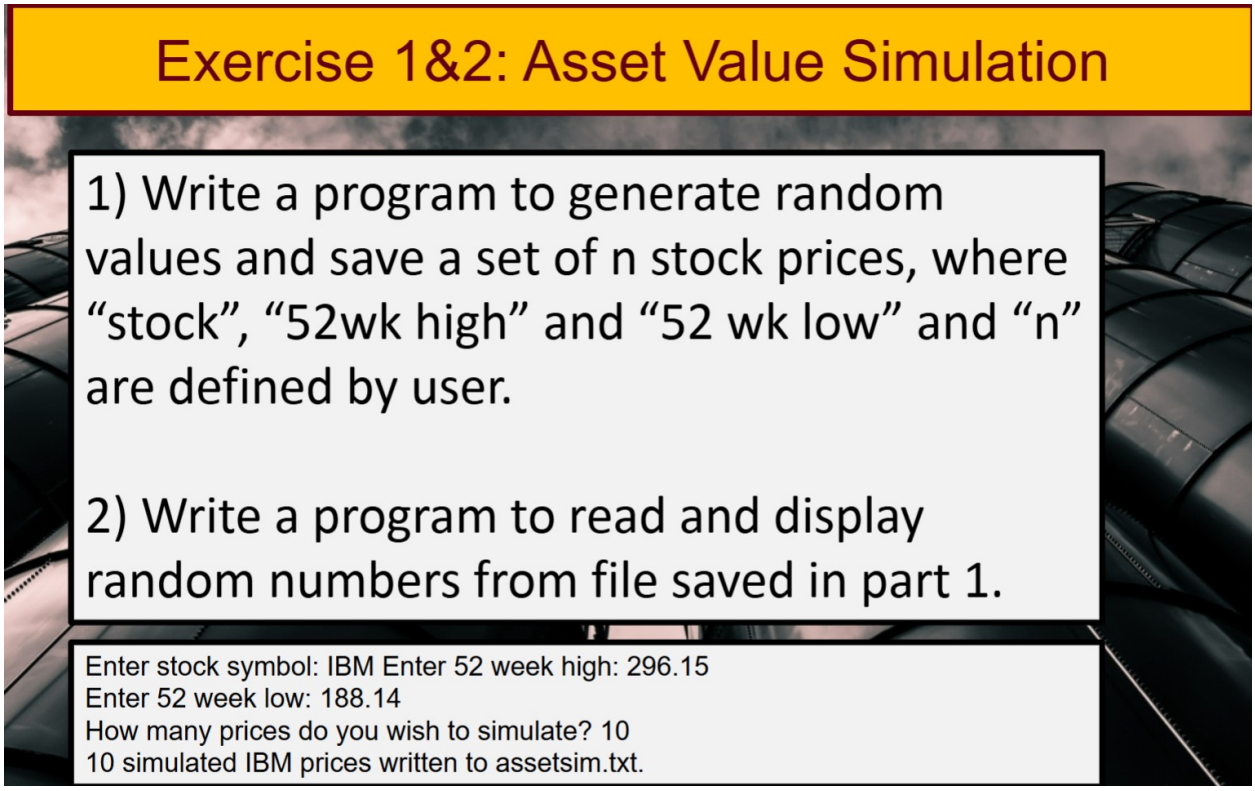
Class 6 - July 24th Notes

Slide 6




```
import random as rnd

cprob=.25
tprob=.12
nprob=.11
wprob=.09

c=0
t=0
n=0
w=0

x=int(input("Enter the number of simulations you wish to run: "))

for count in range(x):
    rand=rnd.random()
    if rand <= (cprob):
        c+=1
    elif rand <= (cprob+tprob):
```

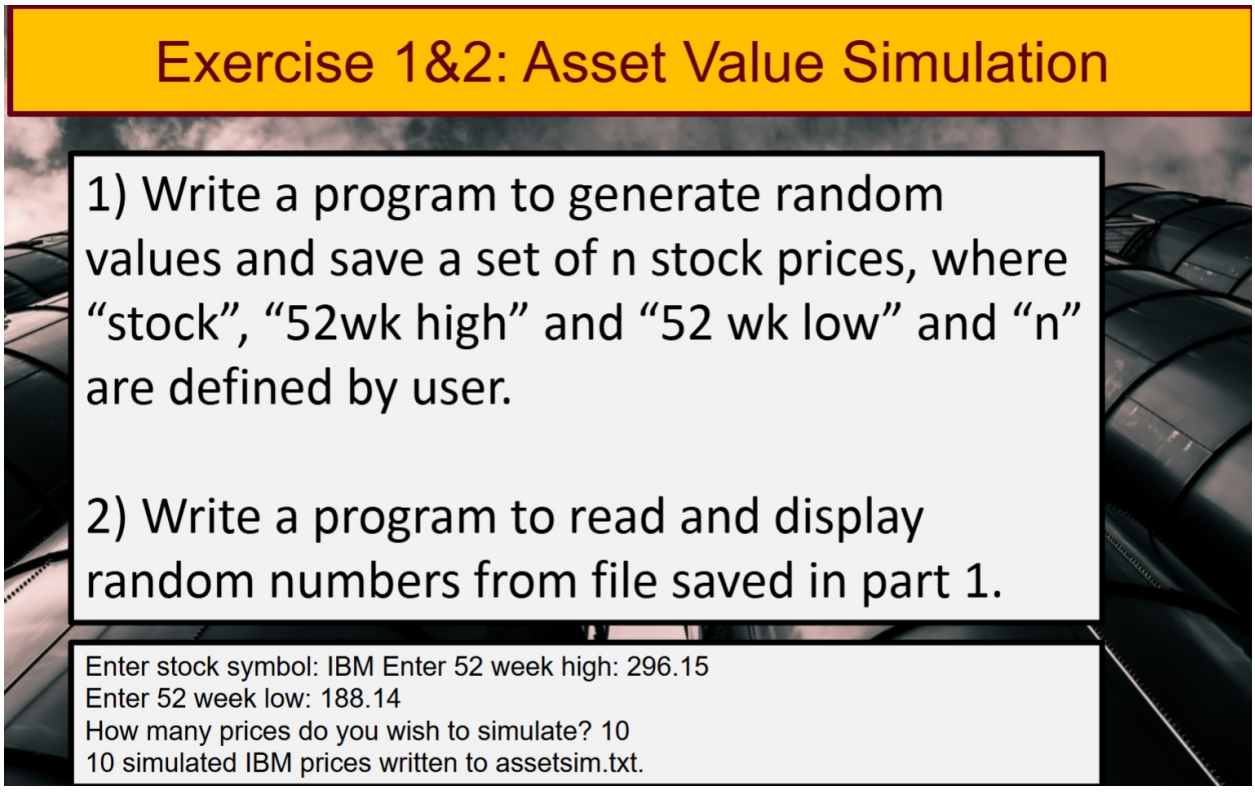
```
        t+=1
    elif rand <= (cprob+tprob+nprob):
        n+=1
    elif rand <=(cprob+tprob+nprob+wprob):
        w+=1

print("\n\nIn your simultion:")
print("\nThe Celtics won {0:1,d} times.".format(c))
print("The Thunder won {0:1,d} times.".format(t))
print("The Nuggets won {0:1,d} times.".format(n))
print("The Wolves won {0:1,d} times.".format(w))
```

```
In your simultion:

The Celtics won 9 times.
The Thunder won 5 times.
The Nuggets won 5 times.
The Wolves won 6 times.
```

Slide 19




```
import random as rnd
```

```
def input_fun():
    name = input("Enter the name of the stock: ")
    high = float(input("Enter 52 week high: "))
    low = float(input("Enter 52 week low: "))
    sim = int(input("How many times do you wish to simulate: "))

    file = open("Ex1n2.txt", 'w')

    for i in range(sim):
        price = rnd.uniform(low, high)
        file.write(str(price) + '\n')

    file.close()
    print('{} simulated IBM prices written to Ex1n2.txt'.format(sim))

def read_fun():
    file1 = open('Ex1n2.txt', 'r')

    while True:
        price = file1.readline()
        if (price!=""):
            print(float(price))
        else:
            break
    file1.close()

def main():
    input_fun()
    read_fun()

main()
```

```
20 simulated IBM prices written to Ex1n2.txt
129.0775696315417
140.40322810873135
112.33594206738995
102.06358392264391
135.16091936530566
128.26586958430715
144.34520140153822
122.22199968888549
112.35141200521421
130.61588698992037
141.0203292244378
123.61776889097841
147.61475064357035
111.65653725213276
110.26237760682972
148.44083160027282
129.44108904847883
```

```
145.79560571477373
131.42568612713717
132.87969723145991
```

Practise

```
###Open a new file
x = open('fame.csv', 'w')

###write two or three lines of data
x.write("string")

###Close file
x.close()

###Open,read,assign to object, close, print
file_name = open('fame.csv', 'r')

var = file_name.read()

file_name.close()

print(var)
```

```
string
```

```
#Write New File
new_file = open('New File.csv', 'w')
x="Sioux Falls Population"+'\n'
y="176888\n"
new_file.write(x)
new_file.write(y)
new_file.write("a new line\n")
new_file.close()

# Open the new file
in_file= open('New File.csv','r')
contents = in_file.read()
in_file.close()
print(contents)
print(type(contents))
```

```
Sioux Falls Population
176888
a new line

<class 'str'>
```

```
s = 'rohil'
print(s[0])
```

```
r
```

```
###Write a file with a for loop
def main():

    # Get the number of days.
    num_days = int(input('For how many days do you have sales? '))
    # Open a new file named sales.txt.
    sales_file = open('sales.txt', 'w')

    # Get the amount of sales for each day and write
    # it to the file.
    for count in range(1, num_days + 1):
     # Get the sales for a day.
        sales = float(input('Enter the sales for day #' + str(count) +
': '))

     # Write the sales amount to the file.
        sales_file.write(str(sales) + '\n')

     # Close the file.
    sales_file.close()
    print('Data written to sales.txt.')

main()
```

```
Data written to sales.txt.
```

```
def main():
    # Open the sales.txt file for reading.
    sales_file = open('sales.txt', 'r')

# Read all the lines from the file.
    line= sales_file.readline()
    while line!= '':
    # Convert line to a float.
        amount = float(line)
        # Format and display the amount.
        print(format(amount, '.2f'))
        line=sales_file.readline()
   # Close the file.
    sales_file.close()

# Call the main function.
main()
```

```
33.00
44.00
```

```
55.00
66.00
77.00
88.00
99.00
12.00
13.00
14.00
```

```
def main():
    # Open the sales.txt file for reading.
    sales_file = open('sales.txt', 'r')

# Read all the lines from the file.
    # line= sales_file.readline()
    while True:
    # Convert line to a float.
        line=sales_file.readline()
        if(line!=""):
            amount = float(line)
            # Format and display the amount.
            print(format(amount, '.2f'))
        else:
            break
    sales_file.close()

# Call the main function.
main()
```

```
33.00
44.00
55.00
66.00
77.00
88.00
99.00
12.00
13.00
14.00
```

Practise

```
import pandas as pd

df = pd.read_csv("FiveK.csv")
df.head()
```

```
  Event  Year         Registered  Gender  Event Age    Zip  \
0  TC5K  2015  2/4/2015 11:38 PM  Female         43  55379
1  TC5K  2015   2/4/2015 9:58 PM  Female         61  55104
2  TC5K  2015   2/4/2015 1:16 PM  Female         24  55128
3  TC5K  2015   2/3/2015 8:25 PM  Female         32  55431
4  TC5K  2015   2/3/2015 8:01 PM  Female         29  55068

  Estimated Finish Time  \
0              00:00:00
1              00:00:00
2              00:00:00
3              00:00:00
4              00:00:00

  Would you like to upgrade to the VIP Experience for the Red, White &
Boom TC 5K?  \
0                                                   NaN

1                                                   NaN

2                                                   NaN

3                                                   NaN

4                                                   NaN


                          Interested in Volunteering  \
0                                       No Thank You
1                                       No Thank You
2                                       No Thank You
3  Yes- I would like to be informed of volunteer ...
4                                       No Thank You

   Number of Dependents 18 and Younger Living with You  \
0                                                 0.0
1                                                 NaN
2                                                 0.0
3                                                 1.0
4                                                 NaN

      How did you hear about us? How did you hear about us?  Other  \
0                  Friend/Family                                 NaN
1              TCM Website/Email                                 NaN
2                  Friend/Family                                 NaN
3                  Friend/Family                                 NaN
4  Facebook/Twitter/Social Media                                 NaN

                  Occupation Highest Level of Education  \
0                    Student           Technical/2 Year
1                        NaN                        NaN
```

```
2  Health Related Occupation       Undergraduate Degree
3                      Other       Undergraduate Degree
4                        NaN                        NaN

  Annual Household Income  \
0         $20 001-$30 000
1                     NaN
2         $30 001-$40 000
3                     NaN
4                     NaN

  I would like to Sponsor a Child for an additional $10.00
0                                                  NaN
1                                                  NaN
2                                                  NaN
3                                                  NaN
4                                                  NaN

df.describe()

               Year  Event Age           Zip  \
count   344.000000  344.00000    344.000000
mean   2016.104651   39.81686  55303.697674
std       0.829894   12.94454    282.950307
min    2015.000000    8.00000  54011.000000
25%    2015.000000   31.00000  55116.750000
50%    2016.000000   39.00000  55344.000000
75%    2017.000000   50.00000  55420.250000
max    2017.000000   73.00000  57013.000000

       Number of Dependents 18 and Younger Living with You
count                                         217.000000
mean                                            0.626728
std                                             0.964089
min                                             0.000000
25%                                             0.000000
50%                                             0.000000
75%                                             1.000000
max                                             5.000000
```