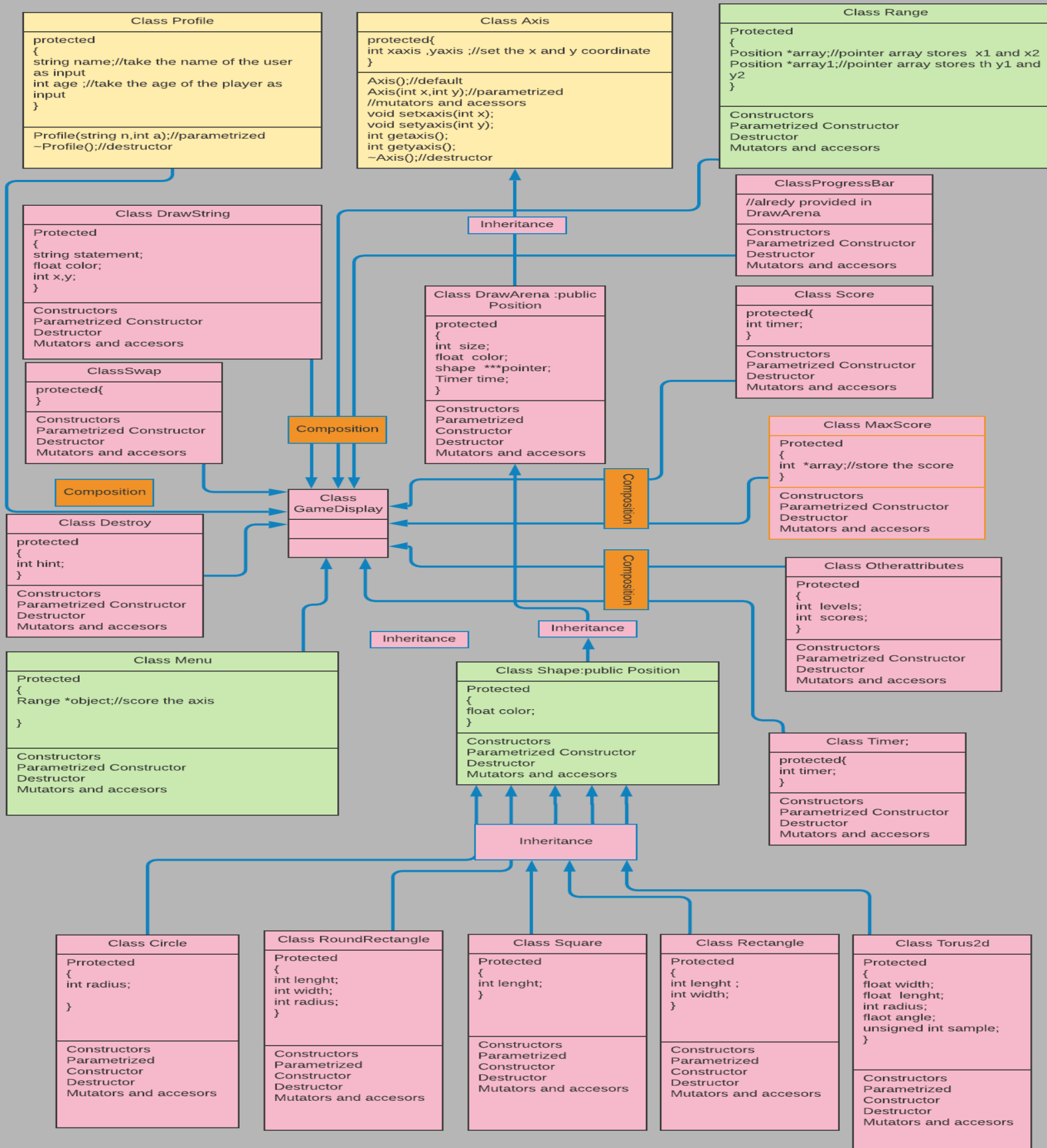


# OPP PROJECT



## Explanation of the Class Diagram

### No Of Classes

- **Axis.**
- **Arena.**
- **Shape.**
- **Circle.**
- **Square.**
- **Rectangle.**
- **Round Rectangle.**
- **Torus2d.**
- **Destroy.**
- **Swap**
- **Timer**
- **Scored**
- **Progressbar**
- **Main**
- **Range**
- **Scoring**

### Explanation of Classes

#### 1. **Axis:**

This class is made to get the xaxis and yaxis of the board.

- **Member variable:**

xaxis,yaxis,x1axis,y1axis.

- **Members functions:**

```
Axis()
Axis(int x,int x1,int y,int y1){};
Axis(int x,int y){};
void setxaxis(int x){};
int getxaxis(){};
void setx1axis(int x1){};
int getx1axis(){};
void setyaxis(int y){};
int getyaxis();
void sety1axis(int y1){}
int gety1axis(){ }
~Axis(){}
```

#### 2. **Arena:**

There is the inheritance of the Arena class in the Axis class.This class is used to make the Arena by using the axis from the Axis Class

- **Member variable:**

```
float *color;
int size;
```

- **Members functions:**

```
Arena():Axis();  
void DisplayArena();  
~Arena{};
```

### 3. Shape:

This is the Abstract class and it has the pure virtual function and is used to draw the different shapes in the Arena.

- **Member variable:**  
float color;
- **Members functions:**  
Shape():Axis();  
Shape(float c):Axis(xaxis, yaxis);  
float getcolor();  
virtual void Drw(int x,int y)const=0;  
virtual ~Shape();

### 4. Circle

Shape class is inherited in the Circle class and the draw function is called to draw the shape

**Member variable:**

int radius;

**Members functions:**

Circle():Shape();

Circle(int r);

void Drw(int x,int y)const;

### 5. Square

Shape class is inherited in the Square class and the draw function is called to draw the shape

**Member variable:**

int lenght;

**Members functions:**

Square():Shape();

Square(int l);

void Drw(int x,int y)const;

### 6. Rectangle

Shape class is inherited in the Rectangle class and the draw function is called to draw the shape

**Member variable:**

int lenght;

int width;

int radius;

**Members functions:**

Rectangle():Shape();

Rectangle(int l);

void Drw(int x,int y)const;

### 7. Torus2D

Shape class is inherited in the Torus2D class and the draw function is called to draw the shape

**Member variable:**

float angle;

float lenght;

float radius;

float width;

unsigned int sample;

**Members functions:**

```
Rectangle():Shape();  
Rectangle(int l);  
void Drw(int x,int y)const;
```

**8. RoundedRectangle**

Shape class is inherited in the RoundedRectangle class and the draw function is called to draw the shape

**Member variable:**

```
length=l;  
width=w;  
radius=r;
```

**Members functions:**

```
Rectangle():Shape();  
Rectangle(int l);  
void Drw(int x,int y)const;
```

**9. Destroy**

This class is used to destroy the gems as they are matched.

**Member variable:**

There are no member variables

**Members functions:**

```
void Destroy(int (&array)[64],int &scoreadd, int &moves;
```

**10. Swap**

This class is used to matched the gems as they are matched.

**Member variable:**

There are no member variables

**Members functions:**

```
void swap(int (&array)[64],int &ind1, int &ind2,int &x1,int &y1,int &x2,int &y2);
```

**11. Timer**

Its main function is to calculate the time when the game is start and stop at the pause button.

**Member variable:**

There are no member variables

**Members functions:**

```
void printtime(int count);
```

**12. Scored**

This class is used to calculate the score of the player as the gems are destroyed.

**Member variable:**

There are no member variables.

**Members functions:**

```
void printscore(int &scorestore)
```

**13. ProgressBar**

This class is used to shoe the progress of the player as the score is increased

**Member variable:**

```
int num;
```

**Members functions:**

```
ProgressBar();
```

```
void printProgressBar(int &score_storedalready,int &clock,int &level,int &progress,int  
&moves,int &life);
```

#### 14. Main

This class is used to draw the menus of the game. It is also used to display the controls, score ,resume the game

**Member variable:**

There are no member variable

**Members functions:**

```
void DrwMainMenu(int &loading,string s);
```

```
void DrwGameMenu();
```

```
void DrawGameinstruction();
```

```
void DrawScore();
```

#### 15. Range

This class is used to get the range of the mouse

**Member variable:**

**Members functions:**

```
void SetRange(int &x,int &y,int &wine1,int &wine2,int &wine3,int &wine4,int (&array1)  
[64],int (&array3)[64]
```

#### 16. Scoring

This class is used to store the max score of the persons and is updated every time

**Member variable:**

There are no member variable

There are no member variables.

**Members functions:**

```
void calculate(int &s);
```

```
void read();
```