Task 1:

Write a function to compute 5/0 and use try/except to catch the exceptions.

In [4]:

```
def  computeDivideZero():
    try:
        val = 5/0
    except ZeroDivisionError as ze:
        print("Caught exception with text:",ze)
    else:
        print("Will not reach here")
    finally:
        print("Finally will execute")

computeDivideZero()
```

```
Caught exception with text: division by zero
Will execute
```

Implement a Python program to generate all sentences where subject is in ["Americans","Indians"] and verb is in ["Play", "watch"] and the object is in ["Baseball","cricket"]. Hint: Subject,Verb and Object should be declared in the program as shown below. subjects=["Americans ","Indians"] verbs=["play","watch"] objects=["Baseball","Cricket"]

In [19]:

```
subject = ["Americans","Indians"]
verb = ["Play", "watch"]
Object = ["Baseball","cricket"]

for eachSVO in ["{} {} {}".format(i,j,k) for i in subject for j in verb for k in
    print(eachSVO)
```

```
Americans Play Baseball
Americans Play cricket
Americans watch Baseball
Americans watch cricket
Indians Play Baseball
Indians Play cricket
Indians watch Baseball
Indians watch cricket
```

Task 2:

Write a function so that the columns of the output matrix are powers of the input vector. The order of the powers is determined by the increasing boolean argument. Specifically, when increasing is False, the i-th output column is the input vector raised element-wise to the power of N - i - 1.

HINT: Such a matrix with a geometric progression in each row is named for Alexandre-Theophile Vandermonde.

In [87]:

```
import numpy as np
from pandas import DataFrame
```

In [94]:

```
x = [1,2,3,4,5,6]
y = [23,4,56456,547,75,67567]
z = [1,4543,652,654,61,61,5]
increase = False

def matrixify(r, c, lst):
    mat = []
    for i in range(r):
        rowList = []
        for j in range(c):
            rowList.append(lst[r * i + j])
        mat.append(rowList)
    return mat


def alexVanderGP(x,increase):
    if increase == True:
        lst = [i**j for i in x for j in range(0,len(x))]
    else:
        lst =  [i**(len(x)-j) for i in x for j in range(1,len(x)+1)]
    return matrixify(len(x),len(x),lst)


print("-"*10,"Increasing is False","-"*10)
alexVanderGP(x,False)
print("-"*10,"Increasing is True","-"*10)
print(alexVanderGP(x,True))
print()
print("-"*10,"Increasing is False","-"*10)
print(alexVanderGP(y,False))
print("-"*10,"Increasing is True","-"*10)
print(alexVanderGP(y,True))
print()
print("-"*10,"Increasing is False","-"*10)
print(alexVanderGP(z,False))
print("-"*10,"Increasing is True","-"*10)
print(alexVanderGP(z,True))
```

```
---------- Increasing is False ----------
---------- Increasing is True ----------
[[1, 1, 1, 1, 1, 1], [1, 2, 4, 8, 16, 32], [1, 3, 9, 27, 81, 243], [1, 4, 16,
64, 256, 1024], [1, 5, 25, 125, 625, 3125], [1, 6, 36, 216, 1296, 7776]]

---------- Increasing is False ----------
[[6436343, 279841, 12167, 529, 23, 1], [1024, 256, 64, 16, 4, 1], [5735225814
10012432203776, 10158753390428164096, 179941076066816, 3187279936, 56456, 1],
[48970736047507, 89526025681, 163667323, 299209, 547, 1], [2373046875, 316406
25, 421875, 5625, 75, 1], [1408228672419222790962607, 20841959424263661121, 3
08463590573263, 4565299489, 67567, 1]]
---------- Increasing is True ----------
[[1, 23, 529, 12167, 279841, 6436343], [1, 4, 16, 64, 256, 1024], [1, 56456,
3187279936, 179941076066816, 10158753390428164096, 573522581410012432203776],
[1, 547, 299209, 163667323, 89526025681, 48970736047507], [1, 75, 5625, 42187
5, 31640625, 2373046875], [1, 67567, 4565299489, 308463590573263, 20841959424
263661121, 14082286724192222790962607]]

---------- Increasing is False ----------
[[1, 1, 1, 1, 1, 1, 1], [8791367214881353074049, 1935145765987530943, 4259620
88044801, 93762291007, 20638849, 4543, 1], [76821993791524864, 11782514385203
2, 180713410816, 277167808, 425104, 652, 1], [78246782771397696, 119643398733
024, 182940976656, 279726264, 427716, 654, 1], [51520374361, 844596301, 13845
841, 226981, 3721, 61, 1], [51520374361, 844596301, 13845841, 226981, 3721, 6
1, 1], [15625, 3125, 625, 125, 25, 5, 1]]
---------- Increasing is True ----------
[[1, 1, 1, 1, 1, 1, 1], [1, 4543, 20638849, 93762291007, 425962088044801, 193
5145765987530943, 8791367214881353074049], [1, 652, 425104, 277167808, 180713
410816, 117825143852032, 76821993791524864], [1, 654, 427716, 279726264, 1829
40976656, 119643398733024, 78246782771397696], [1, 61, 3721, 226981, 1384584
1, 844596301, 51520374361], [1, 61, 3721, 226981, 13845841, 844596301, 515203
74361], [1, 5, 25, 125, 625, 3125, 15625]]
```

In [75]:

```
[[1, 2], [3, 4]]
```

In [ ]: