

TP02

JavaScript

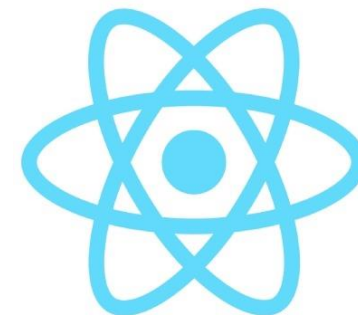
(CSS, Canvas, CRUD)



Svelte



NodeJS



ReactJS &
React native

Why JavaScript 🤔??



AngularJS



VueJS



NuxtJS

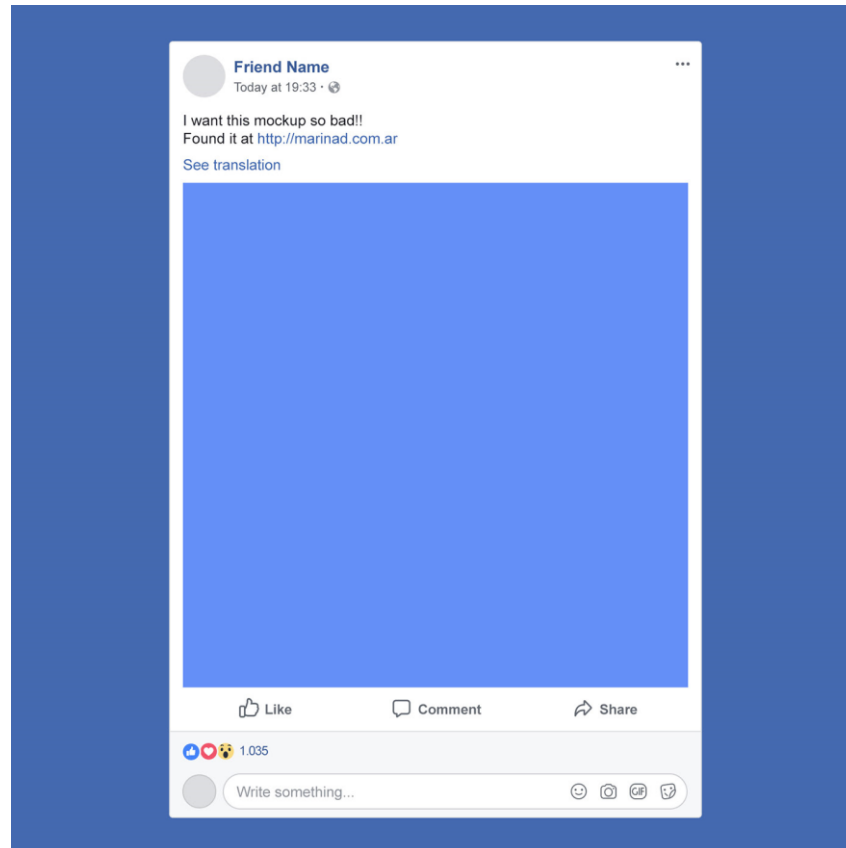


NextJS

Tailwindcss

TP02.1: Design the following UI using Tailwind

- Download/import Tailwind CDN <https://cdn.tailwindcss.com> to your html file
- Learn/Use Tailwind Layout to design as following UI <https://tailwindcss.com/docs/flex-basis>
- Use icons from <https://heroicons.com>



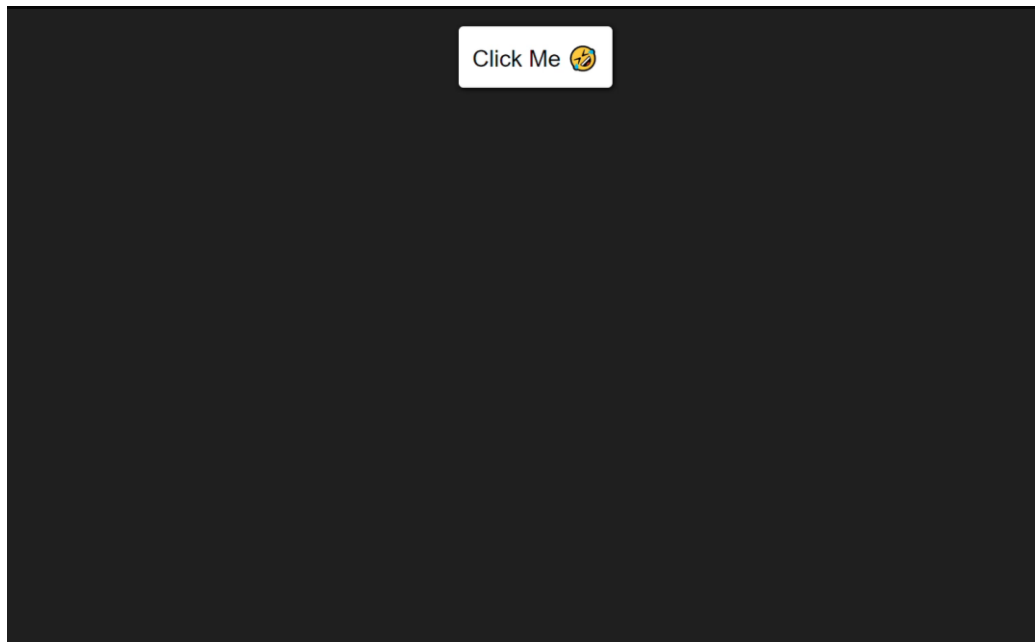
Runaway Button

TP02.2: Design and animate a button running away when mouse hovered using TweenJS

- Check out TweenJS repository <https://github.com/tweenjs/tween.js/>
- Download/import tweenJS to your html file

```
<script src="js/tween.umd.js"></script>
```

- For button, use ***absolute position*** in CSS



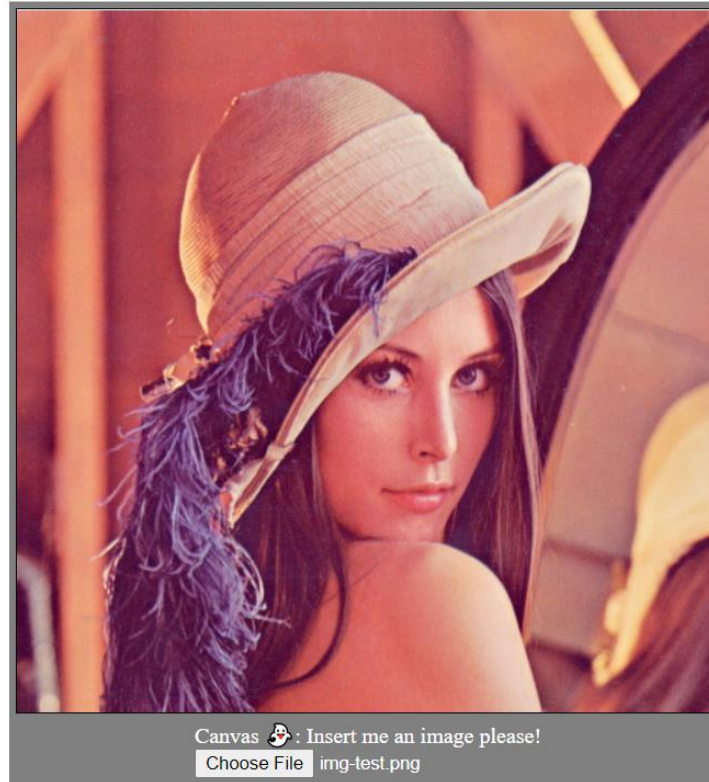
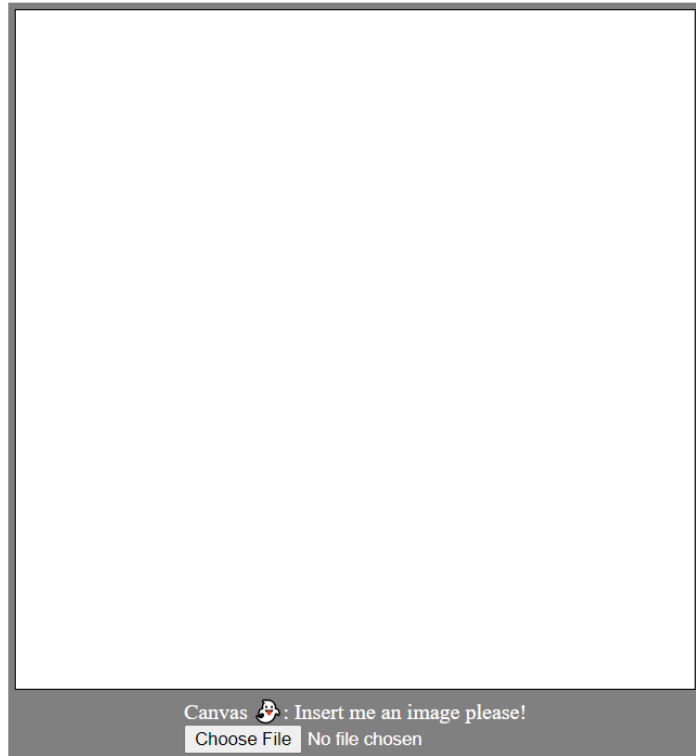
```
// Setup the animation loop.
function animate(time) {
  requestAnimationFrame(animate)
  TWEEN.update(time)
}
requestAnimationFrame(animate)

const moveFromSourceToDest = (startX, startY, EndX, EndY) => {
  const coords = { x: startX, y: startY }
  const tween = new TWEEN.Tween()
    .to({ x: EndX, y: EndY }, 1000)
    .easing(TWEEN.Easing.Quadratic.Out) // Animation
    .onUpdate(() => {
      console.log(`${coords.x}px, ${coords.y}px`);
    })
    .start()
}

moveFromSourceToDest(0, 0, 200, 150);
```

Canvas

TP02.3: Draw an uploaded image to a Canvas



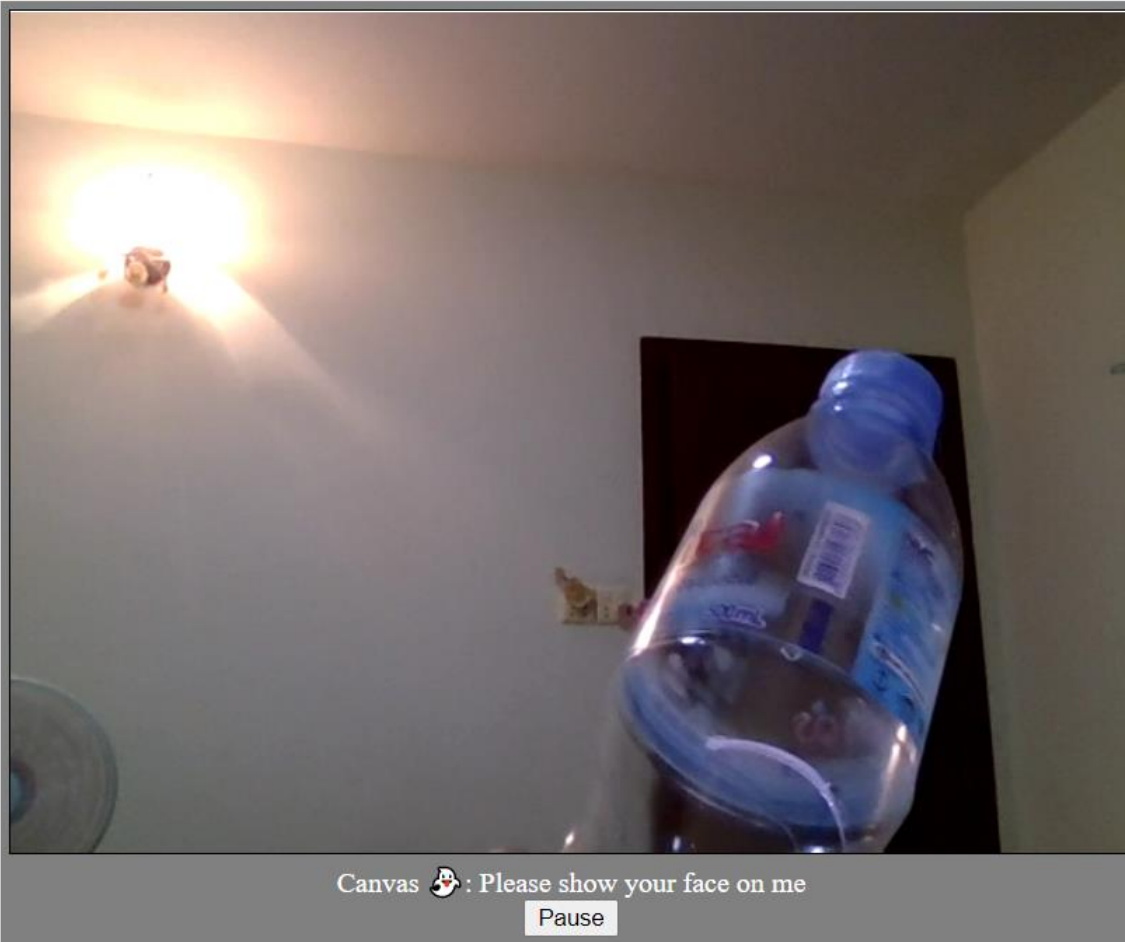
Tips

```
/**
 * Clue
 */
function handleImage(uploadedImgFile) {
  var reader = new FileReader();
  reader.onload = function (event) {
    var img = new Image();
    img.onload = function () {
      // ...
      // Draw an image here
    }
    img.src = event.target.result;
  }
  reader.readAsDataURL(uploadedImgFile);
}
```

Canvas

TP02.4: Draw a live camera video into a Canvas

Tips

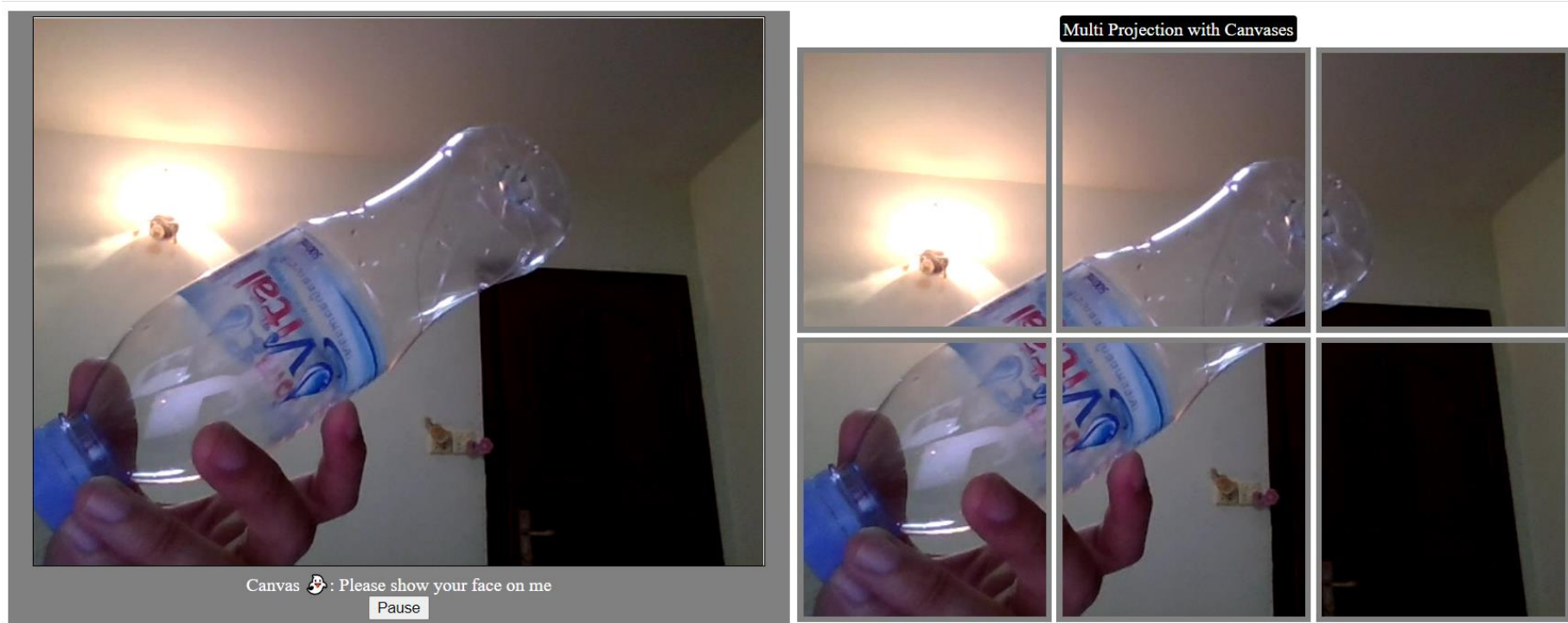


```
/**
 * Access camera
 */
navigator.mediaDevices.getUserMedia({
  audio: false,
  video: true
}).then((stream) => {
  video.srcObject = stream;
}).catch((err) => {
  console.log('navigator.MediaDevices.getUserMedia error: ', err.message, err.name);
});
```

```
(function loop() {
  if(playing){
    canvas.getContext('2d').drawImage(video, 0, 0, canvas.width, canvas.height);
    setTimeout(loop, 1000 / 30); // drawing at 30fps
  }
})();
```

Canvas

TP02.5: Draw a live camera video into multiple projection within Canvas and crop them with OpenCV library



Tips

Import OpenCV: https://docs.opencv.org/3.4/d0/d84/tutorial_js_usage.html
OpenCV basic operation: https://docs.opencv.org/3.4/de/d06/tutorial_js_basic_ops.html

```
let src = cv.imread('input-canvas');  
let dst = new cv.Mat();  
let rect = new cv.Rect(startX, startY, endX, endY);  
dst = src.roi(rect);  
cv.imshow('output-canvas', dst);
```







CRUD

EX4: Book shop CRUD (Create, Remove, Update, and Delete)

Name:

Category:

Price:

<div><div>DeleteChange name</div><div></div><div>Name: Book I1 Price: 100 riel Category: English</div></div>	<div><div>DeleteChange name</div><div></div><div>Name: Book I2 Price: 100 riel Category: English</div></div>	<div><div>DeleteChange name</div><div></div><div>Name: Book I3 Price: 100 riel Category: English</div></div>	<div><div>DeleteChange name</div><div></div><div>Name: Book I4 Price: 100 riel Category: English</div></div>
<div><div>DeleteChange name</div><div></div><div>Name: Book I5 Price: 100 riel Category: English</div></div>	<div><div>DeleteChange name</div><div></div><div>Name: Book I6 Price: 100 riel Category: English</div></div>		

- ✓ Grid view of book collection
- ✓ Add new book
- ✓ Delete book
- ✓ Update new name

👉 You can use **JavaScript** or **jQuery**

Good luck 🍀