

Project 1: Rock, Paper, Scissors



Learning Objectives

Variables:

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

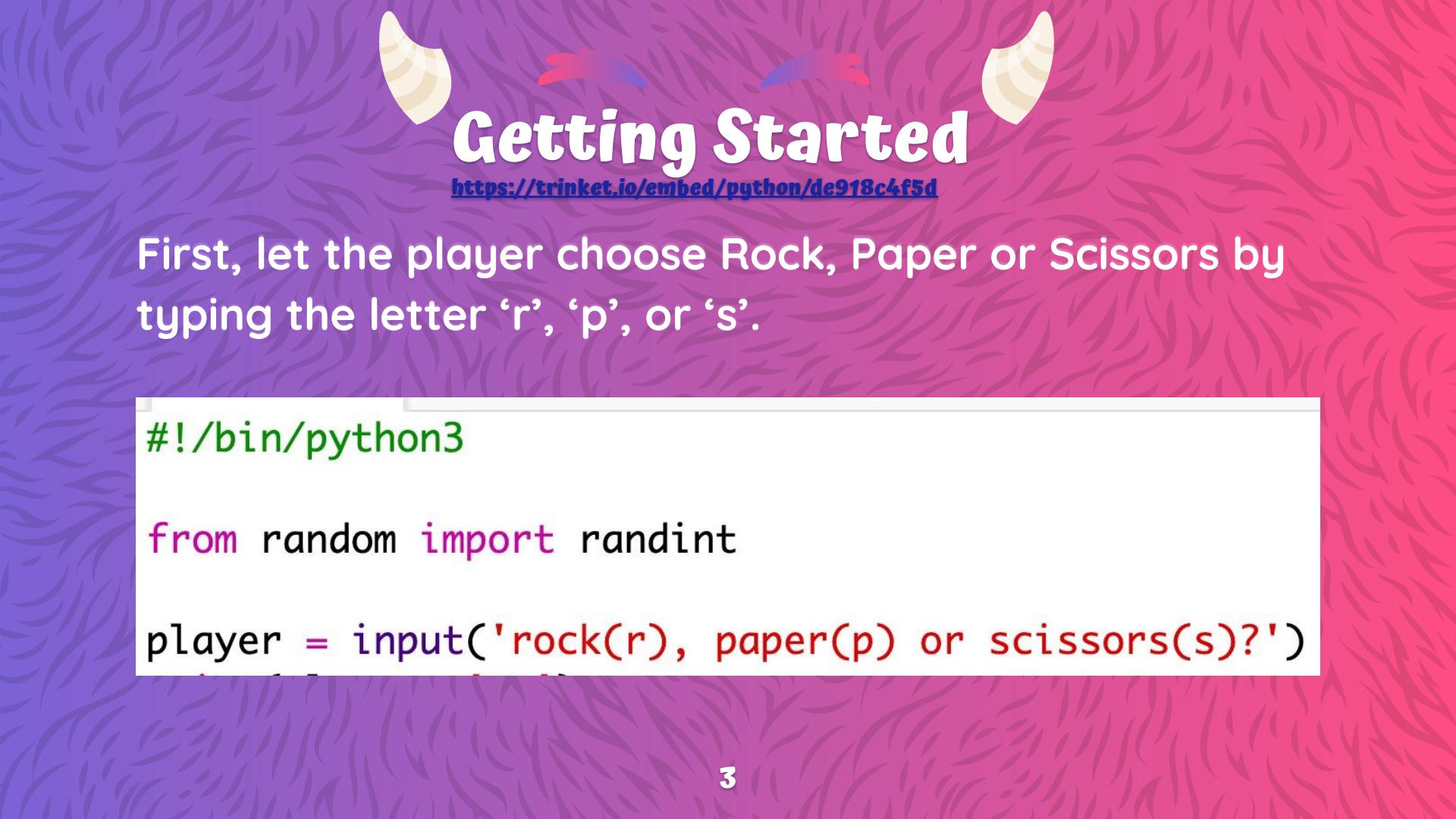
→ Boolean

- 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.

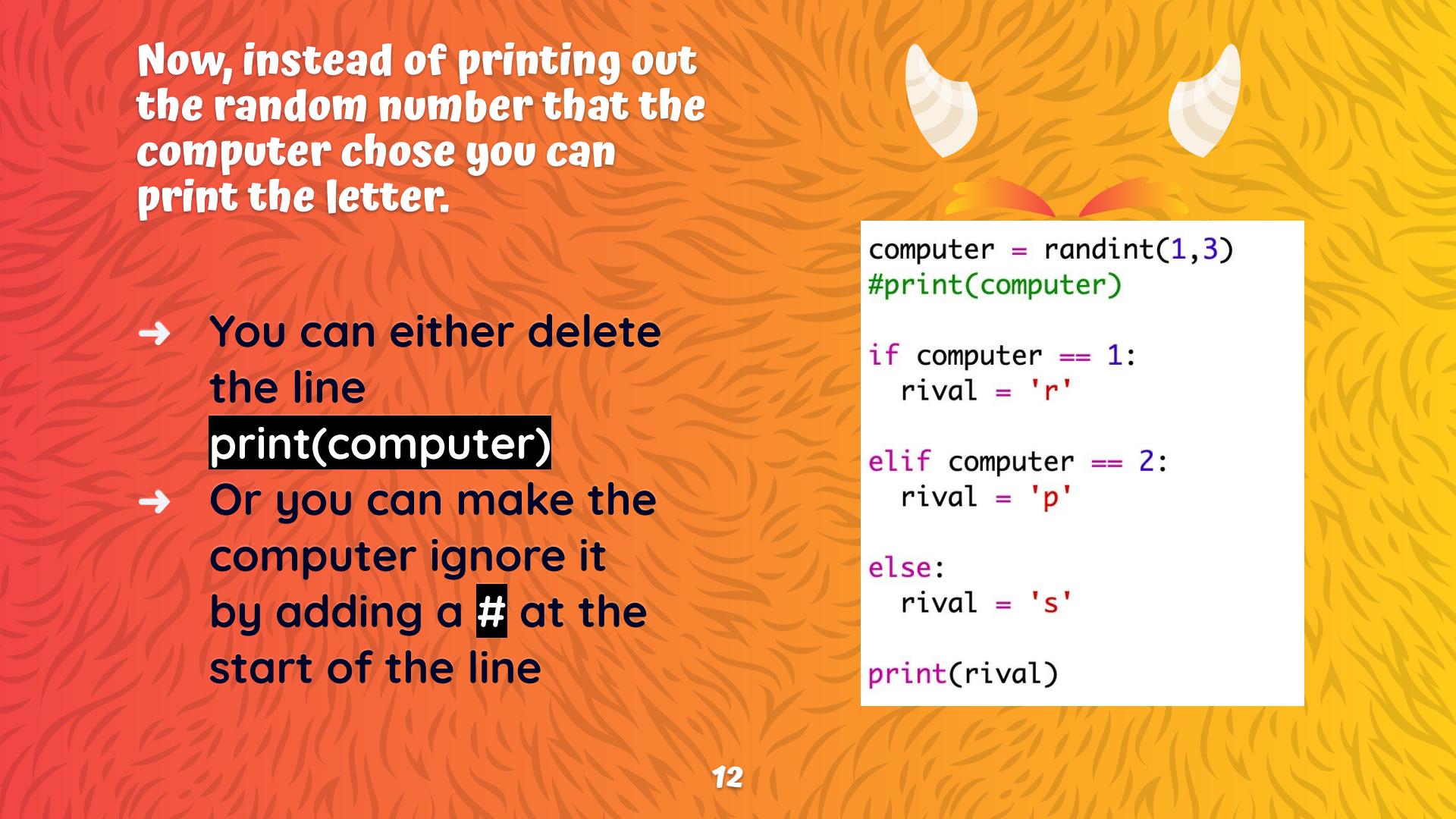
- This time we can just use **else** which means otherwise.

```
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=' ')
```

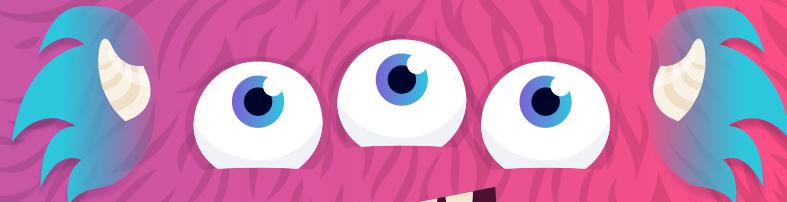


Check the result

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 web interface. At the top, there's a navigation bar with icons for file operations, a key icon labeled "trinket", a "Run" button, a "Modules" dropdown, a "Share" button, and a user profile icon. Below the navigation bar is a code editor window titled "main.py". The code in the editor is:

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

To the right of the code editor is a "Share" dropdown menu. A red arrow points to the "Share" button with the text "1. Select dropdown menu". The dropdown menu is open, showing options: "Email", "Link", "Embed", and "Download". Another red arrow points to the "Download" option with the text "2. Select download".

Goodbye !

