Practice exercises: Week 9 (Exceptions)

1. Define a subprogram **sum2(a, b)** that returns the sum of a and b provided user inputs are digits only. Otherwise display those input errors by using Python's exception coding techniques. The sample run is here:

```
# main program of question(1)
print(sum2(x,y))
```

```
>>> %Run prac1.py

 x?3
 y?6
 9.0

>>> %Run prac1.py

 x?
 y?asdfadsf
 input error
 None
```

2. Rewrite the above program with user defined message **"input error"** if the input is not a number/digit and prompts the user to enter input again. The error message must be displayed until user input is correct in order to print the sum of a and b, then the program ends. The sample run is here:

```
>>> %Run prac1.py

 x?a
 y?
 input error
 x?6
 y?afadsf
 input error
 x?5
 y?8
 13.0
```

3. Write a sub program **divide(x,y)** that performs the division operation where x and y must be float data type. if the user input for y is 0 then it must be caught by Python's Error class **"Division by Zero"**. Similarly, if the user input is not converted by float for division, then display an error message " *Can't convert the input value into float*". [Hint: try-except→ ValueError structure]. The sample run is here:

```
>>> %Run prac2.py
  Input divisor:6
  Input dividend:a
  Can't convert input value to float!
>>> %Run prac2.py
  Input divisor:a
  Can't convert input value to float!
>>> %Run prac2.py
  Input divisor:9
  Input dividend:0
  division by zero!
>>> %Run prac2.py
  Input divisor:9
  Input dividend:3
  result is 3.0
```

4. Define a subprogram **ReadDataFile(filename)**, where file name is an argument. It should display an error message "**Can't find file**" if the file does not exist. Else ,the print the details stored in that file. Define custom exception to perform this [Slides 6-9]. The sample run is here:

```
>>> %Run prac3.py
  Please input file name to open.LibRec
  Can't find file.
>>> %Run prac3.py
  Please input file name to open.LibRec.txt
  Vivian  210001  21/10/2002
  Nancy   210002  7/8/2003
  Wilson  210003  27/2/2003
  James   210004  8/3/2004
  Bruce   210005  28/10/2002
```