

Assignment 3

Problem 1

```
In [10]: try:
          5/0
        except ZeroDivisionError:
          print("Zero Division Error")
        except e:
          print("Exception occurred")
```

Zero Division Error

```
In [11]: def compute(num):
          try:
            num/0
          except:
            print("Number divide by zero")
```

```
In [12]: compute(5)
```

Number divide by zero

Problem 2

```
In [14]: subjects=["Americans","Indians"]
          verbs=["play","watch"]
          objects=["Baseball","Cricket"]

          for sub in subjects:
            for verb in verbs:
              for obj in objects:
                print(f'{sub} {verb} {obj}')
```

Americans play Baseball
Americans play Cricket
Americans watch Baseball
Americans watch Cricket
Indians play Baseball
Indians play Cricket
Indians watch Baseball
Indians watch Cricket

Problem 3

```
In [16]: import numpy as np

          def generateVanderMatrix(vector, n, increasing=False):

            if not increasing:
              op_matx = np.array([x**(n-1-i) for x in vector for i in range(n)]).reshape(vector.size,n)
            elif increasing:
              op_matx = np.array([x**i for x in vector for i in range(n)]).reshape(vector.size,n)

            return op_matx

          print("-----OUTPUT-----\n")

          input_data = np.array([1,2,3,4,5])
          no_col_opmat = 3
          op_matx_dec_order = generateVanderMatrix(input_data,no_col_opmat,False)
          op_matx_inc_order = generateVanderMatrix(input_data,no_col_opmat,True)

          print("The input array is:",input_data,"\n")
          print("Number of columns in output matrix should be:",no_col_opmat,"\n")
          print("Vander matrix of the input array in decreasing order of powers:\n\n",op_matx_dec_order,"\n")
          print("Vander matrix of the input array in increasing order of powers:\n\n",op_matx_inc_order,"\n")
```

-----OUTPUT-----

The input array is: [1 2 3 4 5]

Number of columns in output matrix should be: 3

Vander matrix of the input array in decreasing order of powers:

```
[[ 1  1  1]
 [ 4  2  1]
 [ 9  3  1]
 [16  4  1]
 [25  5  1]]
```

Vander matrix of the input array in increasing order of powers:

```
[[ 1  1  1]
 [ 1  2  4]
 [ 1  3  9]
 [ 1  4 16]
 [ 1  5 25]]
```

