Terminal App: Battleships

By John Thompson

Battleships is a?

A game that is inspired by the original paper game from the 1930's.

In battleships, you take turns guessing where the computer player has placed their ships on a grid and vice-versa until someone destroys all the ships on the Grid.

How the game is played

When the game first starts you will see your grid this is when you place your ships.
Each round you enter the grid coordinates marked on the side of the grid, first the row letter and then the column number you will the computer's grid while you are attacking and your grid while you are being attacked. A successful hit will be marked with an X and a miss is marked with a 0

The game is over once all the enemies ships have been destroyed. The score is calculated from your total successful hits

How is it Structured

Battleships.rb

This is the entry point for the game. It handles things like the menus and command-line arguments.

Game_elements.rb class

Game elements have attributes so that I can check their states from the game engine module, they have things would need shown on the grid or test their states.

Game_engine.rb module

This module controls the creation of both player, computer grids, ships objects and gameplay logic, it would basically run the game.

Grid.rb class

The grid is a multidimensional array and populates itself with game element objects which are place holders for grid points and labels for rows and columns of the grid, it also redraw its contents to the screen so you can see each players grid

Code Snippets

```ruby
def input_ok?(input)


    if(input.match?(/^[1-9][a-zA-Z]$/))
        return true
    else
        return false
    end

end
```

Code Snippets

```
82  def place_ships(grid, position, element)
83      not_empty_types = [ "alpha-label", "num-label", "space"]
84
85      not_empty_types = not_empty_types.push(element.type)
86
87      not_empty_types.each do |x|
88          if(collision?(grid, position, x))
89              puts "Unable to place ship please try again!".colorize(:red)
90              return false
91          end
92      end
93
94      grid.add(position, element)
95
96  end
97
98  def quit_game
99      exit
100 end
101
```

Code Snippets

```ruby
def create
    alphabet = *('a'..'z')
    screen_array = []
    count = 0

    for x in 0..@row
        array = []
        count += 1

        for i in 0..@column
            if(i == 0)
                #start of row which is first column
                if(x == 0 || x == @row)
                    array.push(GameElement.new("   ", "empty-space", "space"))
                else
                    array.push(GameElement.new(" #{count-1} ", "label", "num-label"))
                end

            elsif(i == @column)
                #end of row which is last column
                if(x == 0 || x == @row)
                    array.push(GameElement.new("   ", "empty-space", "space"))
                else
                    array.push(GameElement.new(" #{count-1} ", "label", "num-label"))
                end

            else
                #rest of the row and columns
                if(x == 0 || x == @column)
                    array.push(GameElement.new("#{alphabet[i-1]}", "label", "alpha-label"))
                else
                    array.push(GameElement.new(".", "grid-point", "grid-point"))
                end
            end
        end

        end
        screen_array.push(array)

    end

    return screen_array

end
```

Code Snippets

```ruby
def convert_coordinates(position)

    abc = *('a'..'z')

    position = position.chars
    position_array = []

    position.each do |x|
        if(abc.include?(x))
            position_array.push(abc.index(x) + 1)
        else
            position_array.push(x.to_i)
        end
    end

    return position_array

end


def collision?(grid, position, type_of)

    if(grid.contains?(position, type_of))
        return true
    else
        return false
    end

end
```

Code Snippets - favourite Code

```ruby
def create
    alphabet = *('a'..'z')
    screen_array = []
    count = 0

    for x in 0..@row
        array = []
        count += 1

        for i in 0..@column
            if(i ==  0)
                #start of row which is first column
                if(x == 0 || x == @row)
                    array.push(GameElement.new("   ", "empty-space", "space"))
                else
                    array.push(GameElement.new(" #{count-1} ", "label", "num-label"))
                end

            elsif(i == @column)
                #end of row which is last column
                if(x == 0 || x == @row)
                    array.push(GameElement.new("   ", "empty-space", "space"))
                else
                    array.push(GameElement.new(" #{count-1} ", "label", "num-label"))
                end

            else
                #rest of the row and columns
                if(x == 0 || x == @column)
                    array.push(GameElement.new("#{alphabet[i-1]}", "label", "alpha-label"))
                else
                    array.push(GameElement.new(".", "grid-point", "grid-point"))
                end
            end
        end

    end
    screen_array.push(array)

    end

    return screen_array

end
```
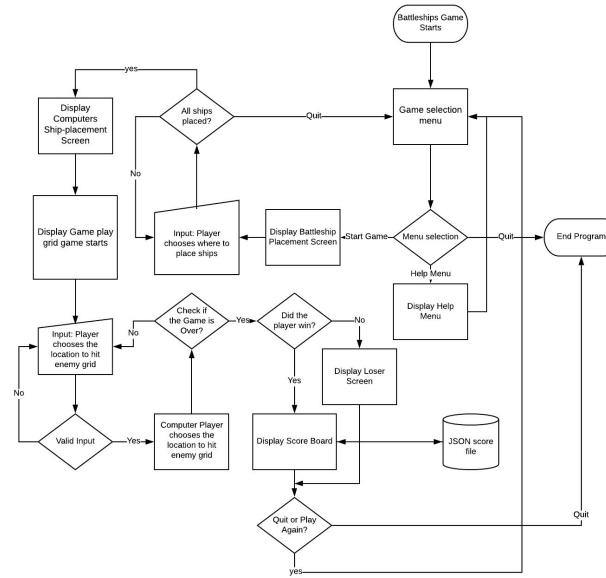
Code Flow Chart

Time to Play!