PROFESSIONAL

CAT AND MOUSE

INSTRUCTIONS:

Goal of the Project:

In Class 20, you learned how to evaluate if two sprites have collided.

In this project, you will apply what you have learned in the class to create a cat and mouse animation.

Story:

Richard loves watching Tom and Jerry. He always wanted to design a game similar to Tom and Jerry. Richard has started with creating this game but struggles to check the collision between a cat and the mouse.

You already have the coding knowledge needed to help Richard build his dream game!

See a video of this in action.

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

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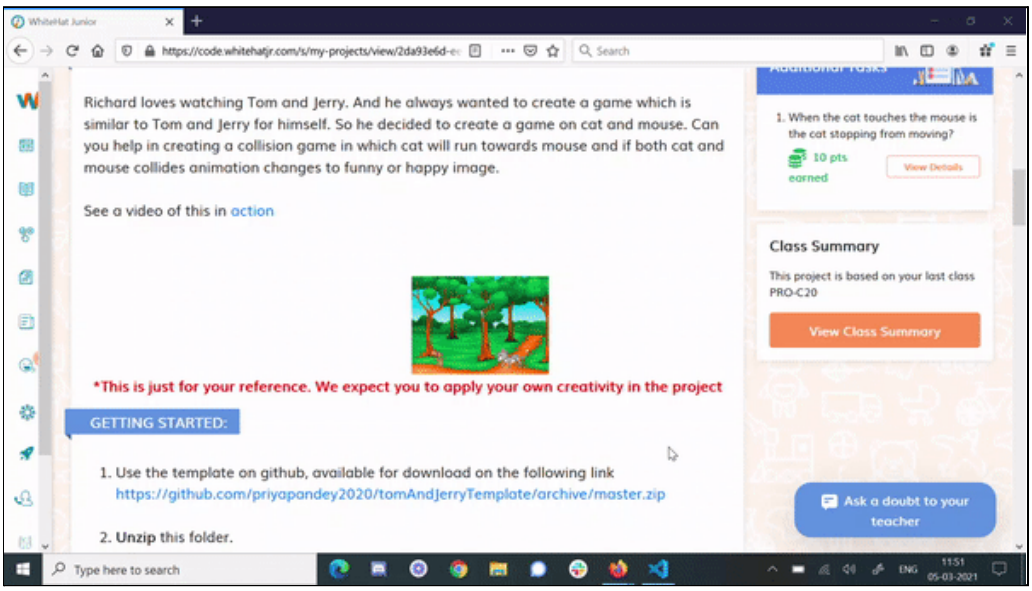
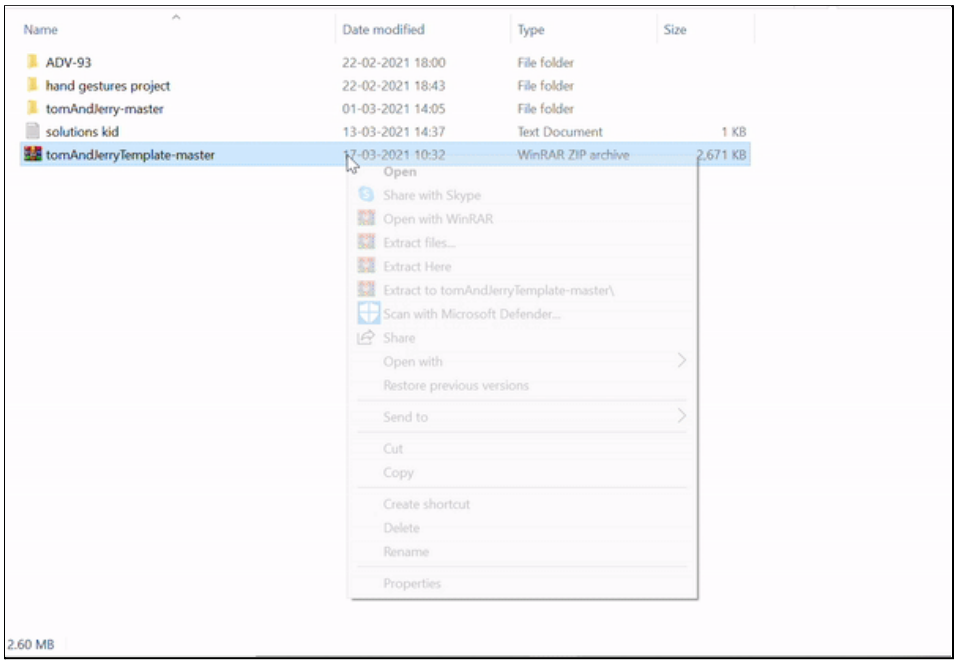
Getting Started:

1. Use the template on GitHub, available for download on the following link: https://github.com/priyapandey2020/tomAndJerryTemplate/archive/master.zip



2. Navigate to the folder where the file is downloaded.
3. **Unzip the download** and **rename** the folder to Project 20.



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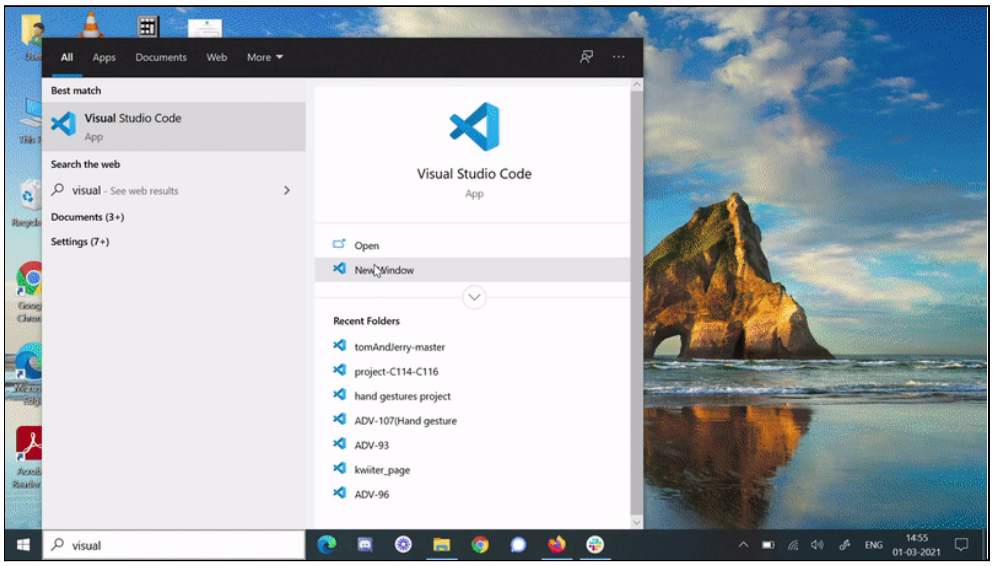
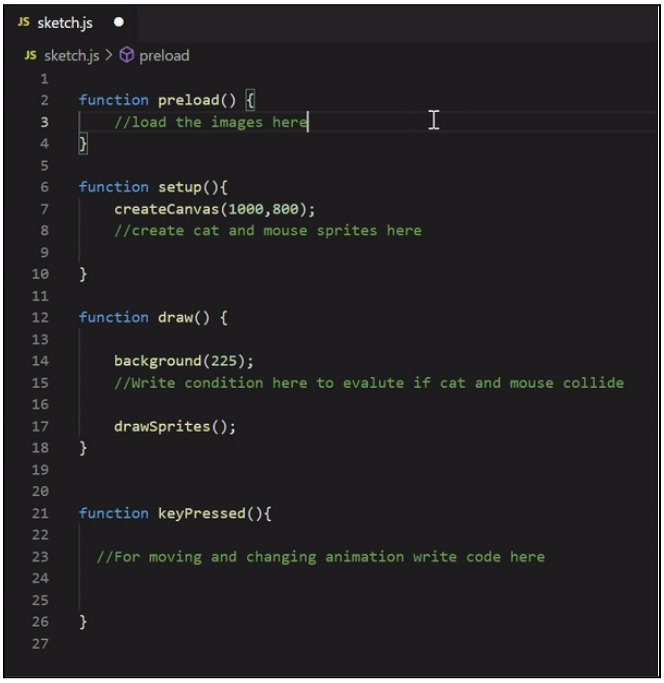
4. **Import** this folder **into VS Code Editor**.



5. In VS Code, you will see the files on the left hand side. Start editing your code in **sketch.js** file.



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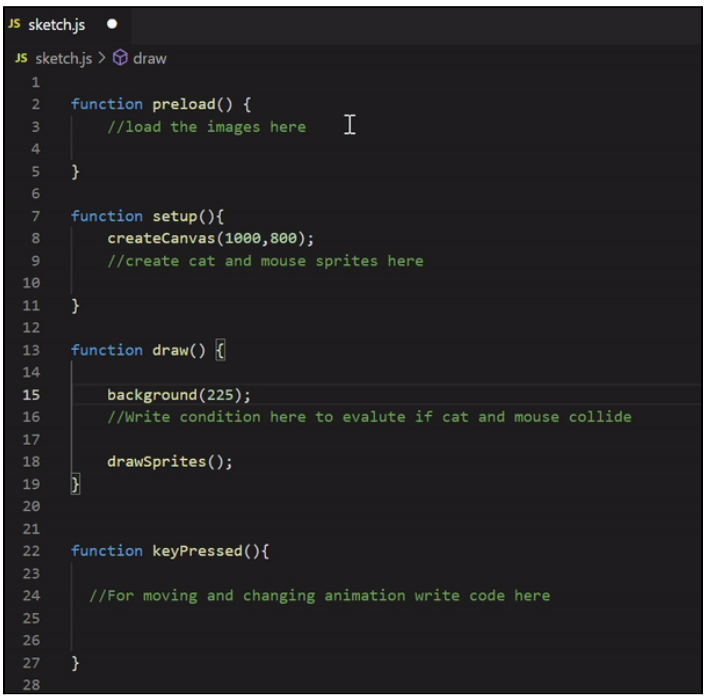
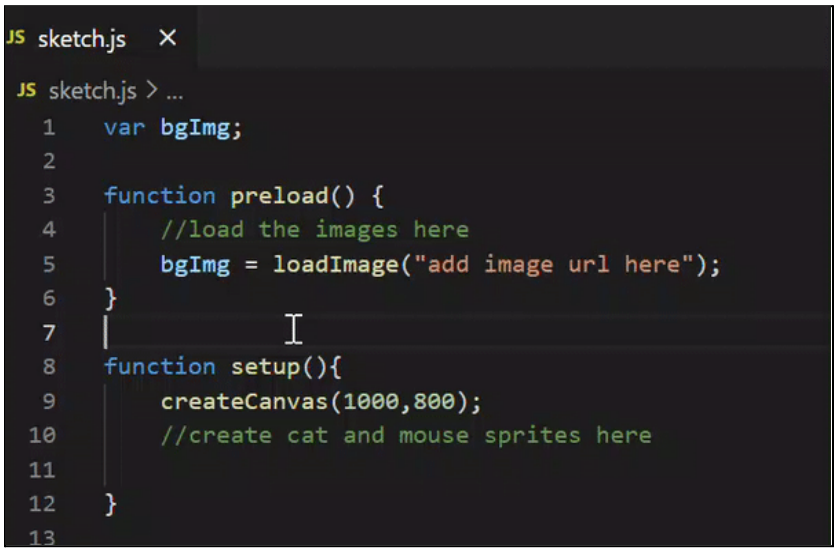
Specific Tasks to complete the project:

1. Create a canvas and add a background image. The background image is in the downloaded template.



2. Create two variables for a **cat** and a **mouse** sprite.



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3. Load the images for cat and mouse sprite in **preload( )**. These images are available in the template.

```
var bgImg;
var cat;

function preload() {
    //load the images here
    bgImg = loadImage("add image url here");

}

function setup(){
    createCanvas(1000,800);
    //create cat and mouse sprites here

}

function draw() {

    background("add image variable name here");
    //Write condition here to evalute if cat and mouse collide

    drawSprites();
}
```

4. Create a cat and mouse sprite in **setup( )** and add images to it. You can find the images for the same in the template.

```
var bgImg;
var cat;

function preload() {
    //load the images here
    bgImg = loadImage("add image url here");
    catimg1 = loadAnimation("images/cat1.png");
    mouseimg1 = loadAnimation("images/mouse1.png");
    catimg2 = loadAnimation("add cat2 and cat3 image url here.");
    mouseimg2 = loadAnimation("add mouse2 and mouse3 image url here.");
}

function setup(){
    createCanvas(1000,800);
    //create cat and mouse sprites here


}

function draw() {

    background("add image variable name here");
    //Write condition here to evalute if cat and mouse collide

    drawSprites();
}
```

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5. When the **Left arrow** key is pressed, get the mouse to tease the cat. You can find the images for the same in the template.

```
sketch.js
sketch.js > keyPressed
46  }
47
48
49  function keyPressed(){
50
51      //For moving and changing animation write code here
52
53
54
55  }
56
```

6. If the **Left arrow** key is pressed, make the cat move towards the mouse. You can find the images for the same in the template.

```
sketch.js
sketch.js > ...
46  }
47
48
49  function keyPressed(){
50
51      //For moving and changing animation write code here
52
53      if(keyCode === LEFT_ARROW){
54          mouse.addAnimation("mouseTeasing", mouseimg2);
55          mouse.changeAnimation("mouseTeasing");
56          mouse.frameDelay = 25;
57
58
59
60      }
61
62  }
63
```

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7. Add a condition to check if the mouse and cat have collided. You have to do this in the draw() function, because it can happen anytime so we have to keep checking it.

```
sketch.js
sketch.js > draw
21
22  function draw() {
23
24      background("add image variable name here");
25      //Write condition here to evalute if cat and mouse collide
26
27
28      drawSprites();
29  }
30
31
32  function keyPressed(){
33
34      //For moving and changing animation write code here
35
36      if(keyCode === RIGHT_ARROW){
37          mouse.addAnimation("mouseTeasing", mouseimg2);
38          mouse.changeAnimation("mouseTeasing");
39          mouse.frameDelay = 25;
40      }
41
42      if(keyCode === LEFT_ARROW){
```

8. Change the animation of the cat and mouse to happy, once they have collided.

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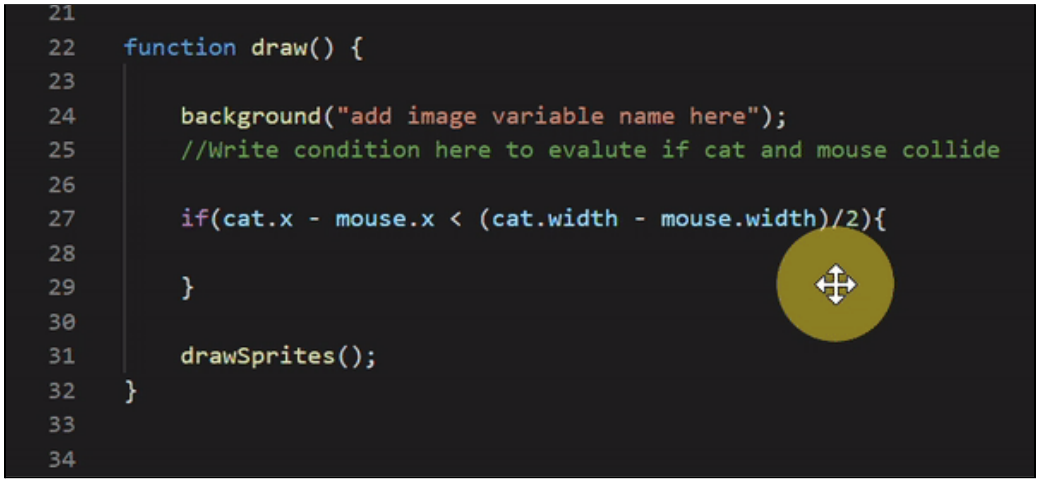

```
21
22  function draw() {
23
24      background("add image variable name here");
25      //Write condition here to evalute if cat and mouse collide
26
27      if(cat.x - mouse.x < (cat.width - mouse.width)/2){
28
29      }
30
31      drawSprites();
32  }
33
34
```

9. Make sure the project works before you submit it.

*Refer to the images given above for reference.

Submitting the Project:

1. **Upload** your completed project to your own GitHub account. **Here is a video on how to do this.** https://vimeo.com/561338335/aa2b0db66e

2. Enable **GitHub** pages for the repository. After you have done this step, wait for a few minutes for the website for your project to be live. See the video below. https://vimeo.com/561338446/a7e3084fb4

3. Copy and paste the link to the GitHub Pages in the Student Dashboard against the correct class number. See the video below. https://vimeo.com/561338502/3b97bd6737

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Hints for the project:

1. You can use the below given code snippet to evaluate collisions.

```
if(cat.x - mouse.x < (cat.width - mouse.width)/2)
{
    //write code here to change animation
}
```

2. When the collision happens, set the velocityX of the cat to 0, so that it stops moving leftwards.
3. To change the cat animation, you can use the code snippet shown below to set and change the animation.

```
cat.addAnimation("catRunning", catimg2);
cat.changeAnimation("catRunning");
```

REMEMBER... There is always something new to learn. Learning polishes your mind.
After submitting your project your teacher will send you feedback on your work.

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