



Quiz

Conditions, Control Flow & Looping



Exercise

1. Write a code to output stars like the following pattern given a variable

```
stars = 5
```

```
  *  
 **  
***  
****  
*****
```

2. Write a code to output all prime numbers given a start variable and end variable

```
start = 1  
end = 50
```

```
Prime numbers between 1 and 50 are:  
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

Exercise

3. We are gonna use athlete dataset participating at Tokyo 2021 Olympics

<https://www.kaggle.com/arjunprasadsarkhel/2021-olympics-in-tokyo>

You may download the CSV [here](#)



HACKTIV8

Exercise

Use what you have learned in today's and also previous session's material to answer the following questions using the downloaded file:

1. Which top 10 countries have the most athletes?
2. What sport has the most participants?
3. How many athletes do countries have on average?
4. How many athletes do Indonesia have?
5. What sport has the least number of participants?
6. Which countries have the least participants?
7. Which sport has the least participants?
8. How many countries have athletes more than Indonesia?



Numpy



HACKTIV8

Excercise

1. Create functions that can output the following using numpy:
 - a. An RGB image with size $N * N$ with random values on each pixel
 - b. An $N \times N \times N$ rubik cube with random values inside each cube
2. Create a numpy function that can split 80% training and 20% testing data given a 2D dimensional records.



Excercise

3. Write a function that utilizes numpy to calculate the following math formula. The code block needs to accept multiple records.

a. Mean Squared Error

$$\text{MSE} = \frac{1}{n} \sum_{i=1}^n (Y_i - \hat{Y}_i)^2$$

b. Mean Absolute Error

$$\text{MAE} = \frac{\sum_{i=1}^n |y_i - x_i|}{n}$$

Excercise

Write codes in numpy to calculate the following. The code block needs to accept multiple records.

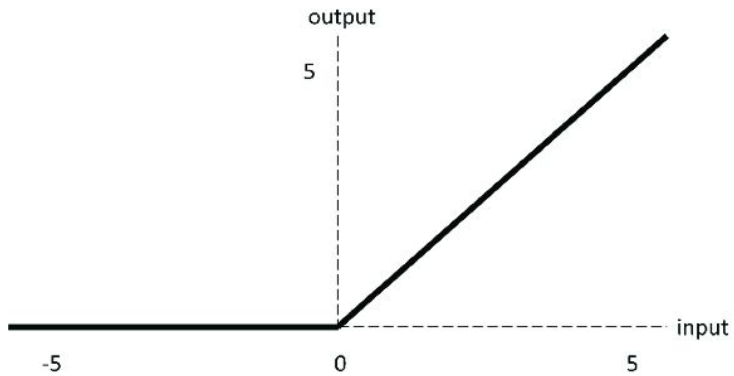
c. Cross Entropy Loss

$$L = -\frac{1}{m} \sum_{i=1}^m (y_i \cdot \log(\hat{y}_i) + (1 - y_i) \cdot \log(1 - \hat{y}_i))$$



Excercise

4. Create a numpy function that outputs the following:





Thank You

PT Hacktivate Teknologi Indonesia

Gedung Aquarius Pondok Indah
Jalan Sultan Iskandar Muda No.7
Kebayoran Lama, Jakarta Selatan

www.hacktiv8.com

