

Project 1: Rock, Paper, Scissors



Learning Objectives

Variables:

- `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

```
if computer == 1:  
    rival = 'r'
```



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 computer == 2:  
    rival = '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.

```
else:  
    rival = 's'
```



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

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



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

if computer == 1:
    rival = 'r'

elif computer == 2:
    rival = 'p'

else:
    rival = 's'

print(rival)
```

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 `rival` variables to see who won.
- If they're the same then its a draw

```
if player == rival:  
    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 rival == 's':  
    print('Player wins!')
```

```
elif player == 'r' and rival == '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 rival == 'r':  
    print('Player wins!')  
  
elif player == 'p' and rival == '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 rock or paper?

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

Raise your hand if you need help with
your code.

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



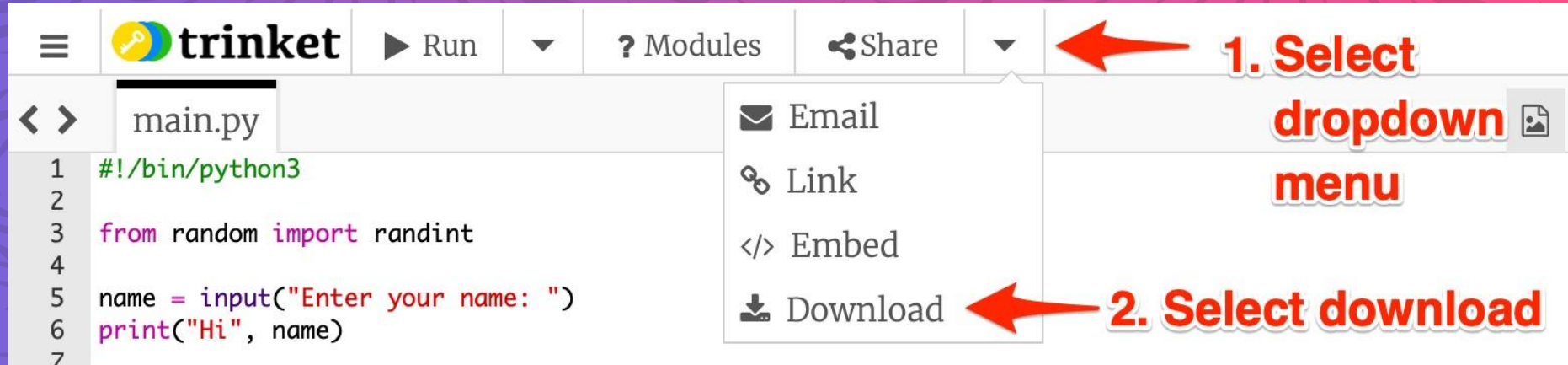


Now play the game
to test your code.
\\o/



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

How to download your code:



The screenshot shows the Trinket IDE interface. At the top, there is a navigation bar with the Trinket logo, a 'Run' button, a 'Modules' dropdown, a 'Share' button, and another dropdown menu. A red arrow points to the second dropdown menu, labeled '1. Select dropdown menu'. The second dropdown menu is open, showing options: 'Email', 'Link', 'Embed', and 'Download'. A red arrow points to the 'Download' option, labeled '2. Select download'. The code editor on the left shows a Python script named 'main.py' with the following code:

```
1 #!/bin/python3
2
3 from random import randint
4
5 name = input("Enter your name: ")
6 print("Hi", name)
7
```

Goodbye !

