TASK-8

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Q1

```python
1  import numpy as np
2  given_vector = np.array([10,11,12,13,14])
3  msg = f'given vector = {given_vector}'
4  print(msg)
5  final_vector = np.zeros(len(given_vector) +
   (len(given_vector)-1)*5)
6  final_vector[::6] = given_vector
7  fin = f'final vector = {final_vector}'
8  print(fin)
```

Console Shell

```
given vector = [10 11 12 13 14]
final vector = [10.  0.  0.  0.  0.  0. 11.  0.  0.  0.  0.
  0. 12.  0.  0.  0.  0.  0.
 13.  0.  0.  0.  0.  0. 14.]
>
```

Q2

```python
import numpy as np
# the arrays vector1 and vector2 are given some
dummy elements at first
vector1 = np.array([0, 0, 0, 0, 0])
i = 0
print("enter the elements of 1st vector")
while i <= 4:
    vector1[i] = input(": ")
    i +=1

vector2 = np.array([0, 0, 0, 0, 0])
print("enter the elements of 2nd vector")
k = 0
while k <= 4:
    vector2[k] = input(": ")
    k +=1

print(np.allclose(vector1, vector2))
```

Console Shell

```
enter the elements of 1st vector
: 1
: 2
: 5
: 7
: 4
enter the elements of 2nd vector
: 6
: 3
: 4
: 8
: 5
False
>
```

Q3

```python
1  import numpy as np
2  print(0 * np.nan)
3  print(np.nan != np.nan)
4  print(np.inf > np.nan)
5  print(np.nan - np.nan)
6  print(0.3 == 3 * 0.1)
```

Console   Shell

```
nan
True
False
nan
False
>
```

Q4

```python
import numpy as np
import pandas as pd

comment = pd.Series(['have', 'a', 'good', 'day'])
Title = comment.str.title()
print(Title[0], Title[1], Title[2], Title[3])
```

Console Shell

Have A Good Day
›

Q5 : (1)

```python
import numpy as np
array1 = np.array([[1,2,-2], [2,3,4], [5,-6,8]])
array2 = np.array([[3,4,6], [6,-3,8], [2,1,-1]])
print(array1 + array2)
```

```
[[ 4  6  4]
 [ 8  0 12]
 [ 7 -5  7]]
```

Q5 : (7)

```python
import numpy as np
array1 = np.array([1,2,3,4,5,6,12,7,20])
array2 = np.array([3,2,5,4,11,5,0,8,20])
print("the indices where the elements of 2 arrays
match are :")
for i in range(9):
  if array1[i] == array2[i]:
    print(i)


```

Console Shell

```
the indices where the elements of 2 arrays match are :
1
3
8
›
```