Project: Rock, Paper, Scissors

Learning Objectives

Statement(s):

- `if`
- `elif`
- `else`

- Boolean
  - What is a boolean?
    - `==`
    - `and`

Challenges:

- ASCII art - Use conditional logic to display ASCII art for Rock, Paper, and Scissors game

- Create a new game - Duplicate the Rock, Paper, Scissors game and remix it to create a new game

Getting Started

https://trinket.io/embed/python/de918c4f5d

First, let the player choose Rock, Paper or Scissors by typing the letter ‘r’, ‘p’, or ‘s’.

```
#!/bin/python3

from random import randint

player = input('rock(r), paper(p) or scissors(s)?')
```

Now print out what the player chose:

```
player = input('rock(r), paper(p) or scissors(s)?')
print(player, 'vs')
```

Test your code by clicking Run.
Click in the trinket output window to enter your choice.

> Now it's the computers turn. You can use randint function to generate a random number to decide between rock, paper, and scissors.

Use randint to generate a number

- Make the computer choose a number between 1 and 3
- Name this variable computer
- Print computer

```
computer = randint(1,3)
print(computer)
```

Computer's Turn

What does this random number mean?

Let's assign meanings to the number!

1 = rock (r)

2 = paper (p)

3 = scissors (s)

Use `if` to check if the chosen number is 1

Use `==` to see if 2 things are the same

```
if computer == 1:
```

Use indentation to show which code is inside the if statement

This can be done using two spaces(tap the spacebar twice) or by using the tab key

Set computer to ‘r’ inside the if using indentation

```
# Computer's turn!
chosen = randint(1, 3)
```

You can add an alternative check using elif *(short for else if)*:

Remember indentation is important

This condition will only be checked if the first condition fails (if the computer didn't choose 1).

```
elif chosen == 2:
    computer = 'p'
```

And finally, if the computer didn't choose 1 or 2 then it must have chosen 3.

- This time we can just use else which means otherwise.
- Let's print computer and Run to make sure our random number is correct.

```
else:
    computer = 's'
print(computer)
```

Now, instead of printing out the random number that the computer chose you can print the letter.

- You can either delete the line `print(chosen)`
- Or you can make the computer ignore it by adding a `#` at the start of the line

```
# Computer's turn!
chosen = randint(1, 3)
#print(chosen)

if chosen == 1:
  computer = 'r'
elif chosen == 2:
  computer = 'p'
else:
  computer = 's'
print(computer)
```

Hmmm, the computer's choice gets printed on a new line. How do we fix this?

- You can fix this by adding `end=' '` after `vs`
- Are there any other ways we can fix this?

```
print(player, 'vs', end=' ')
```

Check the result

Let's add some code to see who won.

- You need to compare the player and computer variables to see who won.
- If they're the same then its a draw

```
if player == computer:
  print('DRAW!')
```

Now let's look at the cases where the player chose 'r' (rock) but the computer didn't.

- If the computer chose 's' (scissors) then the player wins (rock beats scissors).
- If the computer chose 'p' (paper) then the computer wins (paper beats rock).
- We can check the player choice *and* the computer choice using **and**

```
elif player == 'r' and computer == 's':
  print('Player wins')
elif player == 'r' and computer == 'p':
  print('Computer wins!')
```

Next let's look at the cases where the player chose 'p' (paper) but the computer didn't.

```
elif player == 'p' and computer == 'r':
  print('Player wins!')
elif player == 'p' and computer == 's':
  print('Computer wins!')
```

And finally, can you add the code to check for the winner when the player chose 's' (scissors) and the computer chose 'r' (rock) or 'p' (paper)?

Let's review your code for player == 's'

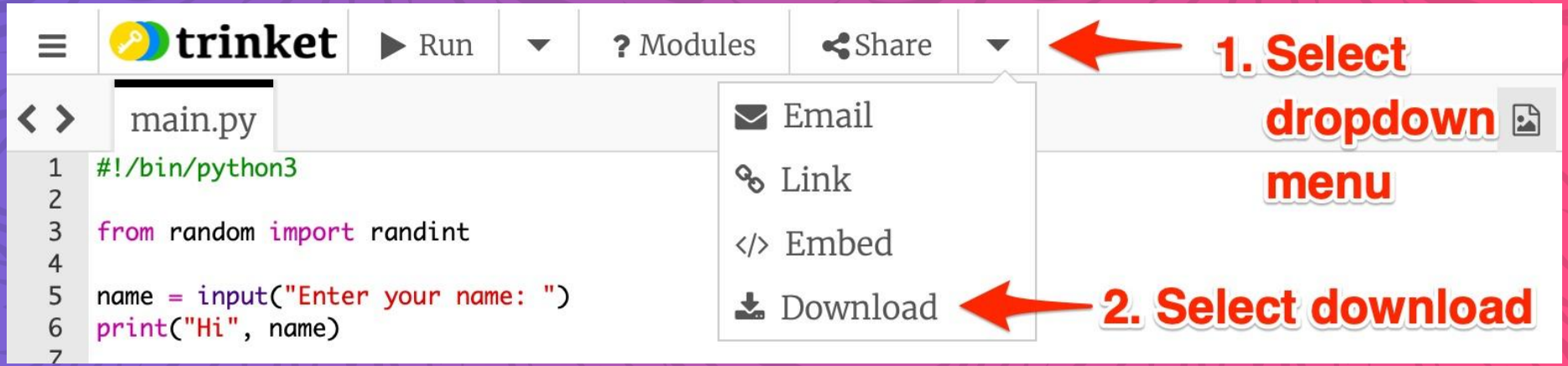
Raise your hand if you need help with your code.

```
elif player == 's' and computer == 'p':
  print('Player wins!')
elif player == 's' and computer == 'r':
  print('Computer wins!')
```

Now play the game
to test your code.
\o/

Click **Run** to start a
new game.

How to download your code:



Goodbye !

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