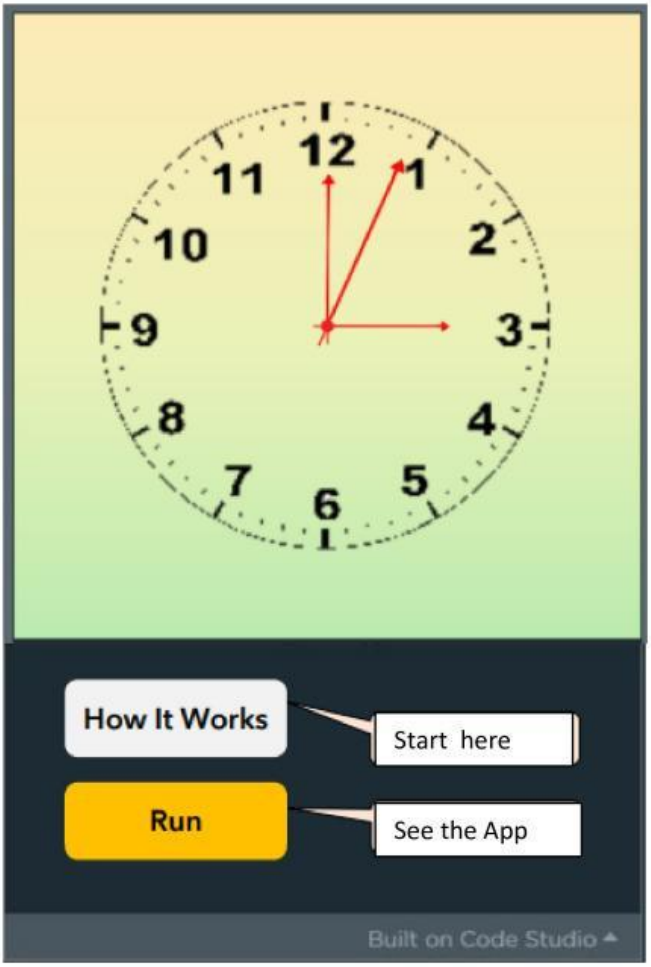
Project 68

DP EDUCATION

Coding School



❖ Let's create a clock using Game Lab.

❖ First let's design the background and related sprites.

❖ Create a new sprite to create the background. Its position is (200,200).

❖ Select the background.png image as the sprite's animation

```
var bg = createSprite(200, 200);
bg.setAnimation("background");
bg.scale = 1;
```

Give its x and y positions 200 and 200 respectively. Set the sprite scale to 1.

❖ Then let's design the face of the watch. Create a sprite as a clock for that. Select the "clock.png" image for that.

```
var clock = createSprite(200, 200);
clock.setAnimation("clock");
clock.scale = 1.5;
```

Give its x and y positions 200 and 200 respectively. Give the sprite scale as 1.5.

❖ The same image is used for the hour hand, minute hand and second hand (hand.png). Let's change only the scale of the sprite and the name of the variable.

❖ For the hour hand,

```
var hourHand = createSprite(200, 200);
hourHand.setAnimation("hand");
hourHand.scale = 0.2;
```

Give its x and y positions 200 and 200 respectively. Give the scale of the sprite as 0.2.

❖ For the minute hand

```
var minHand = createSprite(200, 200);
minHand.setAnimation("hand");
minHand.scale = 0.25;
```

Give its x and y positions 200 and 200 respectively. Give the scale of the sprite as 0.25.

❖ For the second hand,

```
var scondHand = createSprite(200, 200);
scondHand.setAnimation("hand");
scondHand.scale = 0.3;
```

Give its x and y positions 200 and 200 respectively. Give the scale of the sprite as 0.3.

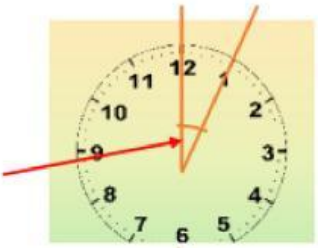
❖ Then create 3 variables as watchStatus, startRotationMin and startRotationHour.

```
var watchStatus = 0;
var startRotationMin = 0;
var startRotationHour = 0;
```

❖ It is done by 2 variables startRotationMin and startRotationHour to give the time of the clock at the beginning.

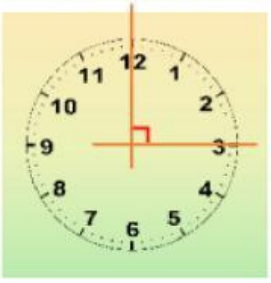
Since the face of the clock is circular and divided into 12 digits, the angle between the 2 digits is degrees.

300, 30^0

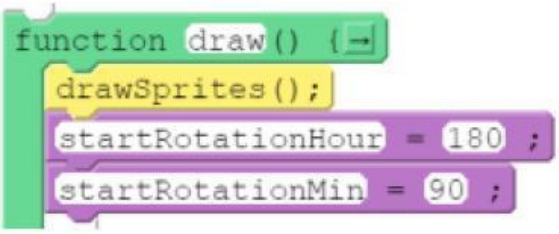


❖ If the hour hand is to be placed at 3 at the beginning, there must be 90 degrees of rotation from the 12 digit to the 3 digit..

❖ මිනිත්තු කටුව ද එලෙස අවශය පරිදි ආරම්භයේදී අංශක 90^0 rotation විය යුතුය.



❖ Assign the number of degrees of rotation at the start of the hour hand to the startRotationHour variable created above, and the number of degrees of rotation at the start of the minute hand to the startRotationMin variable.



❖ For the rotation of the seconds hand,

Here, the second hand must travel 360 degrees in 60 seconds. That is, the second hand should move 6 degrees in 1 second.

❖ For the rotation of the minute hand,

Here the minute hand must travel 360 degrees in 60 minutes.

Minute 60 ⟶ 360^0

Second 3600 ⟶ 360^0

Second 01 ⟶ $360^0/3600$ ⟶ 0.1^0

That is, the minute hand should move 0.10 degrees in 1 second.

❖ For clockwise rotation,

Here the hour hand should travel 360 degrees in 12 hours.

Hour 12 ⟶ 360^0

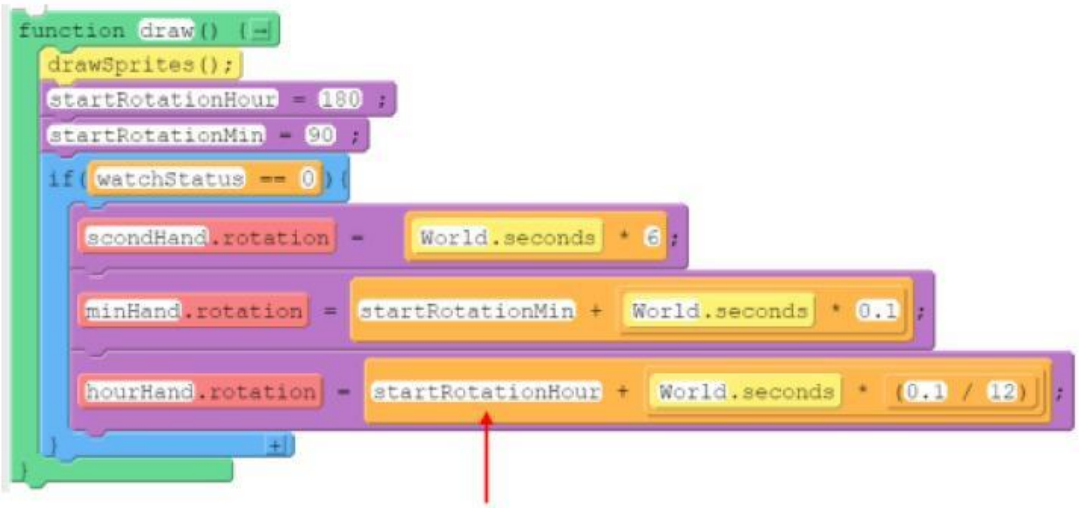
Minute 12 * 60 ⟶ 360^0

Second12 * 3600 ⟶ 360^0

Second 1 ⟶ ~~360^0~~ / 12 *3600 ⟶ ~~0.1^0~~ / 12

That is, the hour hand should move 0.1/12 degrees in 1 second.

❖ Following is how Clock travels with a start time.



At the beginning, the hour hand is rotated according to the relevant time.

The rotation starts from there.