16 video

Callback Function in JS ft. Event Listeners.

1. Topic cover what is a callback function in JS
2. JS is a synchronous & single threaded language
3. Blocking the main thread
4. Power of callback
5. deep about Event listener
6. Closure Demo with Event Listeners
7. Scope Demo with Event Listeners
8. Garbage Collection & removeEventListeners

→ Function are First Class Citizen
→ The function which is being passed as argument is known as callback function.
→ JS is a synchronous & single threaded language
due to callback function we can do async things.
one thing at a time in a specific order

```
function x(y){}
x(function y(){});
```

known as callback function

→ It is upto x() when y() should be called

Asynchronous callback function

```
setTimeout(function(){
  console.log("timer");},5000);
function x(y){
  console.log("x");
  y();}
x(function y(){
  console.log("y");
});
```

→ Registers timeout in a operate space of 5s

JS engine do not wait for finishing of timeout.

JS has only one call stack If anyone operation block the call stack then it is known as blocking the main thread.

↳ very-very heavy operation which takes around 20-30s to execute.

→ At this stage JS will not able to execute any other operation.

→ we should never block main thread hence we should use async operation which take ti

→ setTimeout take callback and execute it sometime else this piece of code and just get out of call stack.

→ If there are no callback function first class function - NO async operation will be execute

* Web API [the setTimeout] & call back functio we can achieve async operation.

II Deep about Event Listener

```
function attachEventListener(){
    let count = 0;
document.getElementById("clickme").addEventListener
("click", function(){
        console.log("Button clicked", ++count)
    });
});
```

↳ click event of button

In dev tool

Element | Console | Source | Network

style | computed | layout | Event-Listener | DOM

Why to remove event listener

They are heavy i.e It takes memory even though call stack is empty memory is not released as they form closure.

- If Event Listener are removed then all those which were held by closure will be garbage collected.