp();

MoveDown();

MoveLeft();

MoveRight();

Shoot();

**Part 3**

The parts that I found most difficult were the follower and to get the bullet move in the direction that the texture image is facing. I researched the follower and found that using sin, cos and tan would help to get the zombies to move in the direction of the player as every time the player and zombie moves a triangle would be used to get the position of the player for the zombie to follow. This would be repeated every time the player moves making the zombie follow in their path. Also I found it difficult to shoot the bullet in the direction that the zombie is facing. Through the research I found that if I set the image to a certain direction image every time the player moves a certain direction using if statements. The bullet would then be shot from this position + or – from the x or y position also using the speed it is travelling at.

Zombie Class

Move()//method

//calculates the distance of the enemy from the player

distanceX = enemyPosX – playerPosX;

distanceY = enemyPosY – playerPosY;

//calculates the movement

move = atan(distanceX,distanceY);

//enemy position is updated as per movement

enemyPosX -= (speed \* cos(move));

enemyPosY -= (speed \* sin(move));

called into game class

enemy.Move();

Bullet class()

//moves bullet in the direction the enemy is facing as per the texture image

BulletMoveRight()

If (bulletTexture = bulletTexture.MoveRight())

{

bulletPosX += speed; //Fires right

}

BulletMoveLeft()

If (bulletTexture = bulletTexture.MoveLeft())

{

bulletPosX -= speed; //Fires left

}

BulletMoveUp()

If (bulletTexture = bulletTexture.MoveUp())

{

bulletPosY -= speed; //Fires up

}

BulletMoveDown()

If (bulletTexture = bulletTexture.MoveDown())

{

bulletPosY += speed; //Fires down

}

Game class

Bullet. BulletMoveRight();

Bullet. BulletMoveLeft();

Bullet. BulletMoveUp ();

Bullet. BulletMoveDown ();