Swinburne University of Technology

COS20007 Object Oriented Programming

Clock in Another Language

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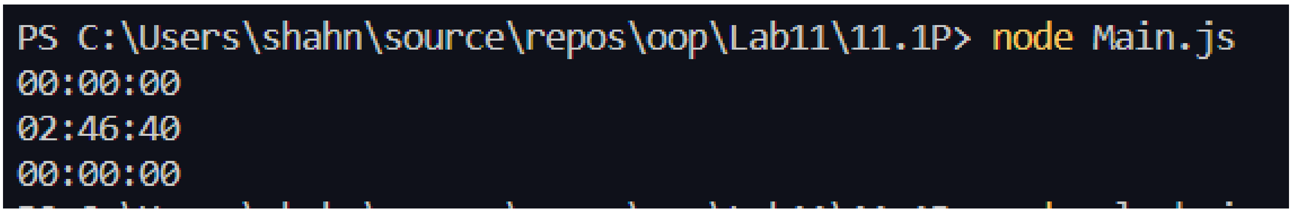
```
// counter class
class Counter {

    // class constructor with a label parameter
    constructor(label) {
      this.label = label;
      this.ticks = 0;
    }

    // increment method
    increment() {
      this.ticks++;
    }

    // reset method
    reset() {
      this.ticks = 0;
    }
  }

//clock class
class Clock {

    // class constructor
    constructor() {
      this.hrs = new Counter("hrs");
      this.mins = new Counter("mins");
      this.secs = new Counter("secs");
    }

    // tick method, increments the clock by 1 second and resets appropriately
    tick() {
      if (this.secs.ticks <= 58) {
        this.secs.increment();
      } else if (this.mins.ticks <= 58) {
        this.mins.increment();
        this.secs.reset();
      } else if (this.hrs.ticks <= 22) {
        this.hrs.increment();
        this.mins.reset();
        this.secs.reset();
      } else {
        this.hrs.reset();
        this.mins.reset();
        this.secs.reset();
      }
    }

    // reset method, resets the clock
    reset() {
      this.hrs.reset();
      this.mins.reset();
      this.secs.reset();
  }

  // time method, returns the current time
  get time() {
   return `${this.hrs.ticks.toString().padStart(2, '0')}:${this.mins.ticks.toString().padStart(2, '0')}:${this.secs.ticks.toString().padStart(2, '0')}`;
  }
 }

//main class
class Main {
  static main() {
   // Create an instance of the Clock class
   const clock = new Clock();

   // log current time
   console.log(clock.time);

   // Tick the clock
   for (let i = 0; i < 10000; i++) {
    clock.tick();
   }

   // log the updated time
   console.log(clock.time);

   // Reset the clock
   clock.reset();

   // log reset time
   console.log(clock.time);
  }
 }

 // Call the main function to start the program
 Main.main();
```



```
PS C:\Users\shahn\source\repos\oop\Lab11\11.1P> node Main.js
00:00:00
02:46:40
00:00:00
```