WEEK-8:

Course Name: PSP LAB **Section: CSE5**

Date of Execution:08-02-2023

1. Program to demonstrate different ways to create arrays

```
## An array is a collection of items stored at contiguous memory locations. In
 ↪Python a list (Dynamic Array treated as an array
## ways to create arrays
a = []              #creates and empty list
print("Empty array    : ", a)
b = [0] * 10        #create a 1D array with size 10 and initializes with 0

print("\n1D array       : ",b)
c = [None] * 10     #create a 1D array with size 10 and initializes with None
print("\nArray with None: ", c)

#creates a 2D (4x3) array with 3 columns and 4 rows and initializes the
 ↪elements with 1
d = [[1] * 3] * 4

##direct dispaly
print("\n2D array       : ", d)

#printing the matrix with loops
print("2D array displayed with loops:")
for i in range(len(d)):
    for j in range(len(d[0])):
        print(d[i][j], end=" ")
    print()

#creates an arrray and initializes with the i value
arr = []                    #create an empty list - 1D
for i in range(10):
    arr.append(i)          #append i value in each iteration
print("\nArray created with append(): ", a)

## creating arrays with iterator
a1 = [0 for i in range(10)]      #create 1D array and initialize each element
 ↪with 0
print("\n1D array created with iterator with 0 values: ",a1)

a2 = [None for i in range(10)]  #create 1D array and initialize each element
 ↪with None
print("\n1D array created with iterator with None: ",a2)
```

OUTPUT:

```
Empty array    :  []

1D array       :  [0, 0, 0, 0, 0, 0, 0, 0, 0, 0]

Array with None:  [None, None, None, None, None, None, None, None, None, None]

2D array       :  [[1, 1, 1], [1, 1, 1], [1, 1, 1], [1, 1, 1]]
2D array displayed with loops:
1 1 1
1 1 1
1 1 1
1 1 1

Array created with append():  []

1D array created with iterator with 0 values:  [0, 0, 0, 0, 0, 0, 0, 0, 0, 0]

1D array created with iterator with None:  [None, None, None, None, None, None,
None, None, None, None]
```

2. Write a program to perform Matrix Addition
3. Write a program to perform Matrix multiplication
4. Write a program to find Transpose of the given matrix.
5. Write a Python program to find the largest number from a given list of elements without using max function.
6. Write a program to perform linear search.
7. Write a python program to perform binary search
8. Write a python program to check Armstrong numbers in a certain interval i.e. 1 to 2000
9. Write a Program to demonstrate Dictionary Accumulation
10. Write a Program that builds a dictionary of months of a year,and prints the days in a month for the month name given as input