AI 프로그래밍 과제 4주차 과제

? 부분을 채우시오.

numpy 실습

a = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

1. a[1][2]=? 6
2. a.shape=? (3,3)
3. a.size= ? 9

4. np.zeros((4, 2))

```
array([[ 0.,  0.],
       [ 0.,  0.],
       [ 0.,  0.],
       [ 0.,  0.]])
```

5. np.arange(3, 12, 2)

   array([3, 5, 7, 9,11])

```
x = np.array([[1, 2, 3], [4, 5,6]])
y = np.array([[7, 8,9], [10, 11,12]])
```

6. np.concatenate((x, y), axis=1) =? [[1,2,3,7,8,9],[4,5,6,10,11,12]]
7. np.concatenate((x, y), axis=0) = ? [[1,2,3],[4,5,6],[7,8,9],[10,11,12]]
8. np.vstack((x, y)) = ? [[1,2,3],[4,5,6],[7,8,9],[10,11,12]]

a = np.arange(10)

array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])

9. a.reshape(5 2) = ? [[0,1],[2,3],[4,5],[6,7],[8,9]]
10. a.reshape(2, -1) = ? [[0,1,2,3,4],[5,6,7,8,9]]

a = np.array([1, 2, 3, 4, 5, 6,7,8])

11. a.shape ? (8,)

a1 = a[np.newaxis, :]

12. a1=? [[1, 2, 3, 4, 5, 6, 7, 8]]

13 .a1.shape? (1,8)

a2 = a[:, np.newaxis]

14. a2=? [[1],[2],[3],[4],[5],[6],[7],[8]]

15. a2.shape ? (8,1)

ages = np.array([13, 20, 4, 7, 28,29])

16. ages[2:3] ? [4]

17. ages[:4] ? [13,20,4,7]

18. ages[3:] ? [7,28,29]

y=ages>=20

19. y=? [False, True, Talse, False, True, True]

20. ages[ages > 20] = [28, 29]

ages[ages >= 20] = [20, 28, 29]

a = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])
21. a[1, 2] ? 6

a[1, 2] = 12
22. a ?

a = np.array([[1, 2, 3], [4, 5, 12], [7, 8, 9]])
23. a[1:2, 0:1]? [[4]]
24. a[1, :]? [4, 5, 6]
25. a[:, 2]? [3, 6, 9]

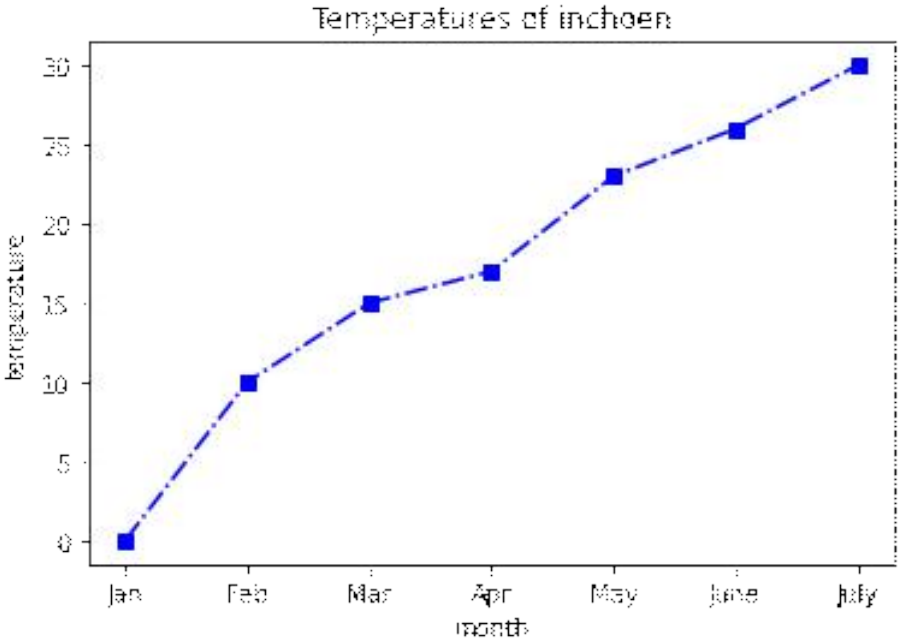
arr = np.array([[1, 2,3], [4, 5,6]])

26.print(arr.T) [[1,4],[2,5],[3,6]]

matplotlib 실습

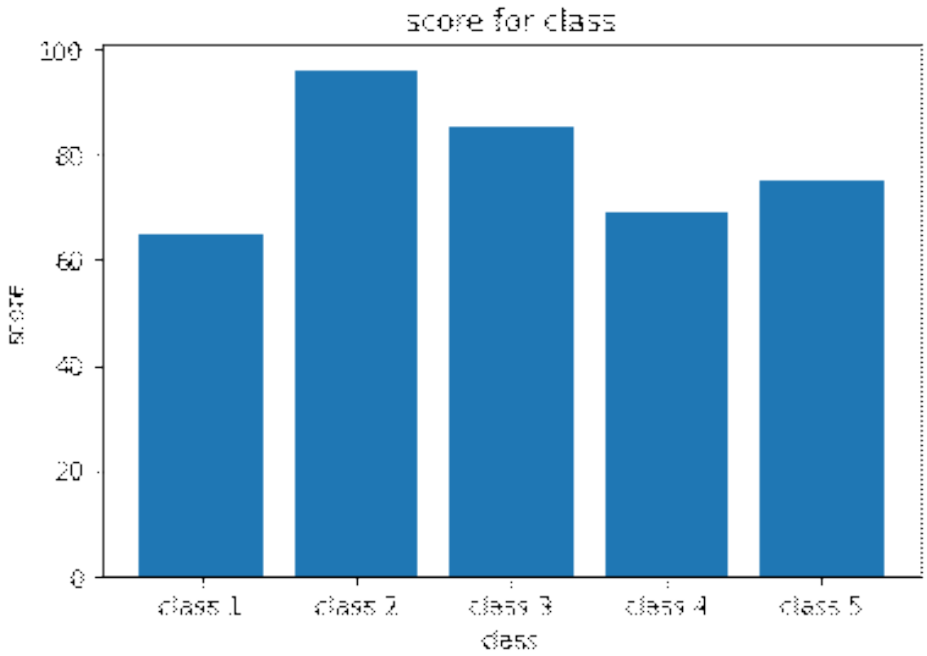
1. 1 월부터 7 월 까지의 평균 온도가 0,10,15,17,23,26,30 일 때

다음과 같은 그래프를 만드는 code 를 작성하시오.




```
import matplotlib.pyplot as plt
X = [ "Jan", "Feb", "Mar", "Apr", "May", "June", "July" ]
Y1 = [0, 10, 15, 17, 23, 26, 30]
plt.plot(X, Y1, "-.sb")
plt.xlabel("month")
plt.ylabel("temperature")
plt.title("Temperatures of Inchoen")
plt.show()
```

2. 1반부터 5반 까지의 평균 점수가 각각 65,96,85,69,75 일 때 다음과 같은 그래프를 만드는 코드를 작성하시오,




```
import matplotlib.pyplot as plt
X = [ "class 1", "class 2", "class 3", "class 4", "class 5"]
Y = [65,96,85,69,75]
plt.xlabel("class")
plt.ylabel("score")
plt.title("score for class")
plt.bar(X, Y)
plt.show()
```