Task-3

Question-1

Consider the vector [10, 11, 12, 13, 14], how to build a new vector with 5 consecutive zeros interleaved between each value?

OUTPU T:

```
============= RESTART: C:\Users\P Havirbhavi\OneDrive\Desktop\1.py =============
Original array:
[10 11 12 13 14]
First number :11
Last number : 13

New array:
[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.]
```

Question-2

Consider two random array A and B, check if they are equal

OUTPUT:

```
============= RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/2.py =============
First array:
[1 2 1 1 2]
Second array:
[2 2 1 1 1]
False
```

Question-3

What is the result of the following expression ?

OUTPUT:

```
============= RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/3.py =============
nan
True
False
nan
False
```

Question-4

Convert the first character of each element in a series to uppercase?

OUTPUT:

```
============= RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/4.py =============
Amrita School Of Engineering Chennai Campus
```

Question-5

1. Multiplying a matrix

OUTPUT:

```
============= RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/5 3.py ============
Matrix A is:
 [[10  2 35]
 [ 4 57 69]]
Matrix B is:
 [[2 4 6]
 [8 9 0]
 [3 2 1]]
Matrix multiplication of matrix A and B is:
 [[141 128  95]
 [671 667  93]]
```

2. Identity Matrix

OUTPUT:

```
============ RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/5.py ============
Matrix b :
 [[1. 0.]
 [0. 1.]]

Matrix a :
 [[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]
```

3. Array datatype conversion

OUTPUT:

```
============ RESTART: C:/Users/P Havirbhavi/OneDrive/Desktop/5 2.py ============
int32
```