PROFESSIONAL

TICK TOCK

WhiteHat Jr
Live Online Coding for Kids

INSTRUCTIONS:

Goal of the Project:

In Class 43, you have learnt about the Game Design Elements which make games fun and engaging for players.

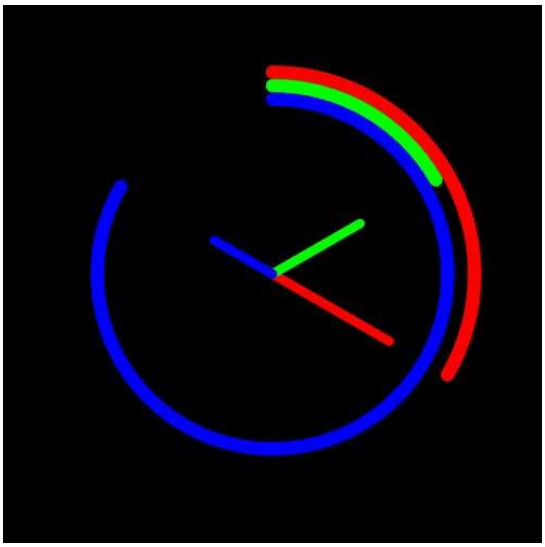
In this project, you will be implementing some new concepts to create a clock of your own kind. This project will help you explore a lot of new functionalities in p5.js to make your games even more addictive.

Story:

You and your crew are stuck in a room. You just have one attempt to unlock and escape. If you fail you are locked forever. The key to the door will unlock only when the CLOCK shows 12:00:00.

Unfortunately, there is no clock in the room which can show you the time. However, you have a computer!

Create a program that draws the clock for you and shows the time to find your way out. Here is a video of this in action.



***This is just for your reference. We expect you to apply your own creativity in the project.**

PROFESSIONAL

TICK TOCK

WhiteHat Jr
Live Online Coding for Kids

Getting Started:

1. Download the template from github.
2. **Unzip** this folder.
3. Rename the unzipped folder to **Project 43.**
4. **Import** this folder **into VS Code.**
5. Start editing your code in **sketch.js.**

Specific Tasks to complete the Project:

There is a blank boiler plate which you will see at the beginning.

1. Create **variables** to store **hours, minutes** and **seconds** using the respective functions.
    - Go through the following links to understand the functions better.
        - Hour
        - Minute
        - Seconds

```
//Calculating time using predefined func from p5.js
hr = hour();
mn = minute();
sc = second();
```

2. Change the angle mode to **degrees** so that you can measure angle in degrees.
    - It can be done using: **angleMode(DEGREES);**

3. Compute the angle for the seconds, minutes and hour hand in draw() function. Use the **map() function** for this.
    - The map() function converts one range (0-60 seconds in a minute) to another range (0-360 degrees in a circle).

```
scAngle = map(sc, 0, 60, 0, 360);
```

    - Here is the reference link to map function.

4. Draw the clock hands using the **line function.**
    - Give required color and thickness using **stroke()** and **strokeWeight().**

```
stroke(255,0,0);
strokeWeight(7);
line(0,0,100,0);
```

5. Use the **translate function** so that the hands could easily be drawn at 0,0.
6. Try and make it as creative as you can think of.

Additional Challenging Activity:

1. Using the **arc function**, draw arcs representing hours, minutes and seconds which can rotate with respective hands.
    - Here is the reference link for arcs
2. Use the arc in conjunction with the **strokeWeight** and **Stroke** functions to generate the desired outcome.

Submitting the Project:

1. **Upload** your completed project to your own github account.
2. Enable **Github** pages for the repository.
3. Copy and paste the link to the github pages in the Student Dashboard against the correct class number.

Hints:

1. Remember to use **%12** while iterating hour using the map function since it is a 12 hour format clock.

2. Remember to rotate the hands using **rotate()**.
    - The angle passed would be the value calculated using map function.

```
//drawing seconds hand
push();
rotate(scAngle); //rotate the hand based on angle calculated
stroke(255,0,0);
strokeWeight(7);
line(0,0,100,0);
pop()
```

3. Use **push()** and **pop()** functions to implement settings for the required hands only.

REMEMBER.. Programming a computer teaches you how to THINK.
After submitting your project your teacher will send you feedback on your work.

xxx xxx xxx xxx xxx