

1. What is LibUV?

LibUV is a multi-platform C library that provides Node.js with an event-driven, asynchronous I/O model.

It powers Node's event loop, async I/O, and abstract OS-specific features for networking, file system, timers, etc.

2. Difference between setImmediate(f) and setTimeout(f, 0)

Feature	setImmediate(f)	setTimeout(f, 0)	
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Timing	Executes after I/O events	Executes after at least 0ms delay	
Event Loop	Runs in 'check' phase	Runs in 'timers' phase	
Priority	Higher priority when after I/O	Lower priority; might be delayed more	
Use Case	Post-I/O operations	General delay execution	

3. Difference between process.nextTick(f) and setImmediate(f)

Feature	process.nextTick(f)	setImmediate(f)	
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Timing	Executes before event loop continues	Executes after I/O callbacks	
Priority	Higher (runs before any I/O or timers)	Lower	
Blocking Risk	Can starve event loop if overused	Does not block the event loop	

4. Code Output Explanation:

Code:

```
const fs = require('fs');

const rd = fs.createReadStream("input.txt");

rd.close();

rd.on("close", () => console.log('readableStream close event'))


fs.readFile('input.txt', "utf-8", (error, data) => {

    if (error) console.log(error);

    else console.log(data)

});


setTimeout(() => console.log("this is setTimeout"), 5000);

setTimeout(() => console.log("this is setTimeout"), 0);


setImmediate(() => console.log("this is setImmediate 1"));

setImmediate(() => {

    console.log("this is setImmediate 2")

    Promise.resolve().then(() => console.log('Promise.resolve inside setImmediate'));

});


Promise.resolve().then(() => console.log('Promise.resolve 1'));

Promise.resolve().then(() => {

    console.log('Promise.resolve 2')

    process.nextTick(() => console.log('nextTick inside Promise'));

});

process.nextTick(() => console.log('nextTick 1'));
```

Expected Output:

nextTick 1

Promise.resolve 1

Promise.resolve 2

nextTick inside Promise

this is setTimeout

readableStream close event

<contents of input.txt>

this is setImmediate 1

this is setImmediate 2

Promise.resolve inside setImmediate

this is setTimeout