13. ERRORS AND EXCEPTIONS

1.Program to handle simple run time errors.

```
a=[1,2,3]
try:
        print("second element is %d"%a[1])
        print("fourth element is %d "%a[3])
except:
        print("an error occurred")
```

Output:

```
second element is 2
an error occurred
```

2.Program to handle multiple errors.

```
def fun(a):
  if(a<4):
        b=a/(a-3)
        print("value of b=",b)
try:
  a=float(input("Enter the number"))
  fun1(a)
except ZeroDivisionError:
  print("zero division error occurred")
except NameError:
  print("name error has occurred")
except ValueError:
  print("value error has occurred")
finally:
  print("this is always executed")
```

Output:

Run1:

```
Enter the number 3
zero division error occurred
this is always executed
```

Run2:

```
Enter the number 3.5
value of b= 7.0
this is always executed
```

Run3:

```
Enter the number a
value error has occurred
this is always executed
```

3.Program to raise an exception

```
def divide(x,y):
  try:
      result=x/y
  except TypeError:
      print("Type error has occurred")
  except NameError:
      print("Type error has occurred")
  except ZeroDivisionError:
      print("divide by zero has occurred")
  else:
      print("the result is",result)
  finally:
      print("final clause executed")
divide(5,0)
divide(100,10)
divide(4,"a")
divid(4,2)
```

Output:

```
divide by zero has occurred
final clause executed
the result is 10.0
final clause executed
Type error has occurred
final clause executed

Traceback (most recent call last):
File "C:\Users\cse-11\PycharmProjects\first-project\main.py", line 17, in <module>divid(4,2)
NameError: name 'divid' is not defined. Did you mean: 'divide'?
```