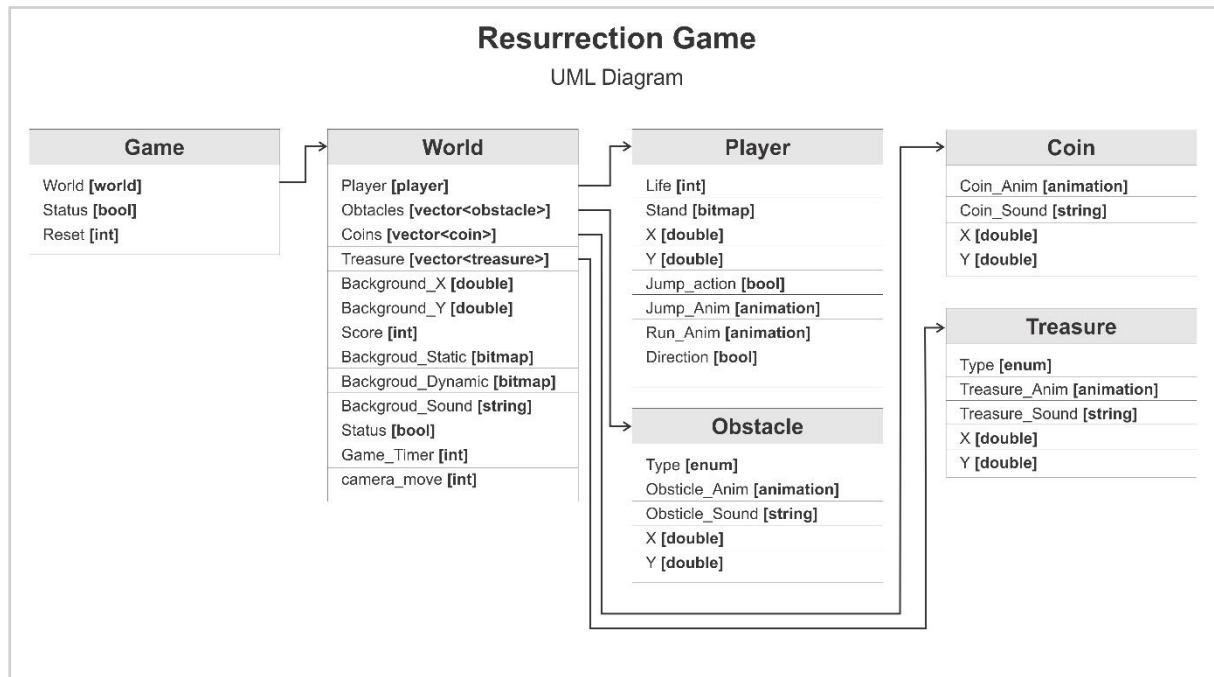


Data Types Definition

Introduction

This document will provide detailed definitions of data types used in this the game.

In developing the game, we have created several user-defined data types using the C++ structure which holds different properties in procedural version of the game.



User Defined Data Types:

Struct:

Structures (also called structs) are a way to group several related variables into one place. Structures are used to create different objects in procedural version of the game.

- Game
- World
- Player
- Obstacle
- Coin
- Treasure

Enum:

An enumeration is a user-defined data type that consists of integral constants. Enumeration is used to predefine the types of Obstacles and the Treasures in the game.

- Obstacle_Type
- Treasure_Type

Game:

Game is parent structure, which hold other structures and global game data.

Variable	Data Type	Definition
World	World	This is a structure which hold the properties of the level
Status	Bool	This Boolean variable holds binary value which defines the status of the game

World:

World is the level which player is playing, which also a structure contains all the variables.

Variable	Data Type	Definition
Player	Player	This is a structure which hold the properties of the player
Obstacles	vector<obstacle>	This is a vector obstacle structure as single world can have more than one obstacle.
Coins	vector<coin>	This is a vector coin structure as single world can have more than one coin.
Treasure	vector<treasure>	This is a vector treasure structure as single world can have more than one treasure.
Background_X	Double	This variable holds the value of X position of the background.
Background_Y [double]	Double	This variable holds the value of Y position of the background.
Score	Integer	This variable holds the value of the score of the current level.
Backgroud_Static	Bitmap	This variable holds the image of the static background which does not move along with the player.
Backgroud_Dynamic	Bitmap	This variable holds the image of the dynamic background which moves along with the player.
Backgroud_Sound	String	This variable holds the name of the background music.
Status	Bool	This Boolean variable holds binary value which defines the status of the current level
Game_Timer	Integer	This variable holds the elapsed time of the current level.
Camera_Move	Integer	This variable holds the value of camera position which is used to position the background and other dynamic objects on the scene.

Player:

Player is the structure of the main character sprite.

Variable	Data Type	Definition
Life	Integer	This variable holds the value of player's life which will be deducted if character hits the obstacle.
Stand	Bitmap	This variable holds the default image of the player when player is not moving.
X	Double	This variable holds X position of the player.
Y	Double	This variable holds Y position of the player.
Jump_Action	Bool	This Boolean variable holds binary value which defines if player is performing a jump action.
Jump_Anim	Animation	This variable holds the animation sequence of the player's jump action.
Run_Anim	Animation	This variable holds the animation sequence of the player's run action.
Direction	Bool	This Boolean variable defines which direction the player is moving.

Obstacle:

Obstacle is the structure of the enemy sprite.

Variable	Data Type	Definition
Obstacle_Type	Enum	This enumeration defines the type of the obstacle.
Obstacle_Anim	Animation	This variable holds the animation sequence of the obstacle.
Obstacle_Sound	String	This variable holds the name of the sound which will be played when player hits the obstacle.
X	Double	This variable holds X position of the obstacle.
Y	Double	This variable holds Y position of the obstacle.

Coin:

Coin is the structure of the gold coin sprite.

Variable	Data Type	Definition
Coin_Anim	Animation	This variable holds the animation sequence of the coin.
Coin_Sound	String	This variable holds the name of the sound which will be played when player hits the coin.
X	Double	This variable holds X position of the coin.
Y	Double	This variable holds Y position of the coin.

Treasure:

Treasure is the structure of the treasure sprite.

Variable	Data Type	Definition
Treasure_Type	Enum	This enumeration defines the type of the treasure.
Treasure_Anim	Animation	This variable holds the animation sequence of the treasure.
Treasure_Sound	String	This variable holds the name of the sound which will be played when player hits the treasure.
X	Double	This variable holds X position of the treasure.
Y	Double	This variable holds Y position of the treasure.