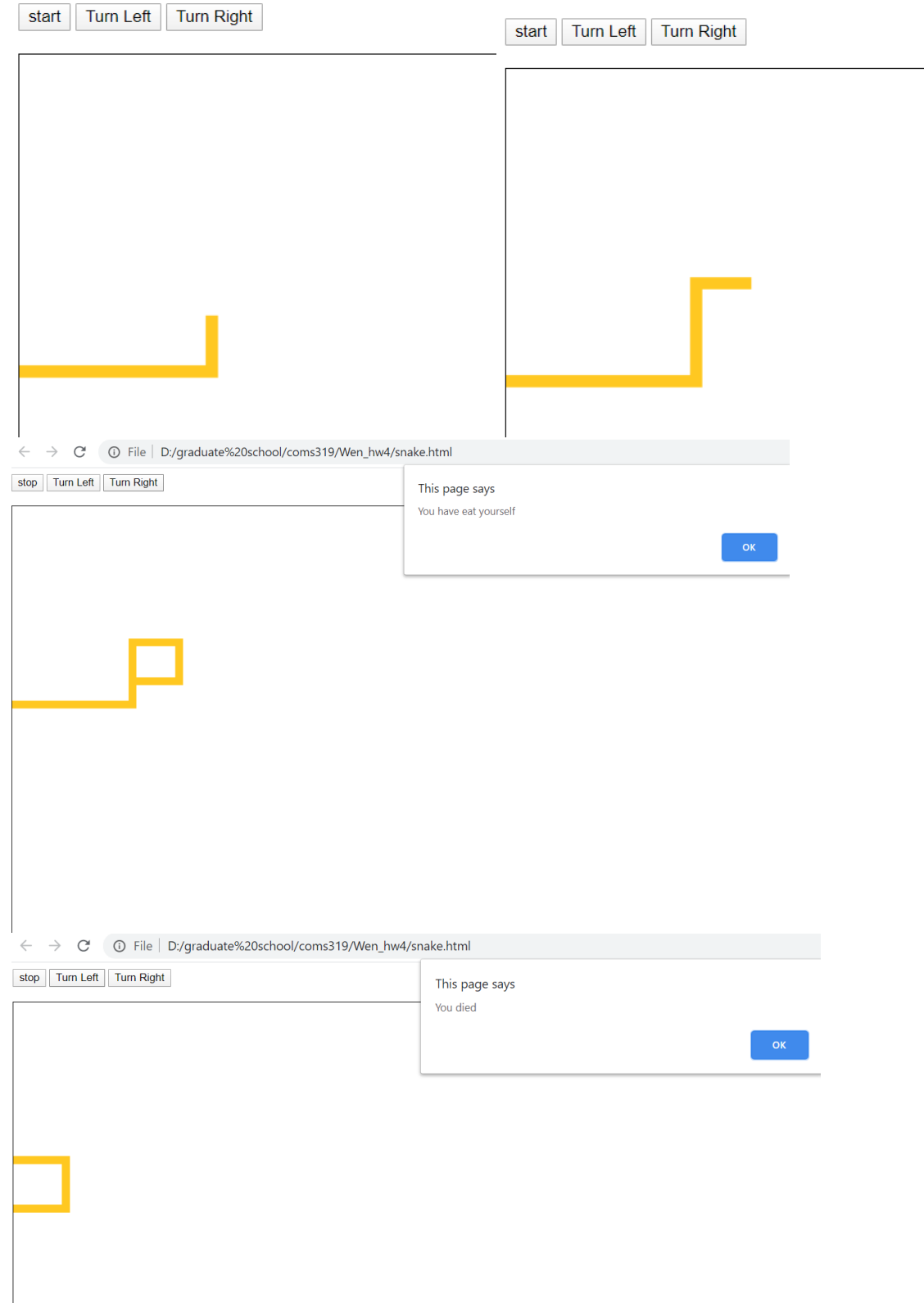# CS319 HW4   2/18/2020   Zhanghao Wen

Announcement: This is hw#4 and for task 2 I named file hw4.js instead of hw3.js (named from instruction) as well as HW4.zip instead of HW3.zip.

My code satisfies all requirements without any additional improvement.

Task 1: Event Handling

Screenshot

start | Turn Left | Turn Right

start | Turn Left | Turn Right

← → C ⓘ File | D:/graduate%20school/coms319/Wen_hw4/snake.html

stop | Turn Left | Turn Right

This page says

You have eat yourself

OK

← → C ⓘ File | D:/graduate%20school/coms319/Wen_hw4/snake.html

stop | Turn Left | Turn Right

This page says

You died

OK

Solution Approach

Based on the screenshots above, my code is able to:
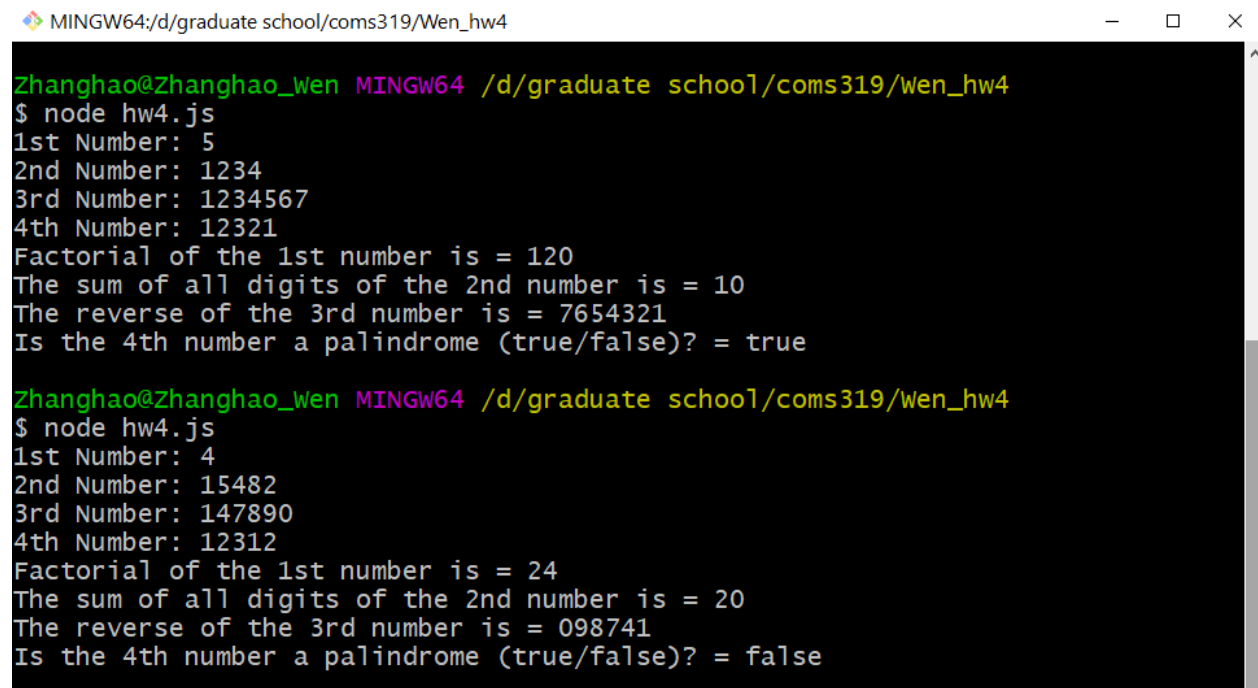
- ✓ The line can go over any upcoming path
- ✓ The line can bend left when left button clicked
- ✓ The line can bend right when right button clicked
- ✓ The line can stop when:
    - o Stop button pressed
    - o Snake head touch its body
    - o Snake head touch edge of rectangle

Procedure:

- Create buttons and canvas in html.
- When start button clicked, call start() function which will set timer and call run() function every 0.5 seconds.
- Set currentDirection globally and set it to "RIGHT" at first, and then it will change based on button clicked.
- In run() function, check whether snake head touch edge or itself, if yes then terminate and send alert.
- Run() function calls draw() function which will fill the little rectangle which forms the path eventually and draw(direction) take currentDirection as parameters so it can draw little rectangle according to the direction.

Task 2: NodeJS

Screenshot:

```
MINGW64:/d/graduate school/coms319/Wen_hw4                          —    □    ×

Zhanghao@Zhanghao_Wen MINGW64 /d/graduate school/coms319/Wen_hw4
$ node hw4.js
1st Number: 5
2nd Number: 1234
3rd Number: 1234567
4th Number: 12321
Factorial of the 1st number is = 120
The sum of all digits of the 2nd number is = 10
The reverse of the 3rd number is = 7654321
Is the 4th number a palindrome (true/false)? = true

Zhanghao@Zhanghao_Wen MINGW64 /d/graduate school/coms319/Wen_hw4
$ node hw4.js
1st Number: 4
2nd Number: 15482
3rd Number: 147890
4th Number: 12312
Factorial of the 1st number is = 24
The sum of all digits of the 2nd number is = 20
The reverse of the 3rd number is = 098741
Is the 4th number a palindrome (true/false)? = false
```

Solution Approach

Based on the screenshots above, my code is able to:

- ✓ Take four integer numbers as input
- ✓ Calculate the factorial of the first number
- ✓ Calculate the sum of all the digits of the second number
- ✓ For the third number given as an input, show the reversed number as an output
- ✓ For the fourth number given as an input, check whether that number is a Palindrome or not

Procedure:

- Create js file and npm install readline-sync
- Use 4 variables to store 4 inputs from user
- Create factorial function, sum digit function, reverse function and palindrome function
- Process inputs to those function and printout.
- The function details are simple, and they are in the code.