SCRATCH

Setting up

Scratch

Repl.it

w3schools

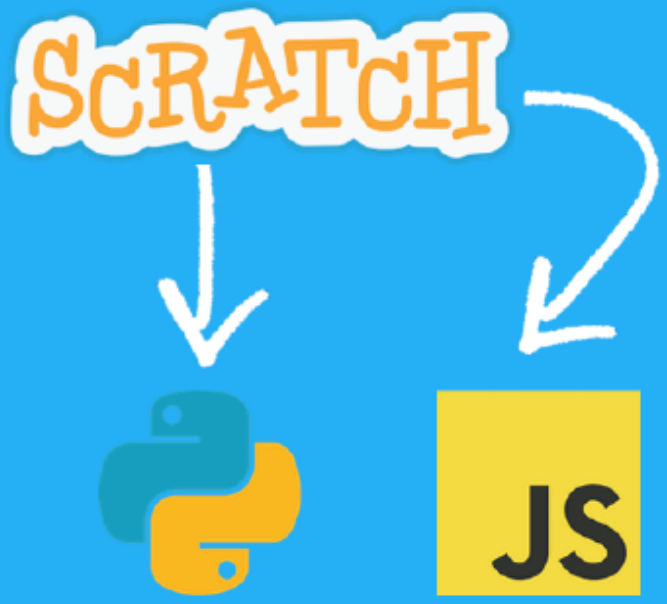
SCRATCH

JS

Getting Output

```
Hello, world!
```

Hello, world!



User input

```
name = input("Enter your name")

print(name)
```

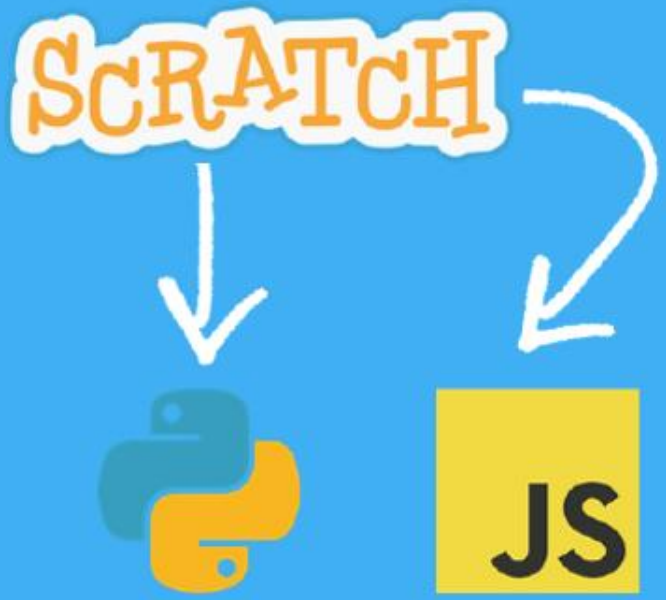
```
<script>

var name = prompt("Enter your name");

document.write(name);

</script>
```

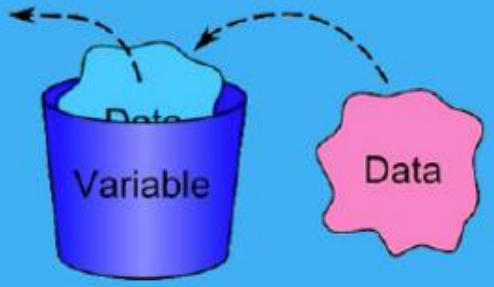
Concatenation

```
print('Hello, ' + 'world!')
```

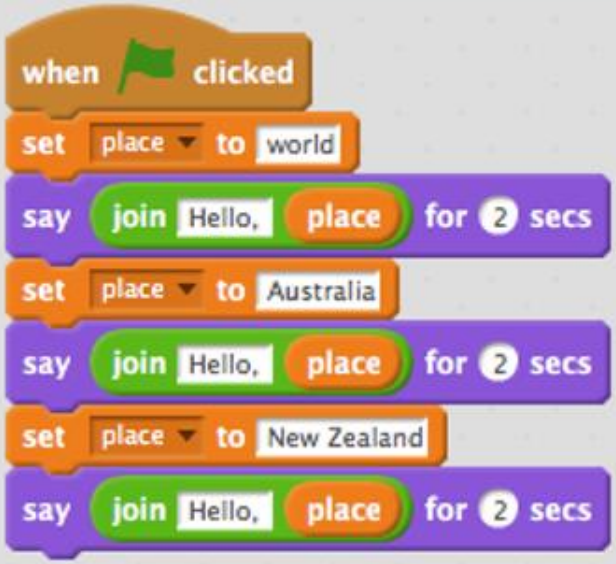
```
<script>
document.write('Hello, ' + 'world!');
</script>
```

- Spacing
- Integers and strings





variables

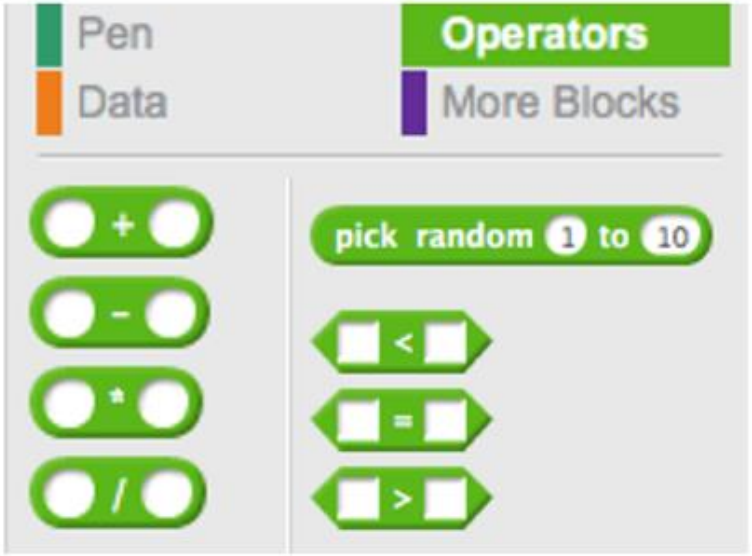



```
#set variable to world
place = "world"
print("Hello, " + place)

#change variable to Australia
place = "Australia"
print("Hello, " + place)

#change variable to New Zealand
place = "New Zealand"
print("Hello " + place)
```

```
<script>
//set variable to world
var place = "world";
document.write("Hello, " + place);

//change variable to Australia
place = "Australia"
document.write("Hello, " + place);

//change variable to New Zealand
place = "New Zealand"
document.write("Hello, " + place);
</script>
```

SCRATCH

OPERATORS



SCRATCH

JS

Text based Adventure

Gold

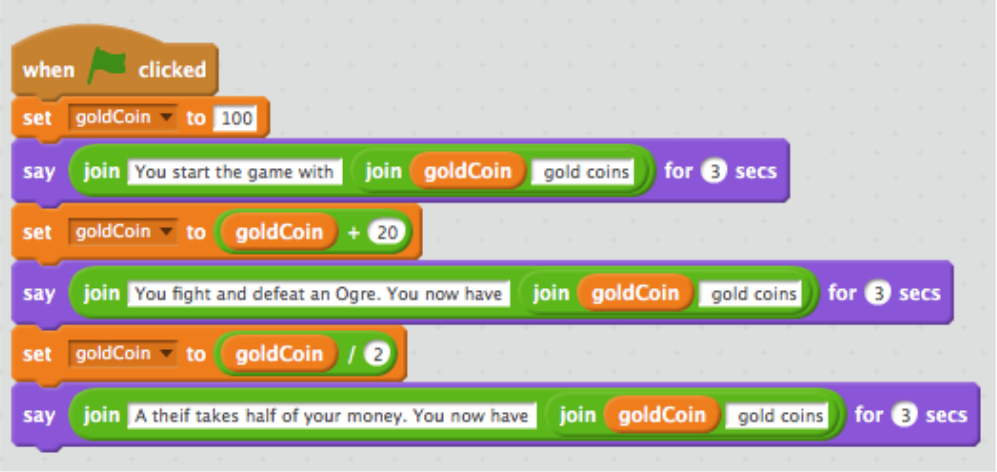
Ogre

Thief

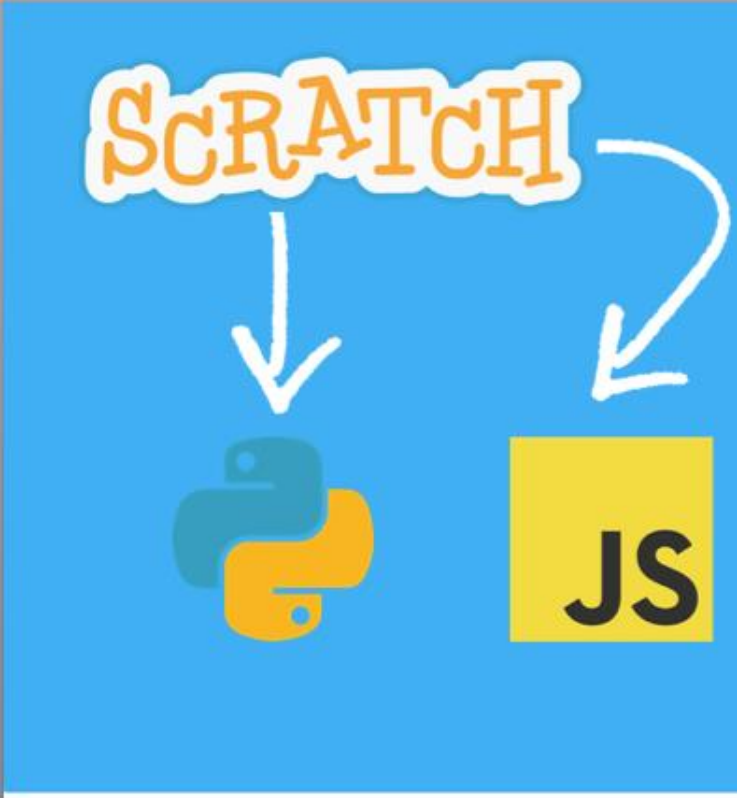
SCRATCH

JS

Text based Adventure

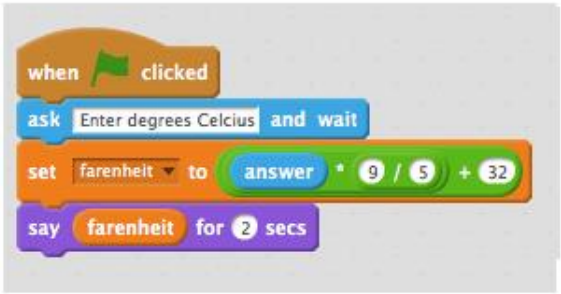


- Unplugged activity:
- Use Mentos and bottle caps to demonstrate variables



Celcius to Farenheit converter

Celcius x (9/5) + 32




```
celcius = input("Enter degrees Celcius")

farenheit = int(celcius) * 9/5 + 32

print(farenheit)
```

```
<script>

var celcius = prompt("Enter degrees Celcius");
farenheit = celcius * 9/5 + 32
document.write(farenheit)

</script>
```

Australian to USA Dollars converter

SCRATCH

JS

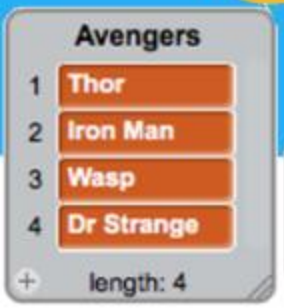
```
aud = input('Enter Australian Dollar amount you
wish to convert')

usd = input('Enter USD rate in cents – eg 0.73')

print( float(aud) * float(usd) )
```

```
<script>

var aud = prompt('Enter Australian Dollar amount you wish to convert');

var usd = prompt('Enter USD rate in cents - eg 0.73');

document.write( aud * usd )

</script>
```

SCRATCH

Arrays

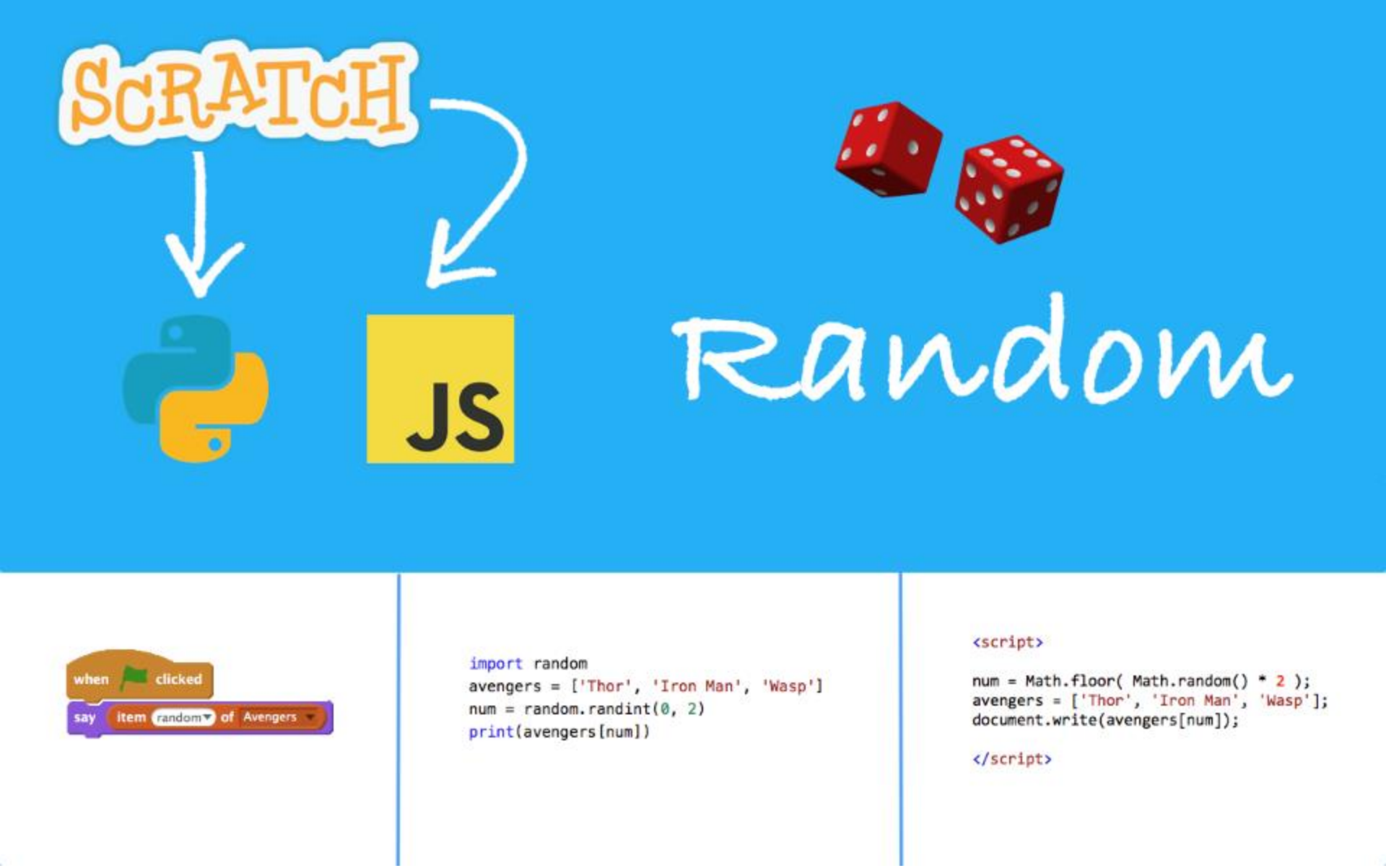
JS



Thor is my favourite Avengers character

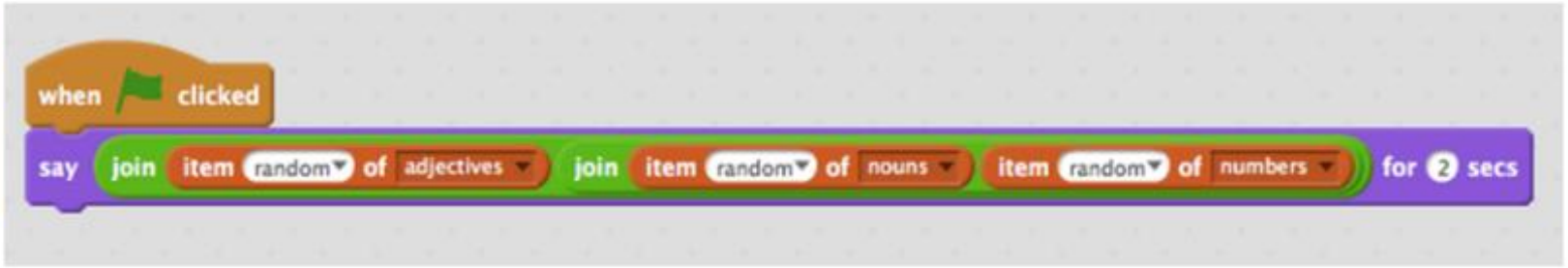
```
avengers = ['Thor', 'Iron Man', 'Wasp', 'Dr Strange']

print(avengers[0] + ' is my favourite Avengers character.')
```

```
var avengers = ['Thor', 'Iron Man', 'Wasp', 'Dr Strange'];

document.write(avengers[0] + ' is my favourite Avengers character.');
```


SCRATCH
JS
Random
when clicked
say item random of Avengers
import random
avengers = ['Thor', 'Iron Man', 'Wasp']
num = random.randint(0, 2)
print(avengers[num])
<script>
num = Math.floor(Math.random() * 2);
avengers = ['Thor', 'Iron Man', 'Wasp'];
document.write(avengers[num]);
</script>

SCRATCH

PASSWORD GENERATOR




```python
import random

adjectives = ['happy', 'tall', 'false', 'silent', 'goofy']
nouns = ['sushi', 'lion', 'motor', 'fish', 'camel']
numbers = ['1', '2','3', '4', '5']

print (    random.choice(adjectives) + random.choice(nouns) + random.choice(numbers)    )
```

```javascript
var adjectives = ['happy', 'tall', 'false', 'silent', 'goofy'];
var nouns = ['Sushi', 'Lion', 'Motor', 'Fish', 'Camel'];
var numbers = ['1', '2','3', '4', '5'];
var randNum =  Math.floor(  Math.random() * adjectives.length - 1);

document.write(  adjectives[randNum] + nouns[randNum] + numbers[randNum]  );
```

SCRATCH

JS

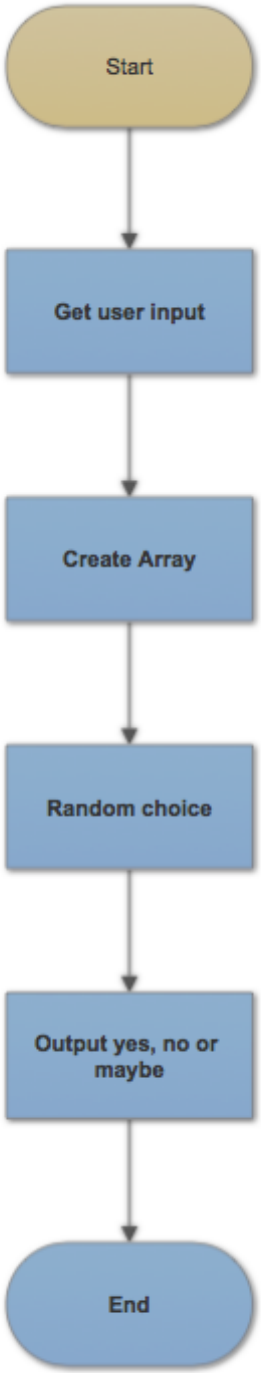
Decision Maker

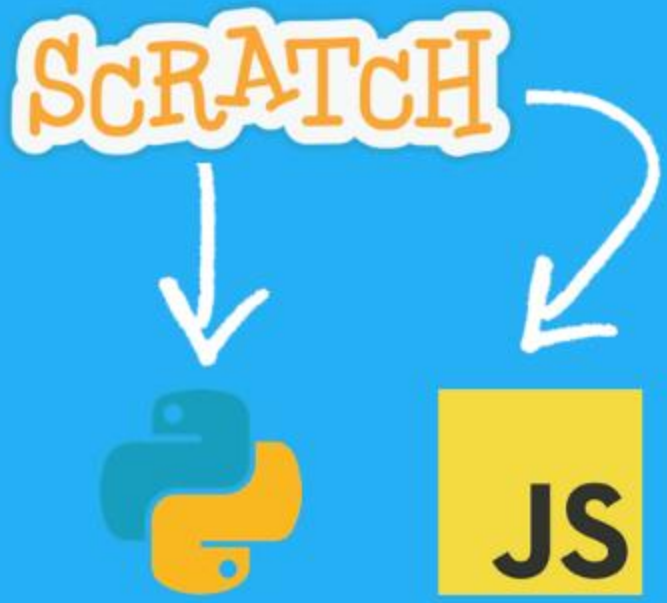
[Decision Maker (js)]

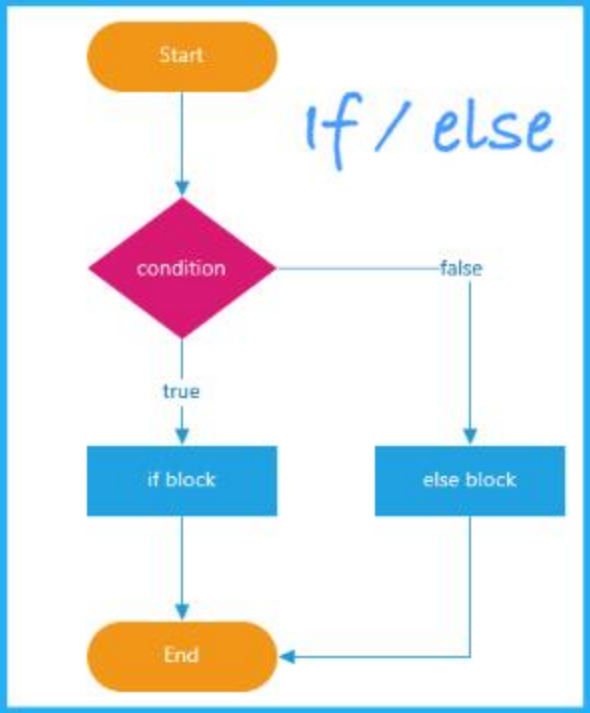
CHALLENGE

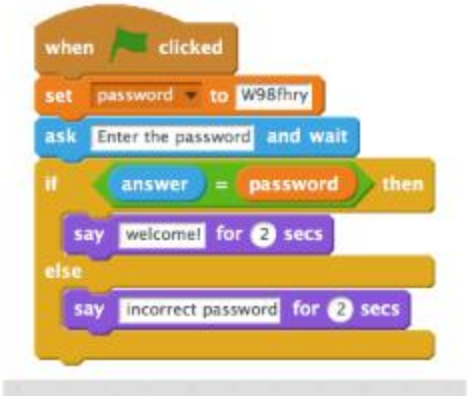
Could you make a magic 8 ball game?

Flowchart Decision Maker (no branching)









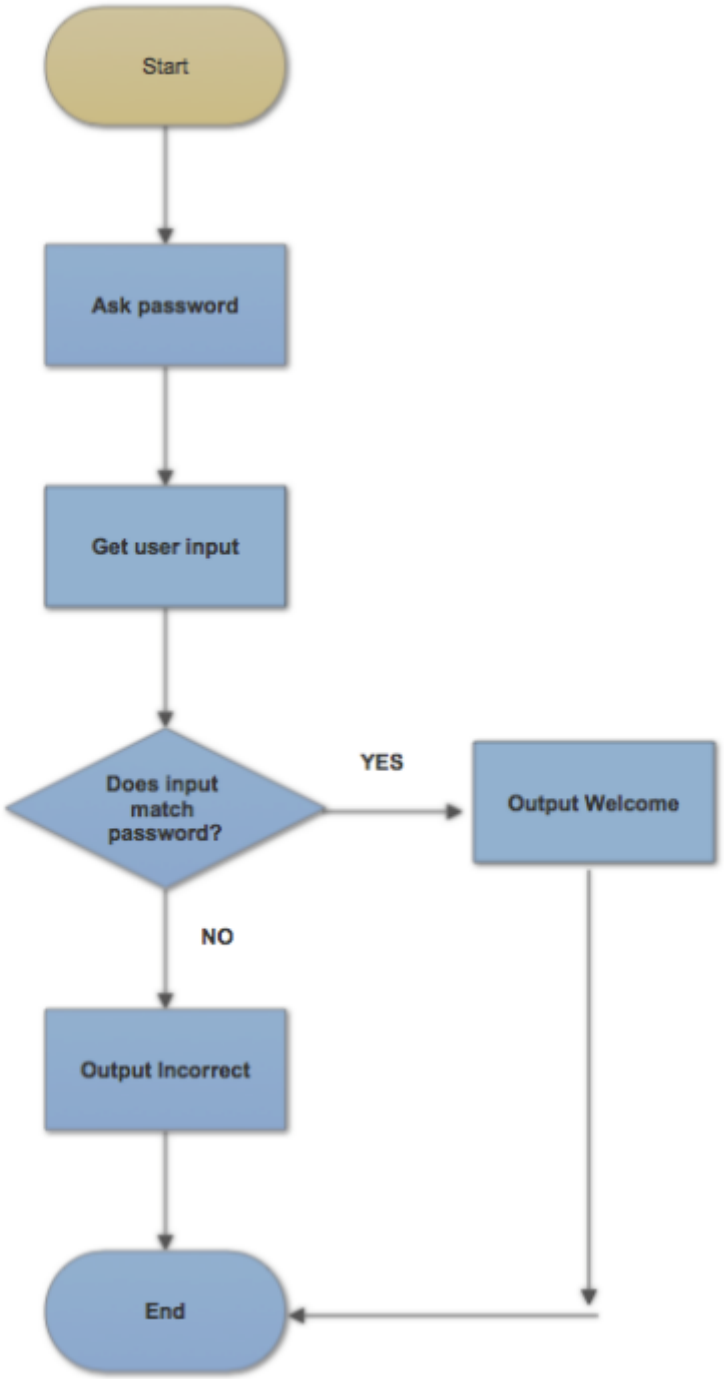

```
password = 'W98fhry'
answer = input("Enter the password")

if (answer == password):
  print("welcome!")
else:
  print('incorrect password');
```

```
var password = 'W98fhry';
var answer = prompt("Enter the password");

if (answer == password){
  document.write("welcome!");
  }

else {
  document.write('incorrect password');
  }
```

Flowchart

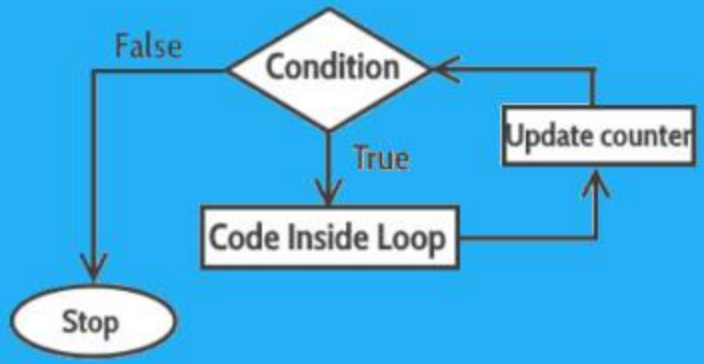
Password

1 attempt

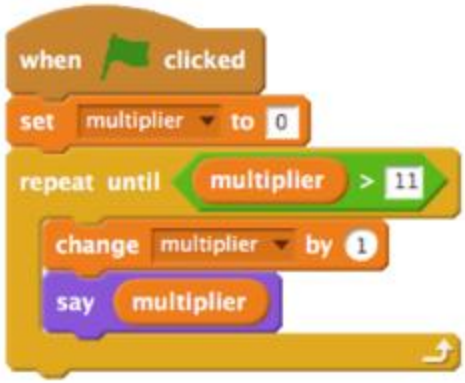


SCRATCH

JS



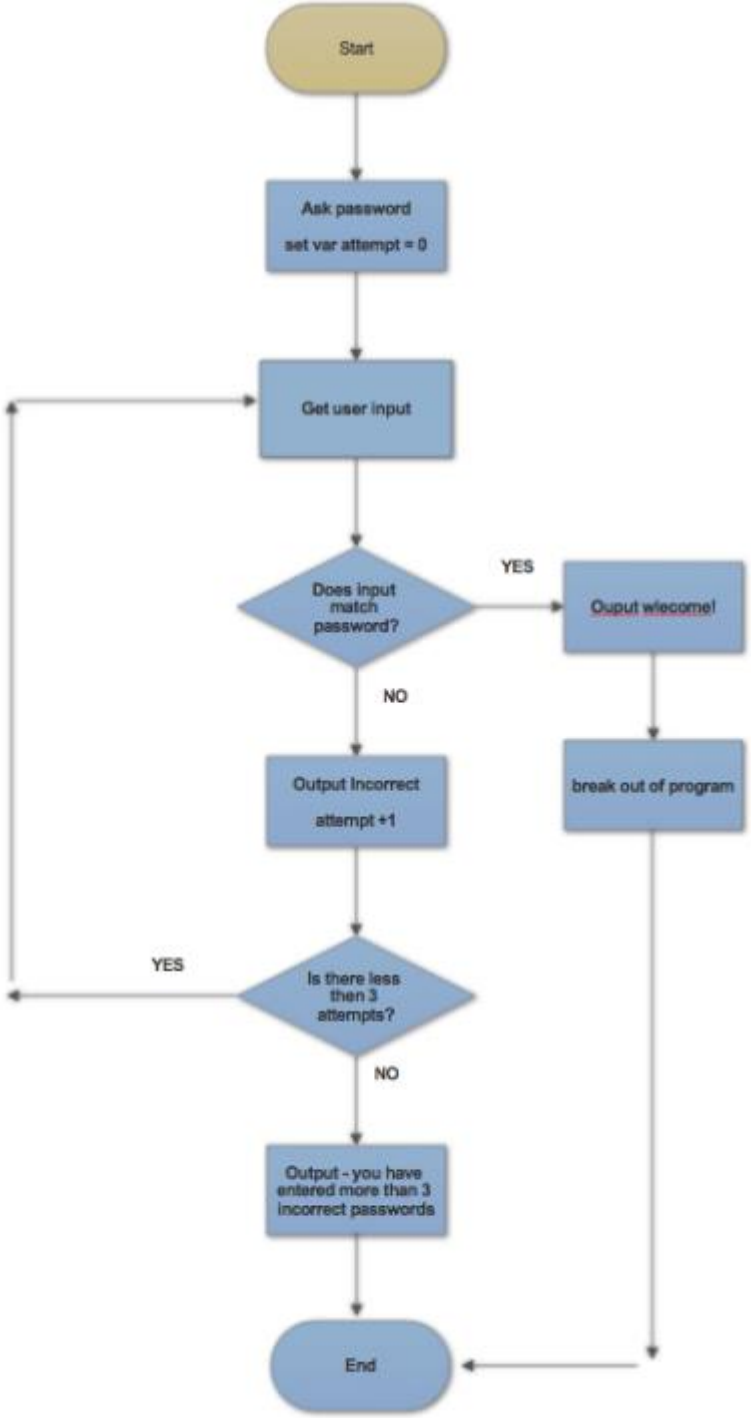
Loops

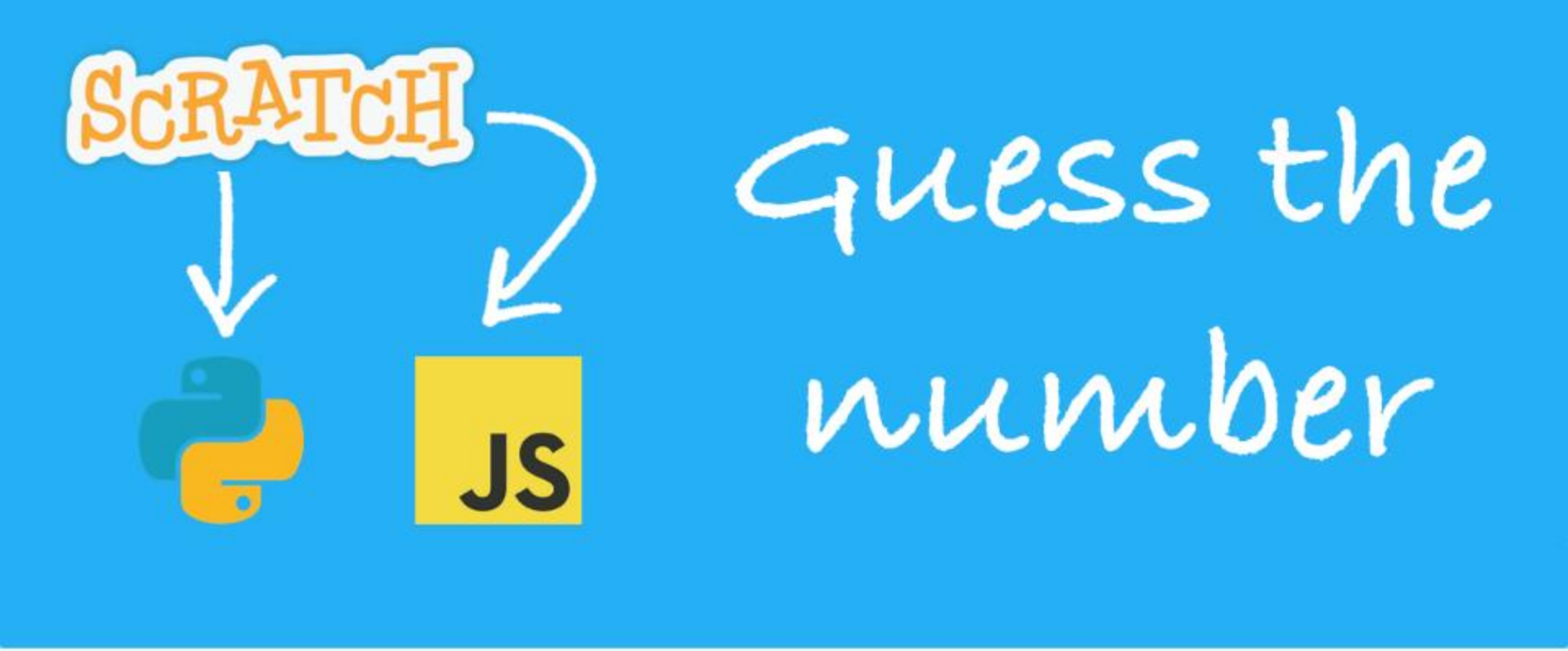



```
multiplier = 0
for multiplier in range (0, 12):
  print (multiplier + 1)
```

```
for (multiplier = 0; multiplier < 13; multiplier ++ )
      {
        document.write(multiplier + "<br>");
      }
```

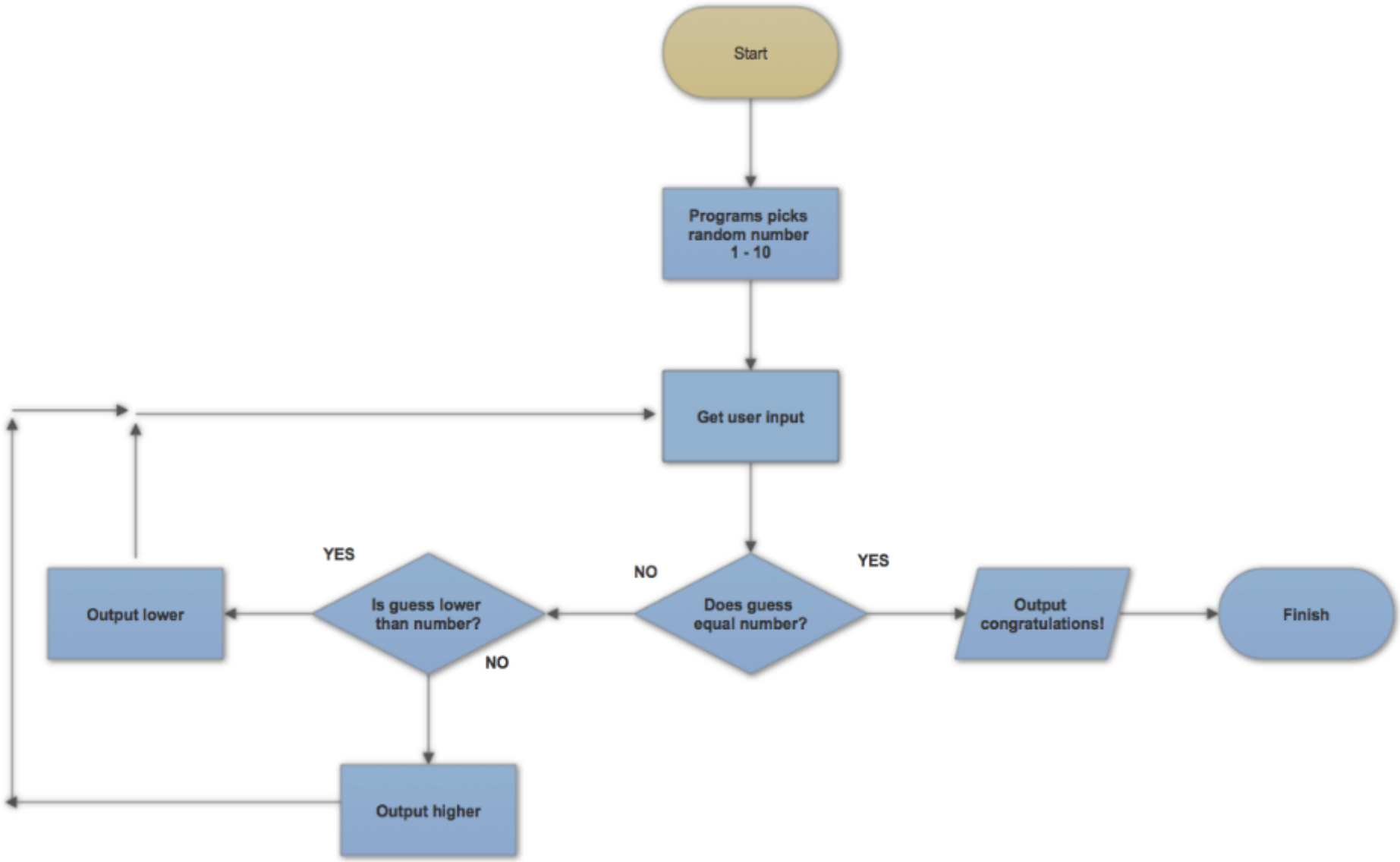
Revised Flowchart Password 3 attempts using loop





[Higher or lower (js)]

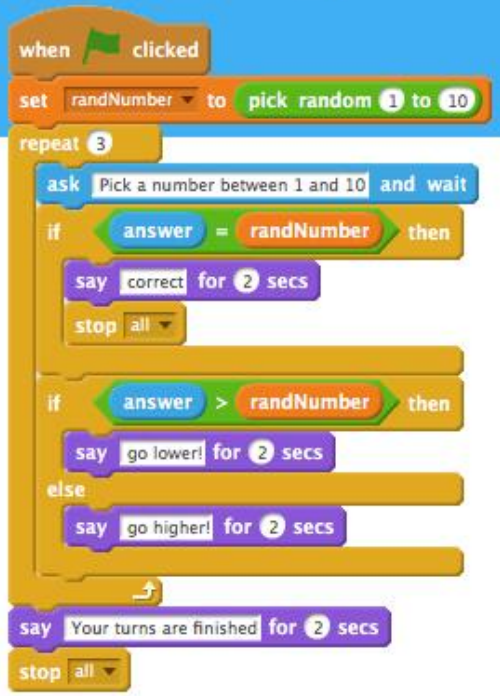
Flowchart: Higher or Lower

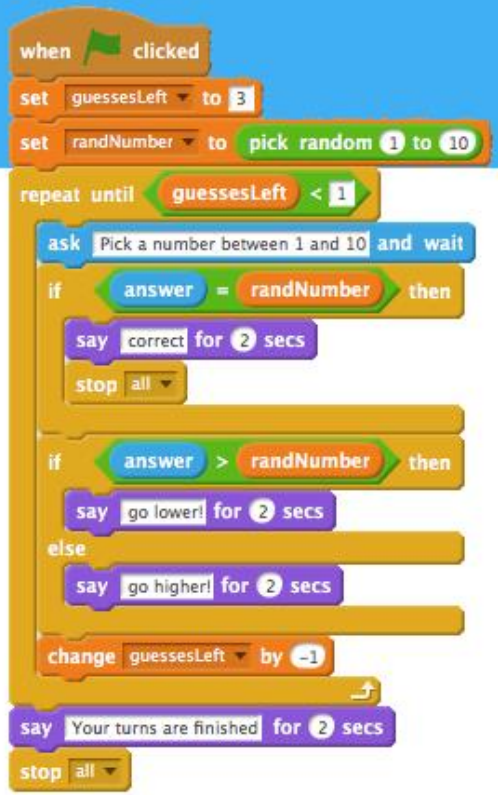


SCRATCH

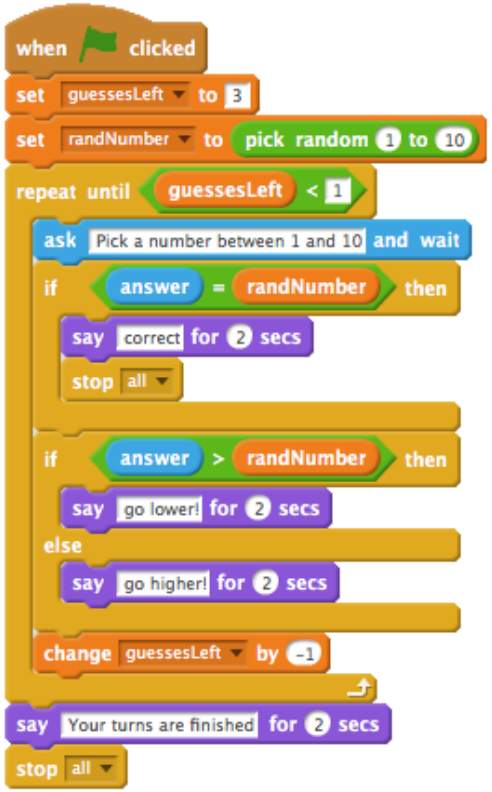
Guess the number

JS





SCRATCH




```python
import random
randNum = random.randint(1, 10)
guessesLeft = 3

while guessesLeft > 0:
 userGuess = input('Guess a number between 1 and 10')
 userGuess = int(userGuess)

 if userGuess == randNum:
  print('you are correct')
  break

 elif userGuess < randNum:
  print('go higher!')

 elif userGuess > randNum:
  print('go lower!')

 guessesLeft = guessesLeft - 1
```

HIGHER
LOWER

JS

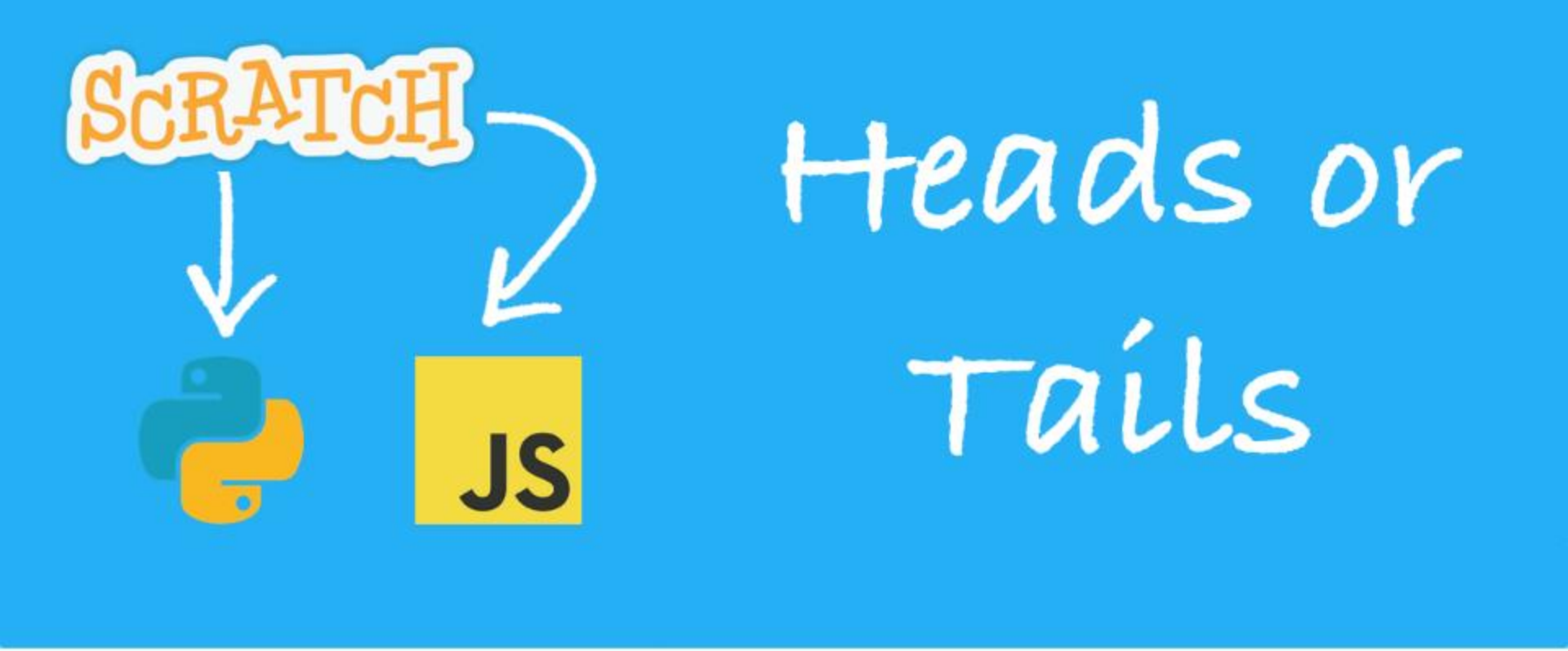
```javascript
var randNum = Math.floor ( Math.random()*10 + 1 );
var guessesLeft = 3;

while (guessesLeft > 0) {
    var userGuess = prompt('Enter a number between 1 and 10');

    if (userGuess == randNum) {
        alert('correct');
        break;
    } else if (userGuess < randNum) {
        alert('higher');
    } else if (userGuess > randNum) {
        alert('lower');
    }

    guessesLeft --;
}
```

CHALLENGE

Movie Usher program

The movie usher asks you how old you are. You enter your age. If you are younger than 15, the usher responds that you can only watch PG rated movies. If you are 15 or over, you can watch PG and M rated movies.

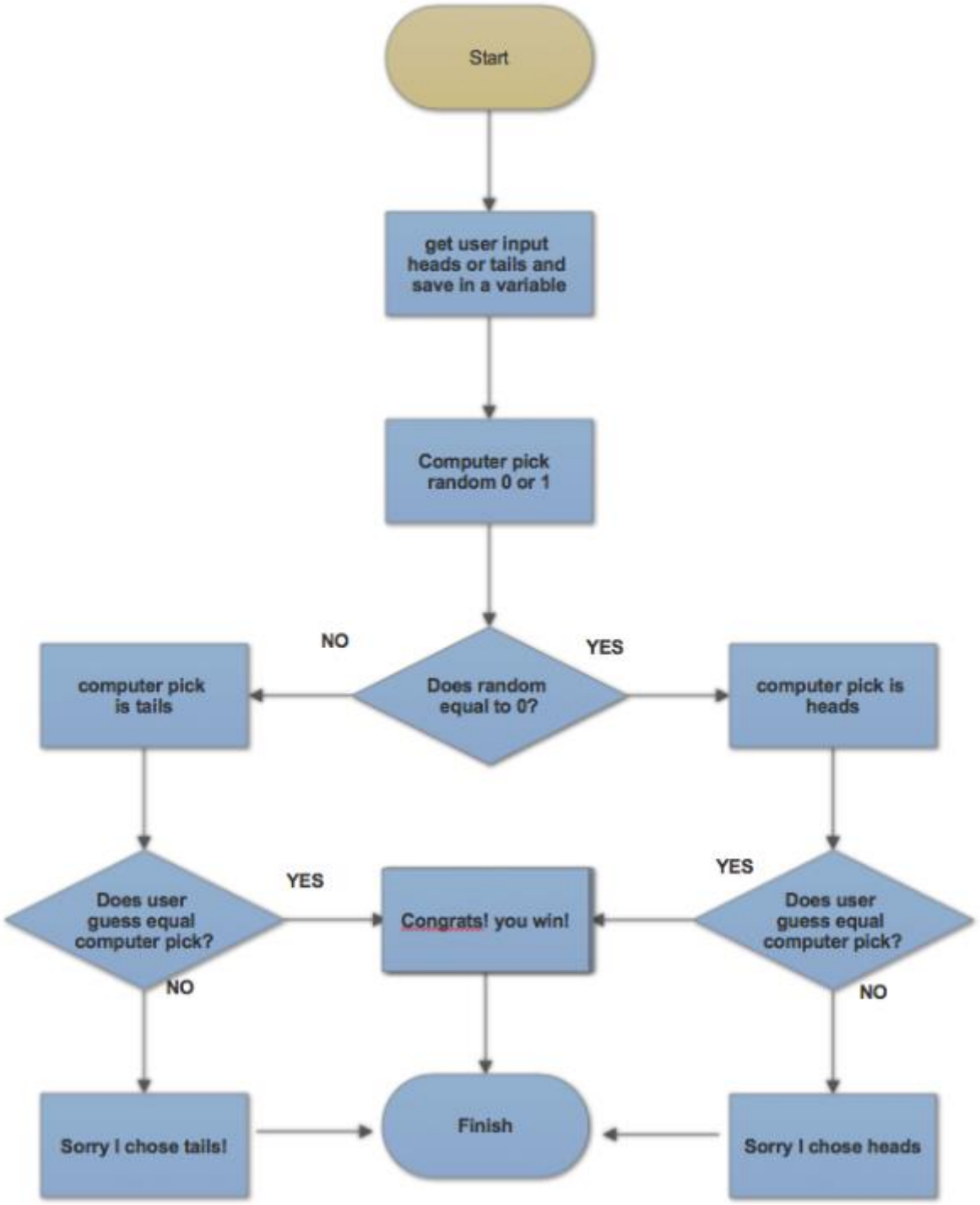
For an extra challenge, add in an R rated option for over 18 years.



[heads or tails](#) (js)

Flowchart:

Heads or tails



SCRATCH

```
userGuess = input('Heads or tails')
computerPick = random.randint(0,1)

if computerPick == 0:
  computerPick = 'heads'
else:
  computerPick = 'tails'

if userGuess == computerPick:
  print('Yes!')
else:
  print('Sorry!')
```

```
var userGuess = prompt('Heads or tails');
var computerPick = Math.floor(Math.random * 2

if (computerPick == 0) {
  computerPick = 'heads';
} else {
  computerPick = 'tails';
}

if (userGuess == computerPick) {
  document.write('Yes!');
}else{
  document.write('Sorry!');
}
```

JS

CHALLENGE

Could you make a scissors, paper, rock game?

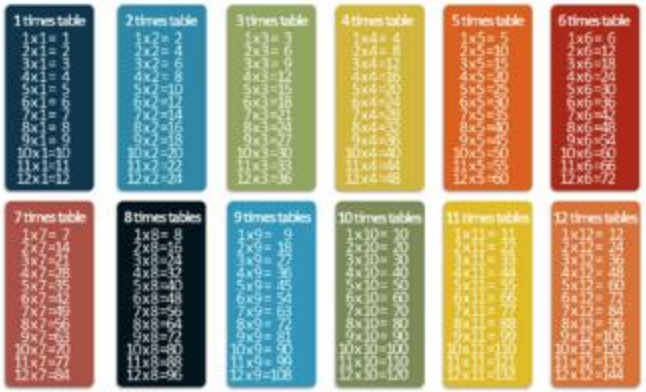
Scissors, paper, rock game (js)

What is the logic?

SCRATCH

JS

Times Table Generator




```
multiplier = input('Enter a number between 0 and 12');

for timesTable in range(1,13):
    print( multiplier , 'x', timesTable, '=', int(multiplier) * timesTable )
```