FP5.0 Module-1 Assignments

Batch Name:	**Infosys FP5.0 Summer Internship 2018**
Enrollment No:	**R110215062**
SAP ID:	**500044606**
NAME:	**Kanwaljit Singh**
Semester:	**VI**
Branch:	**CSE CCVT**

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SAP ID – 500044606, Roll - 62
CCVT – 6th SEM

Submitted To: Mr. Deepak Kumar Sharma
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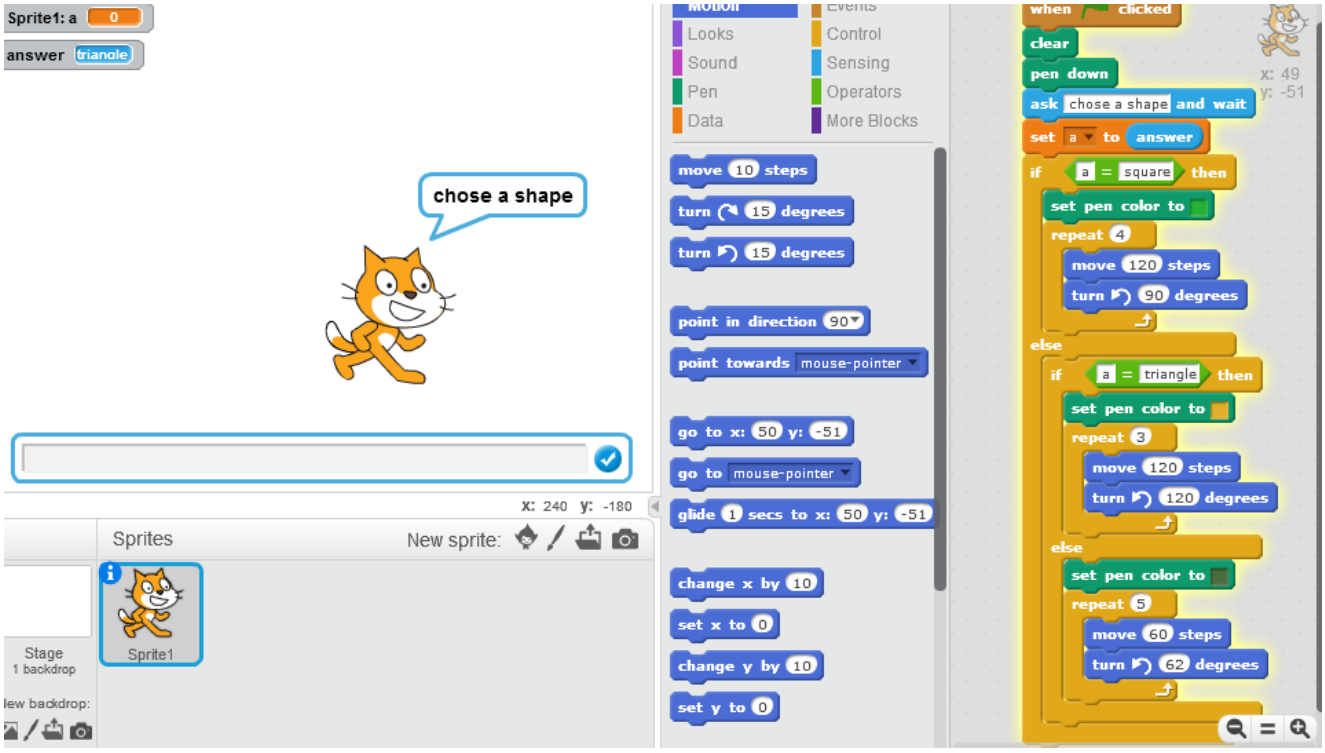
Assignment-1

1.Take a text input from the user as one of the three shape names – "square", "triangle" or "pentagon". Based on
the input, draw either a red square, yellow triangle or black pentagon.



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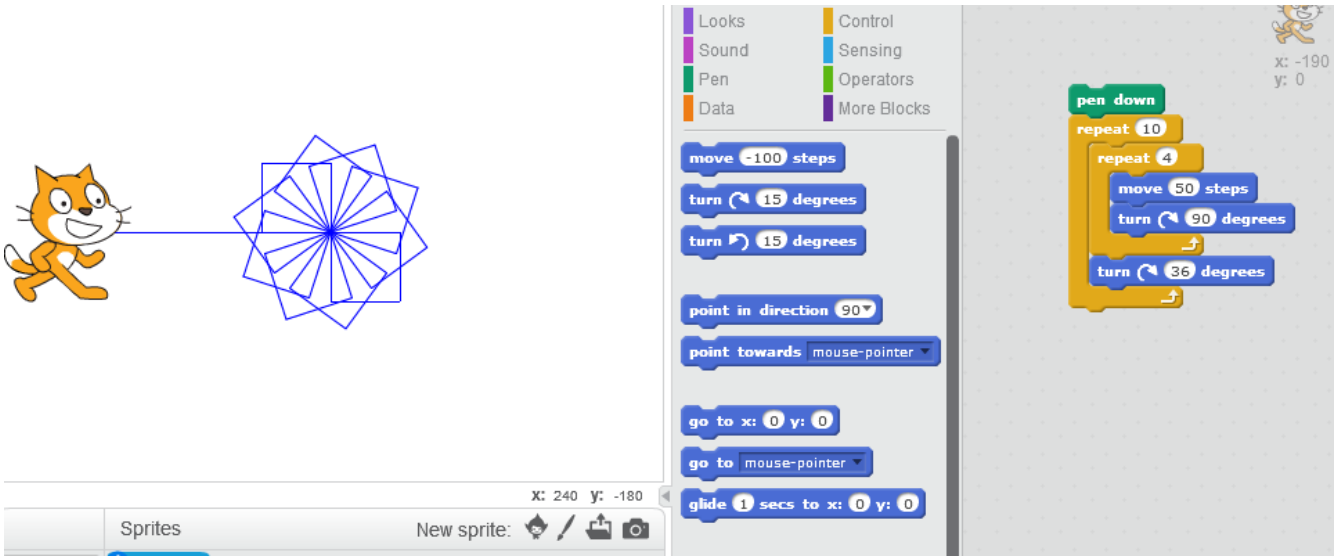
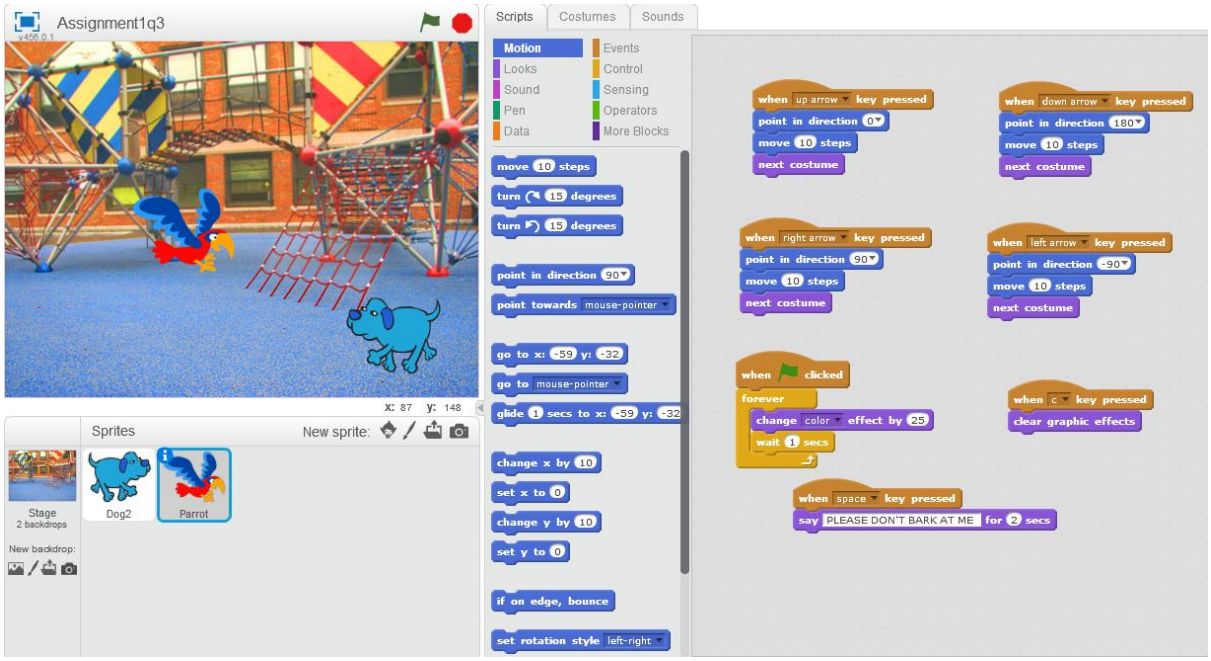
2. Create the following pattern using Scratch.
Create 10 squares each with an inclination of 36 degrees from the preceding square.



3.Create or import two Sprites and use your imagination to make them do different actions simultaneously. For
example: "A bird is flying and a dog is walking at the same time."



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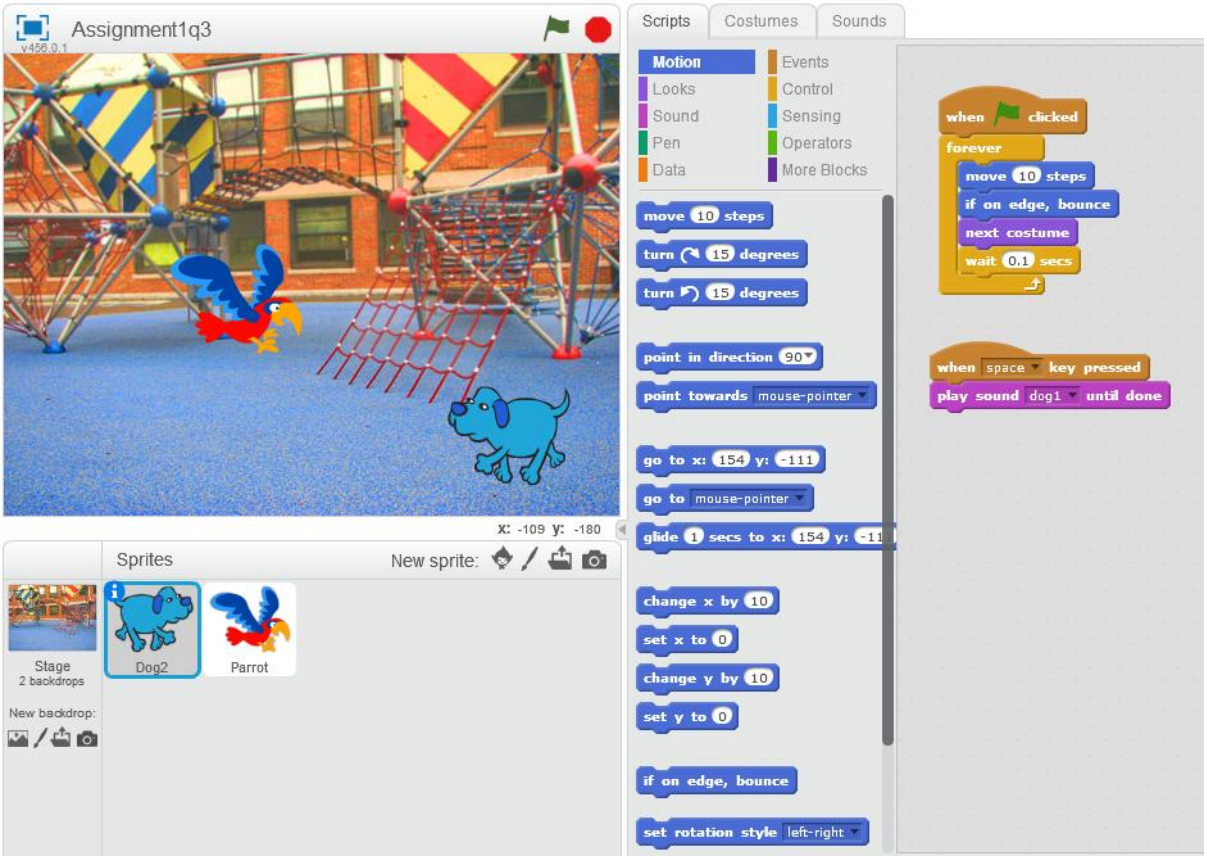
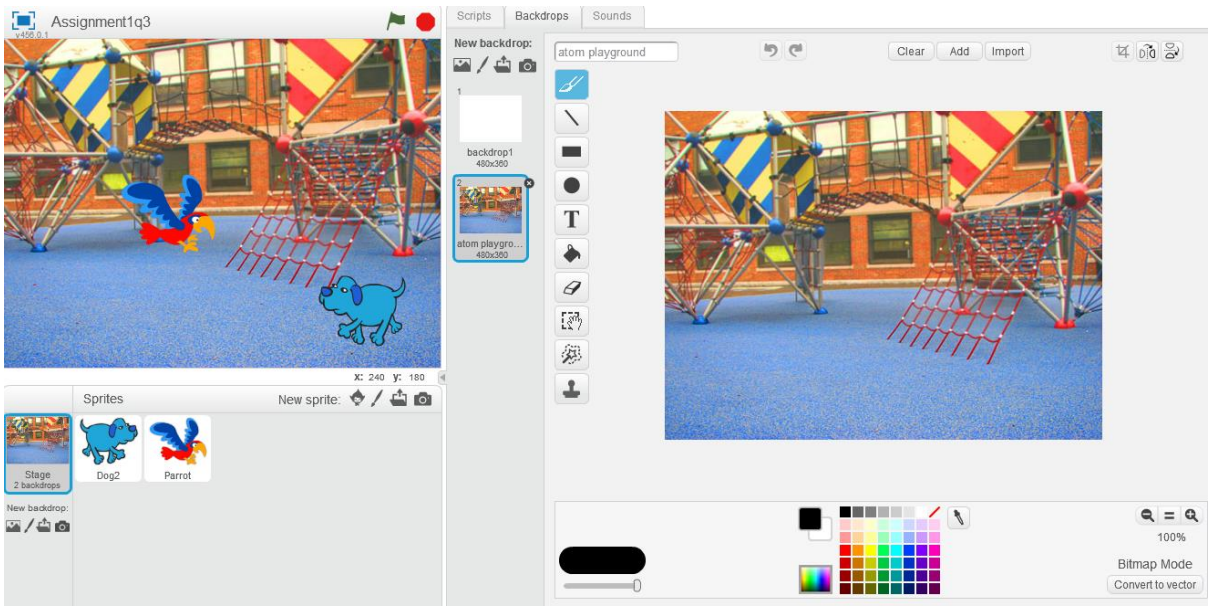
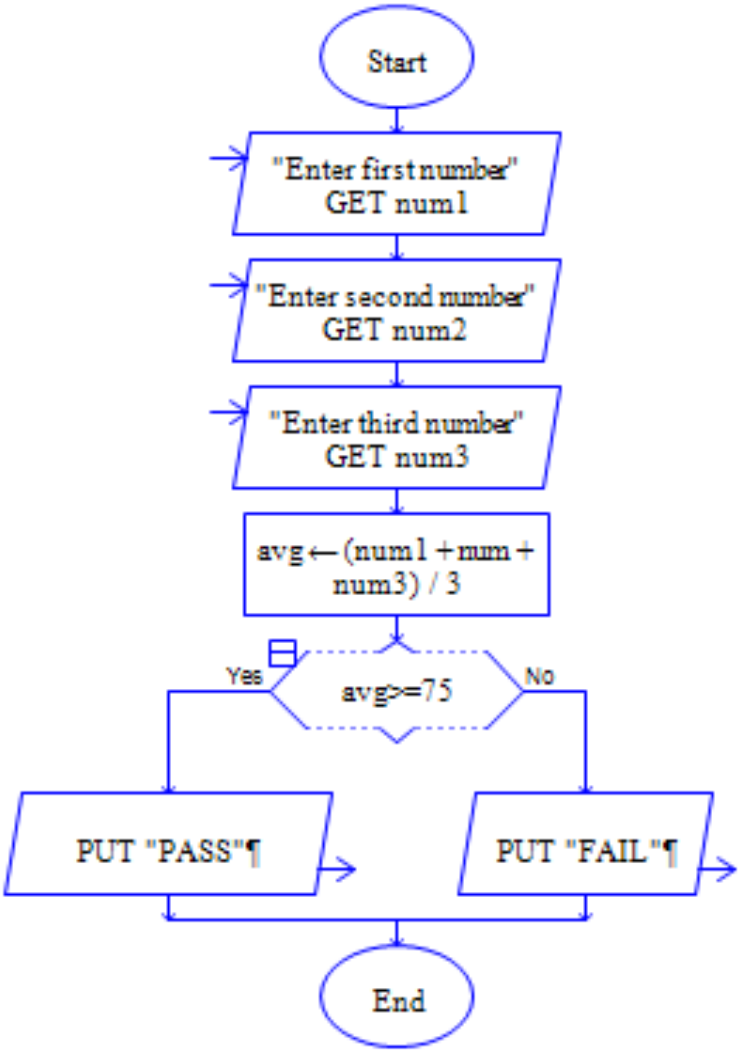




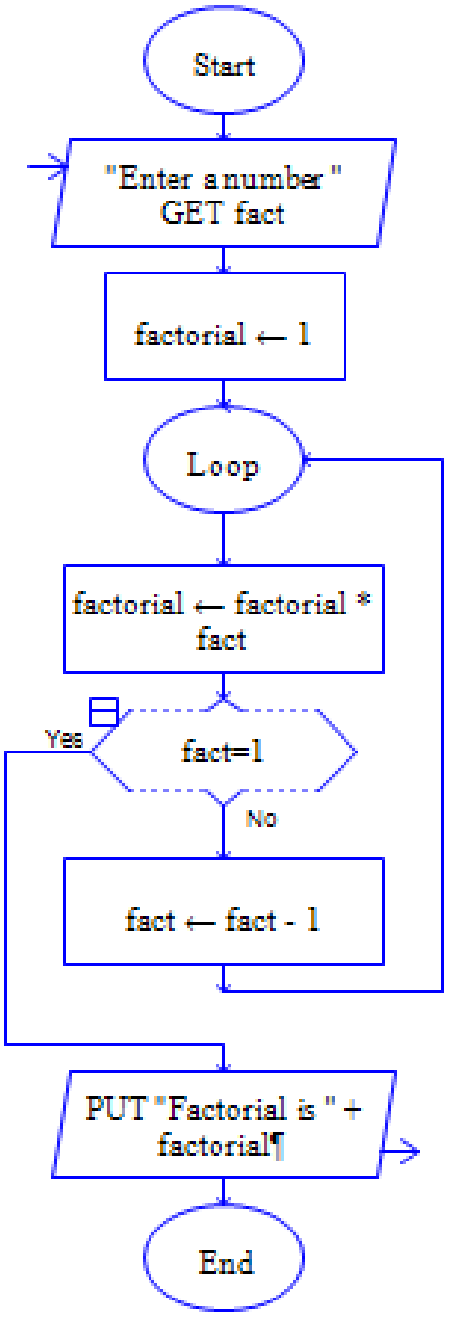
ASSIGNMENT-2

Create flowcharts for the following problems:

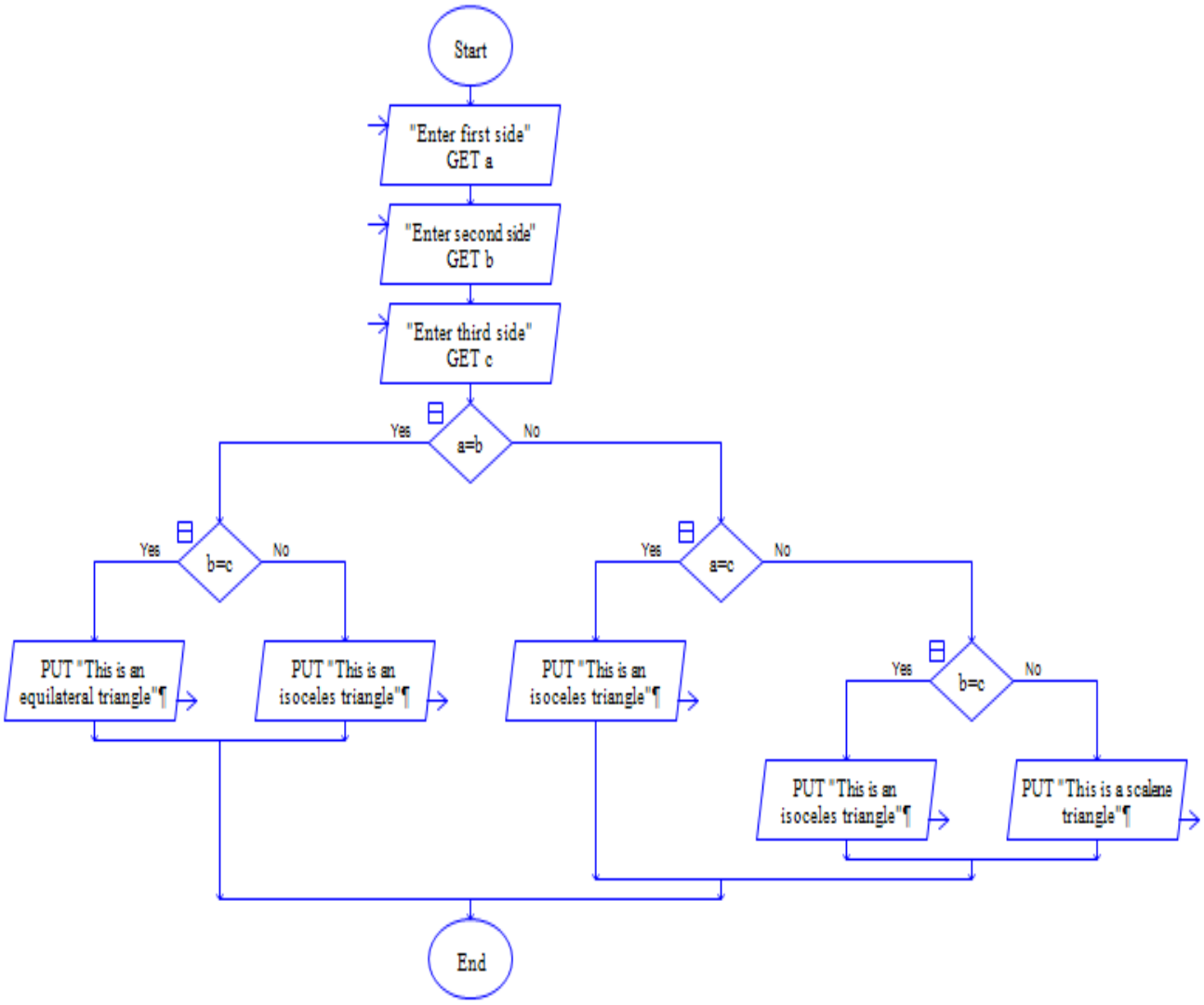
1. Calculate the average of three numbers. If average is greater than or equal to 75, print "Pass", else print "Fail".



2. Calculate and print the factorial of a number.



3. Accept the lengths of three sides of a triangle as input from the user. Based on the input, print if the given
triangle is "Equilateral", "Isosceles" or "Scalene".

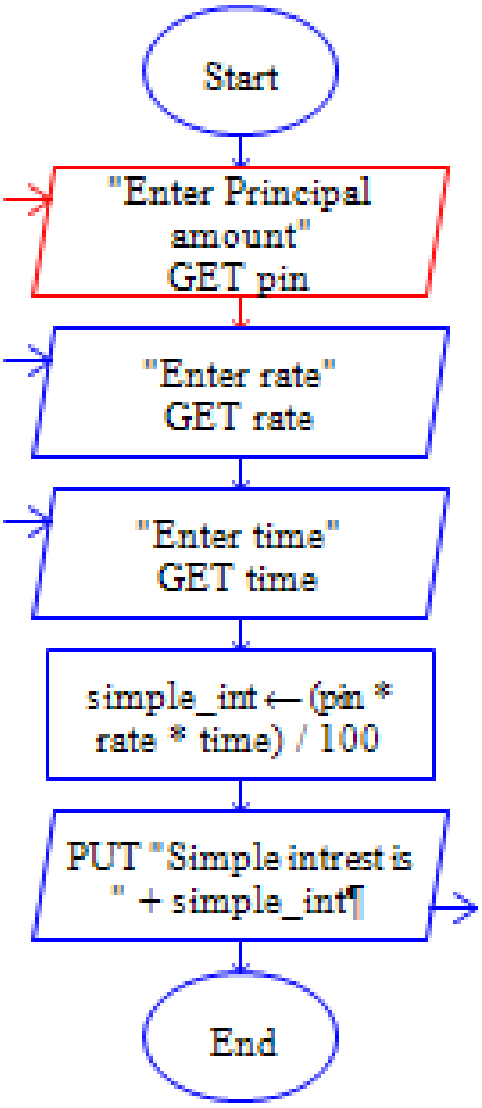


4. Accept the values of principal amount, rate of interest and number of years as an input from the user. Calculate

and print the simple interest.

Hint - Formula for simple interest:

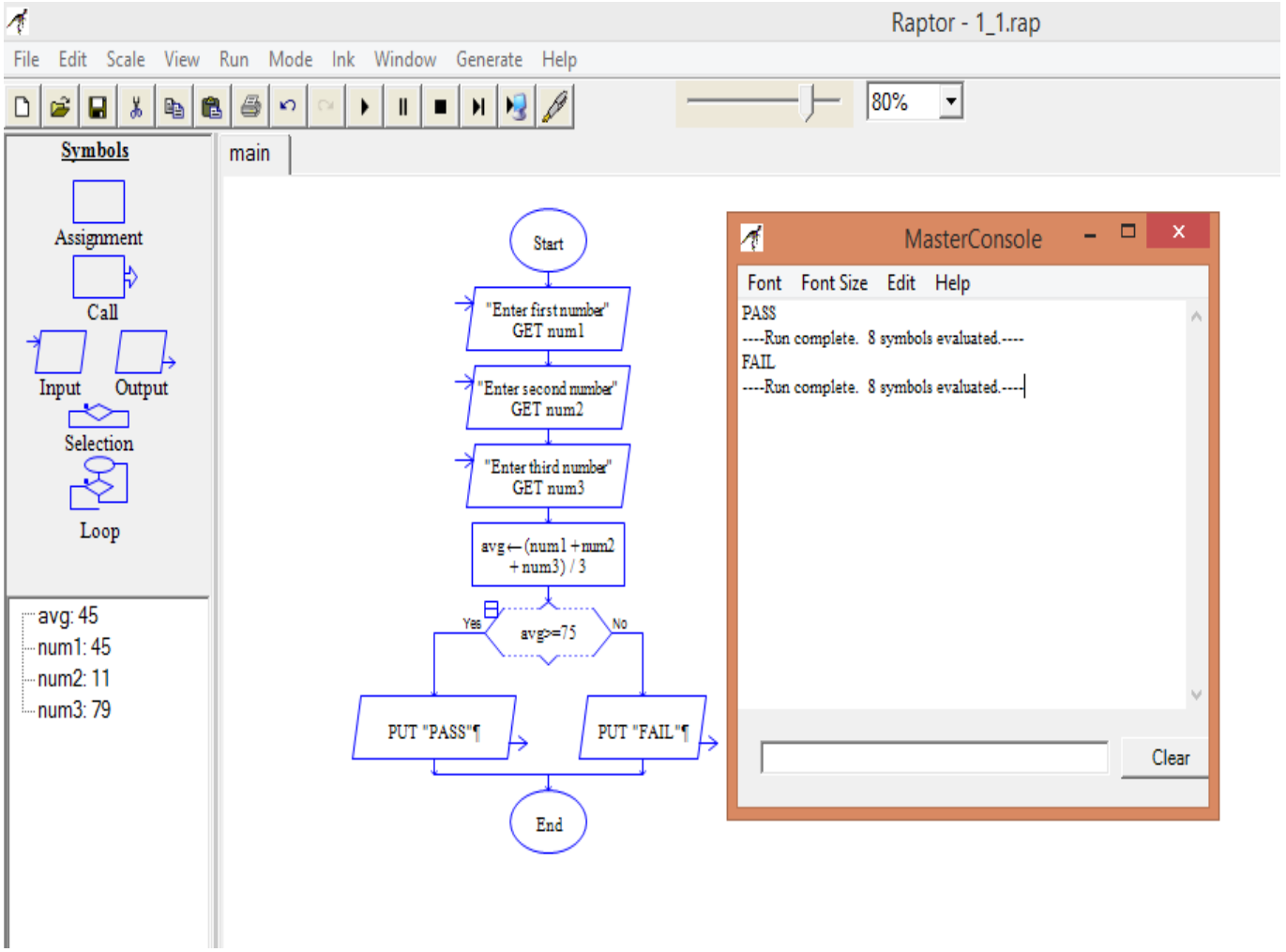
Simple Interest = (principal amount * rate of interest * number of years)/100



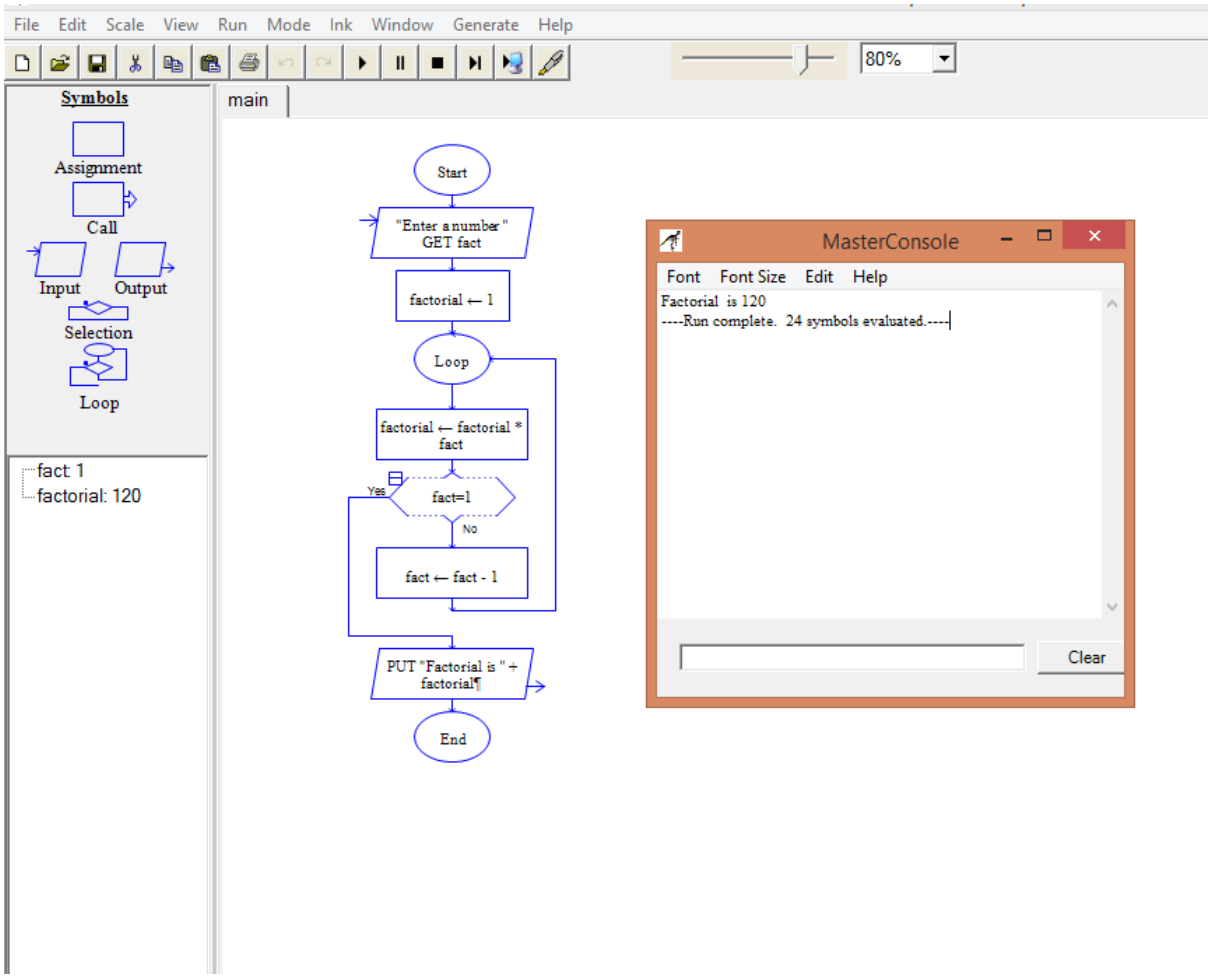
ASSIGNMENT-3

Create flowcharts for the following problems use Raptor tool to create and execute flowcharts for these problems. Observe the output for different set of inputs.

1. Calculate the average of three numbers. If average is greater than or equal to 75, print "Pass", else print "Fail".

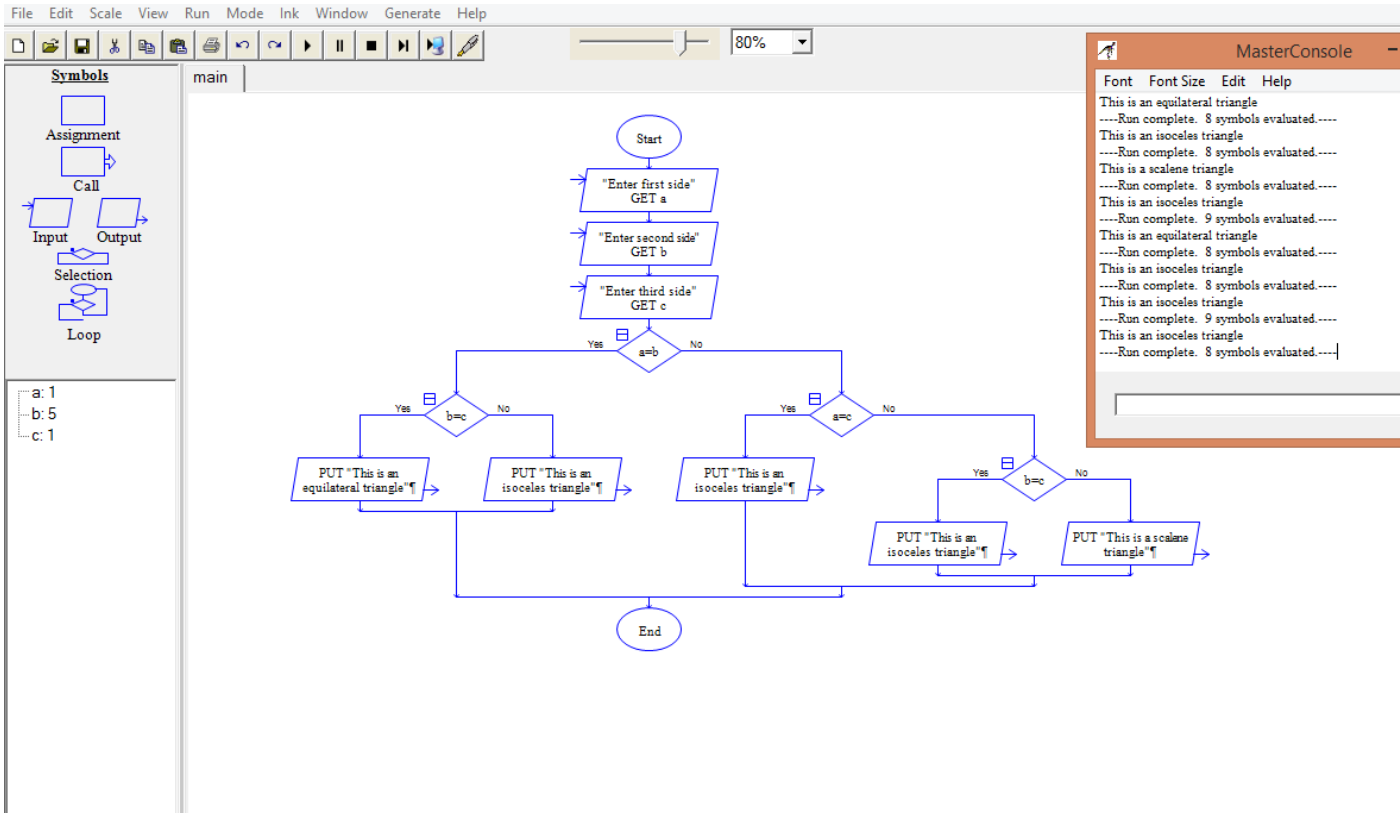


2. Calculate and print the factorial of a number.



3. Accept the lengths of three sides of a triangle as input from the user. Based on the input, print if the given

triangle is "Equilateral", "Isosceles" or "Scalene".

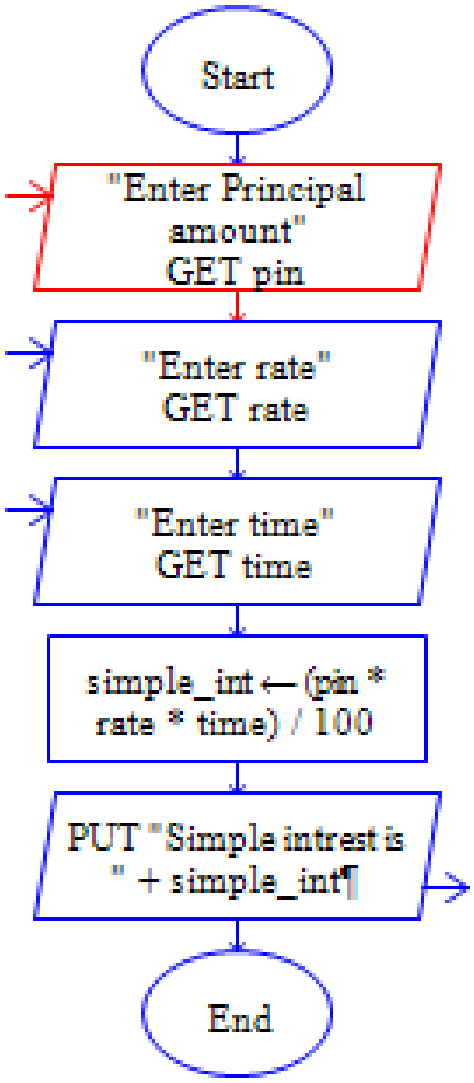


4. Accept the values of principal amount, rate of interest and number of years as an input from the user. Calculate

and print the simple interest.

Hint - Formula for simple interest:

Simple Interest = (principal amount * rate of interest * number of years)/100



ASSIGNMENT- 4

Write Pseudo Code:

1. to check whether a given number is even or odd.

```
Start
input number
if(number/2) then
        Display “Number is even “
        else display “Number is odd “
        end if-else
end
```

2. to print the multiples of 3 between 1 to 20.

```
start
Display message “Multiples of 3 in 1 to 20 are :”
for(i=3;i<20;i=i+3)
        display value of i
        end for loop
end
```

3.to find factorial of a given number.

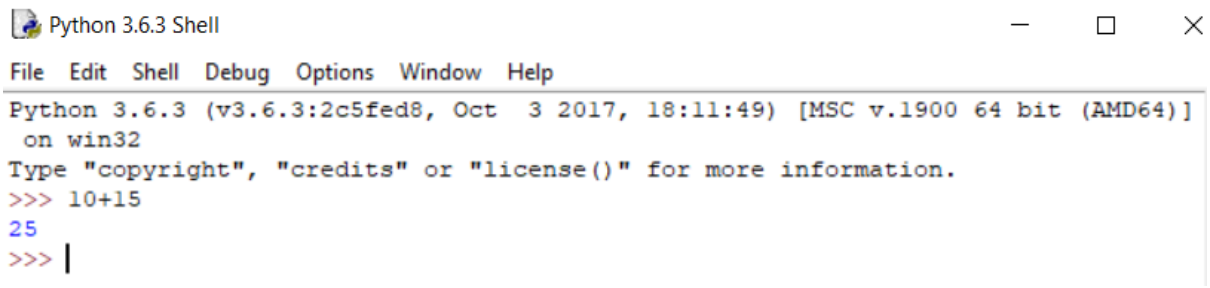
```
start
fact=1
Input num
        while(num<1)
        fact*=num
        num--
        end while
Display “factorial of given number is “ + fact
end
```

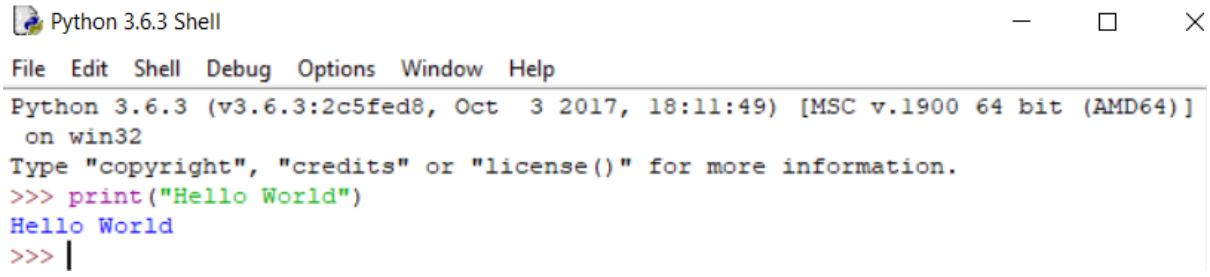
4. to calculate ‘x’ to the power of ‘n’ using a while loop. Assume both ‘x’ and ‘n’ are positive whole numbers.

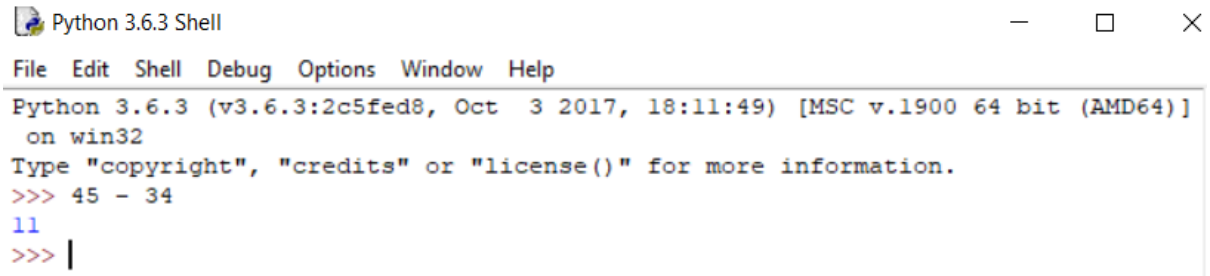
```
start
pow=1
Input x and n
        for(i=1; i<=n;i++)
        pow=x*pow
        end for loop
Display “X to the power N is “ + pow
end
```

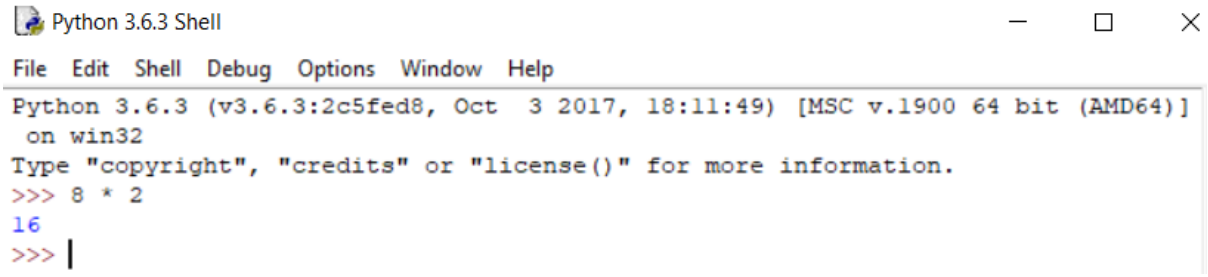
ASSIGNMENT- 5

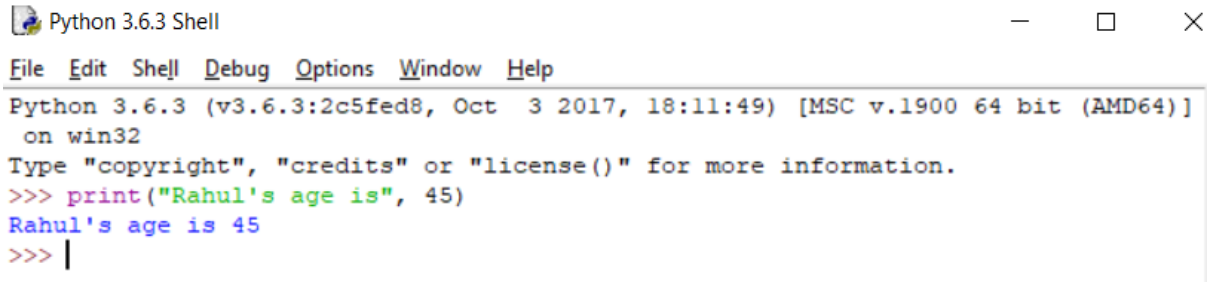
Open the Python IDLE and execute the following commands. Observe the output.
1)
10 + 15
2)
print("Hello World")
3)
45 - 34
4)
8 * 2
5)
print("Rahul's age is", 45)
6)
print("I have", 10, "mangoes and", 12, "bananas")
Duration : 10 mins

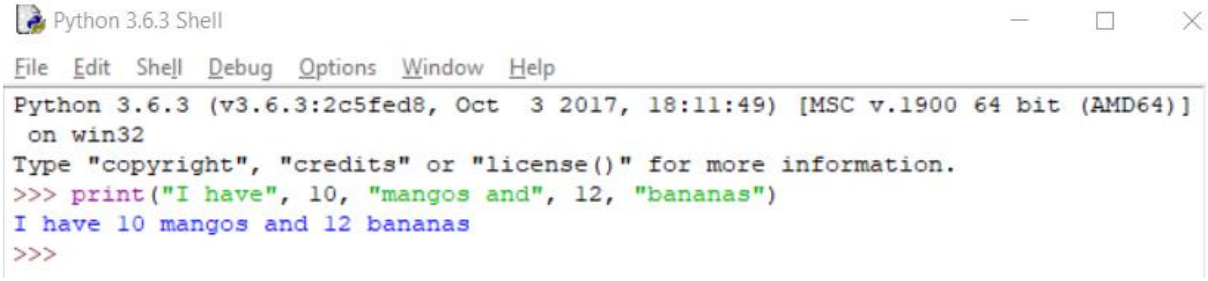







Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)]
on win32
Type "copyright", "credits" or "license()" for more information.
>>> 8 * 2
16
>>>

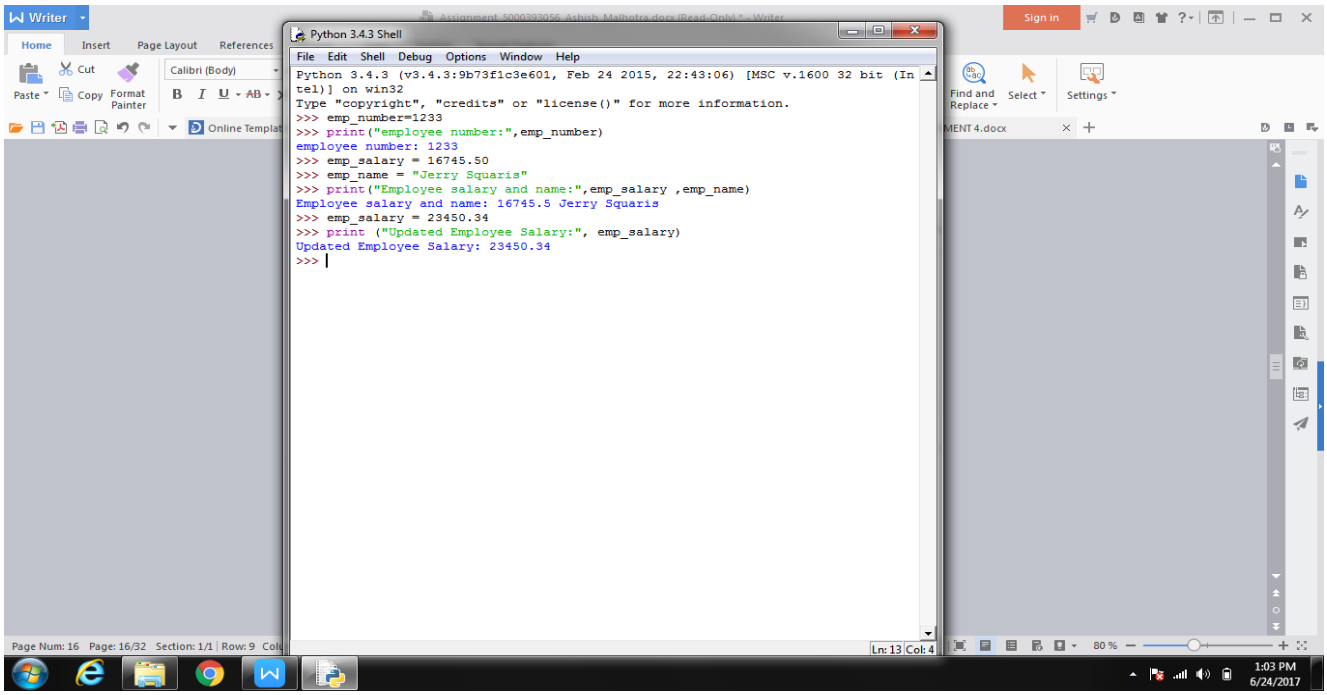

Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)]
on win32
Type "copyright", "credits" or "license()" for more information.
>>> print("Rahul's age is", 45)
Rahul's age is 45
>>>


Python 3.6.3 Shell
File Edit Shell Debug Options Window Help
Python 3.6.3 (v3.6.3:2c5fed8, Oct 3 2017, 18:11:49) [MSC v.1900 64 bit (AMD64)]
on win32
Type "copyright", "credits" or "license()" for more information.
>>> print("I have", 10, "mangos and", 12, "bananas")
I have 10 mangos and 12 bananas
>>>

Assignment – 6

Open Python IDLE and execute the following commands. Observe the output.

1. emp_number = 1233
2. Print ("Employee Number:", emp_number)
3. emp_salary = 16745.50
4. emp_name = "Jerry Squaris"
5. Print ("Employee Salary and Name:", emp_salary, emp_name)
6. emp_salary = 23450.34
7. Print ("Updated Employee Salary:", emp_salary)



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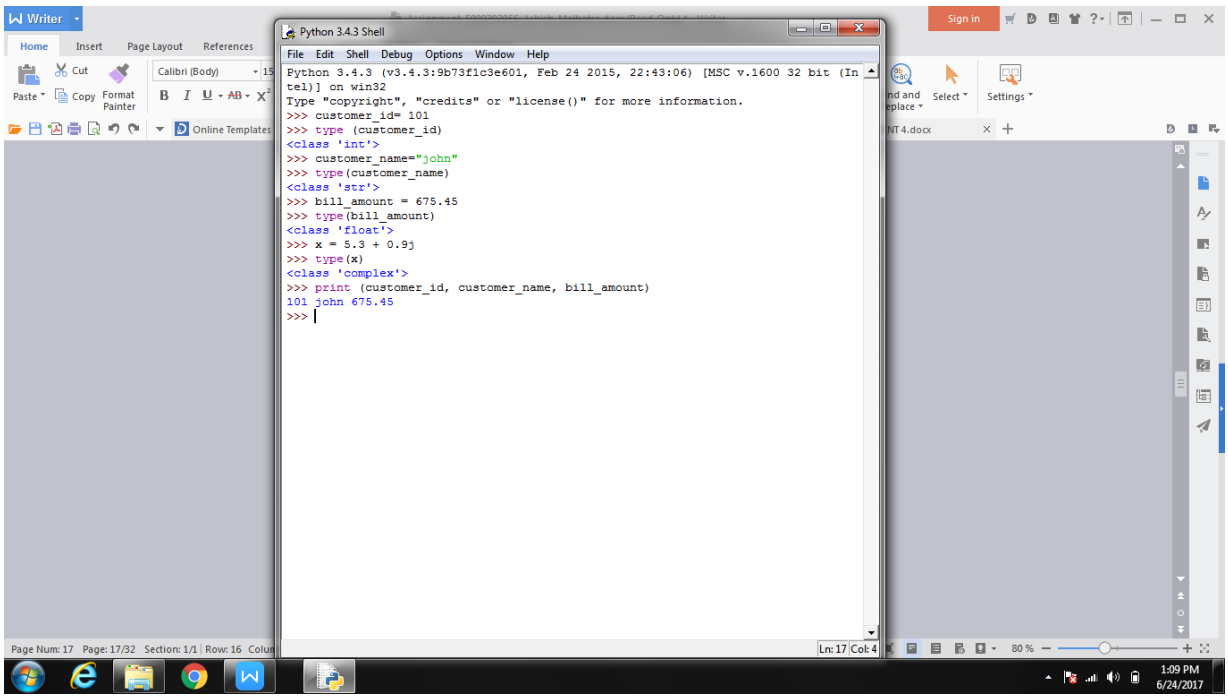
Assignment – 7

Execute the following Python statements in IDLE and observe the output:

- customer_id = 101
- Type (customer_id)
- customer_name = "John"
- Type (customer_name)
- bill_amount = 675.45
- Type (bill_amount)
- x = 5.3 + 0.9j
- type(x)
- Print (customer_id, customer_name, bill_amount)



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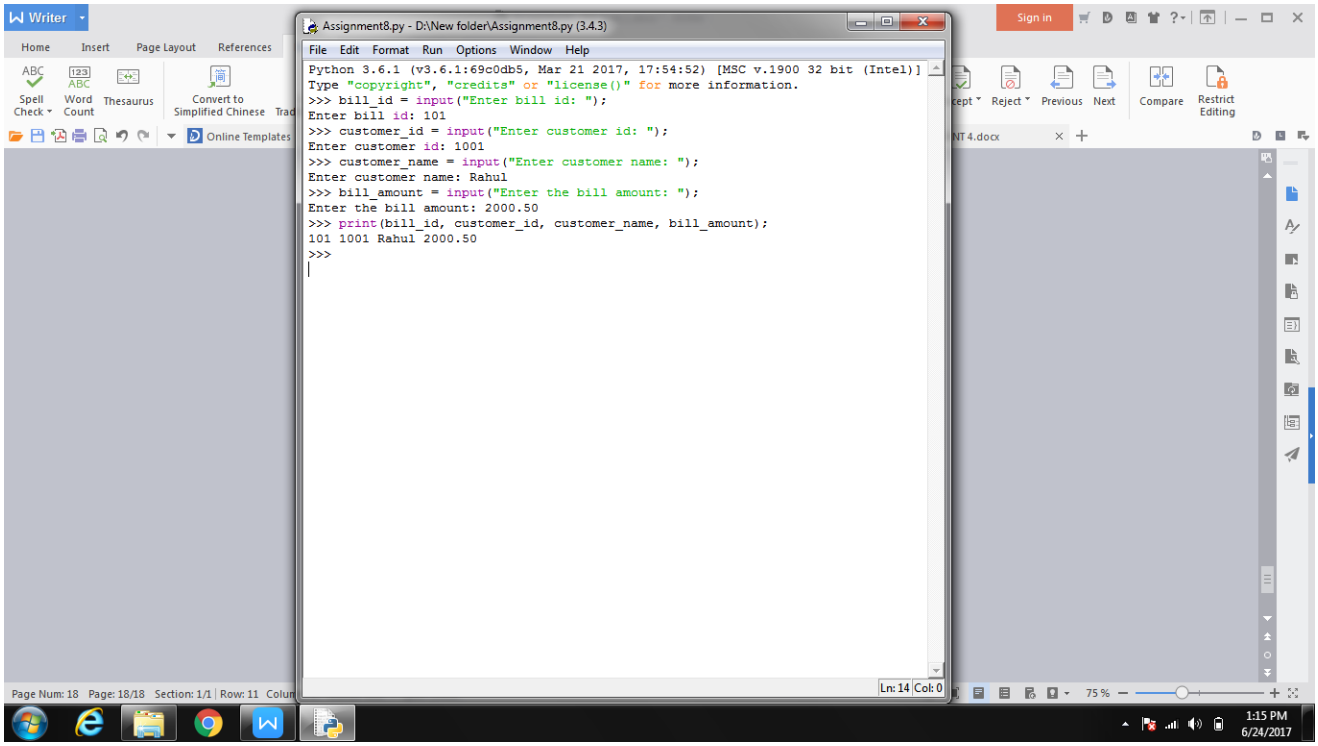
Assignment – 8

In a retail application, shopkeeper wants to keep a track of following details of a customer. Sample values are provided.

- bill_id = 101
- customer_id = 1001
- customer_name = "Rahul"
- if_minor = False
- bill_amount = 2000.50

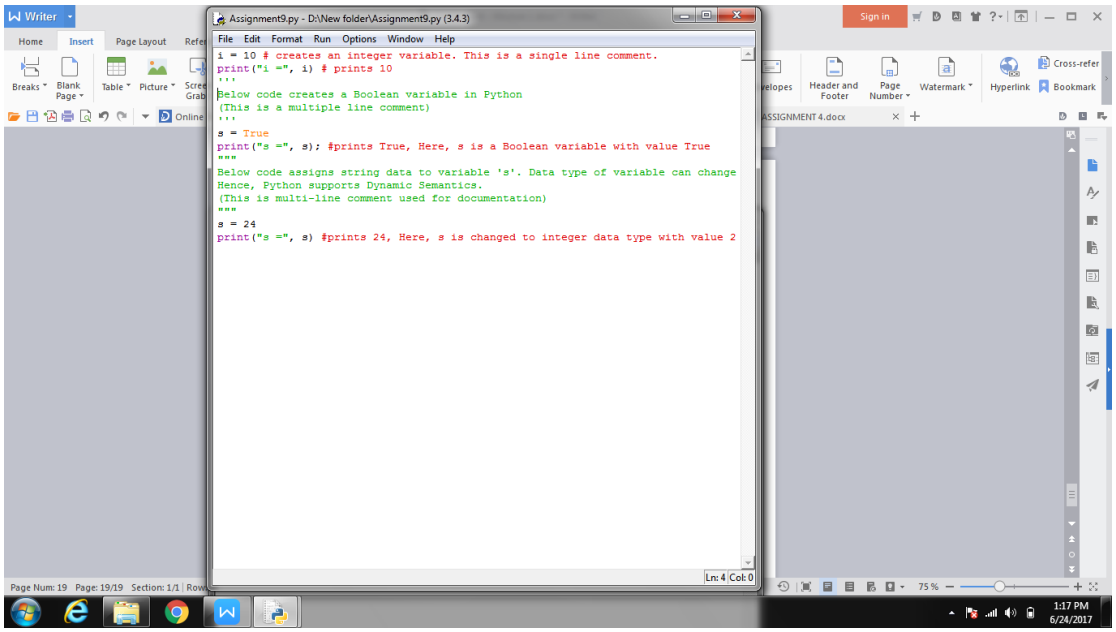
Write a python program to store the details and display them.

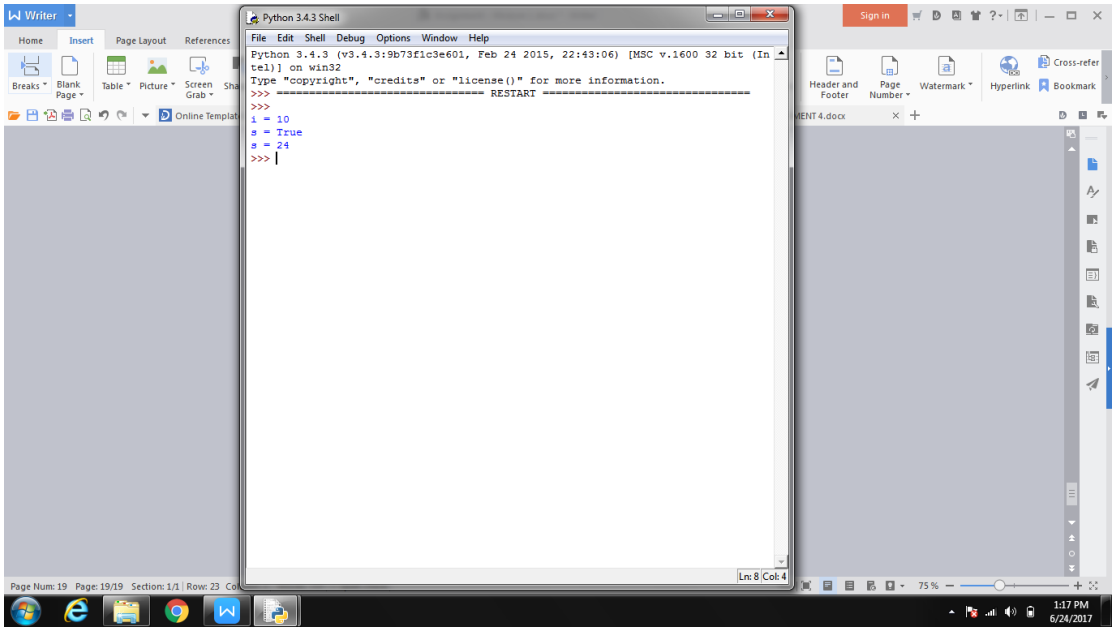


Assignment – 9

Execute the following commands and observe the usage of different types of commenting styles.

```
i = 10  # creates an integer variable. This is a single line comment.
print("i =", i) # prints 10
'''
Below code creates a Boolean variable in Python
(This is a multiple line comment)
'''
s = True
print("s =", s) #prints True, Here, s is a Boolean variable with value True
"""
Below code assigns string data to variable 's'. Data type of variable can change during execution,
Hence, Python supports Dynamic Semantics.
(This is multi-line comment used for documentation)
"""
s = 24
print("s =", s) #prints 24, Here, s is changed to integer data type with value 24
```




Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ========== RESTART ==========
>>>
i = 10
s = True
s = 24
>>>
Ln: 8 Col: 4
Writer
Home
Insert
Page Layout
References
Sign in
1:17 PM
6/24/2017

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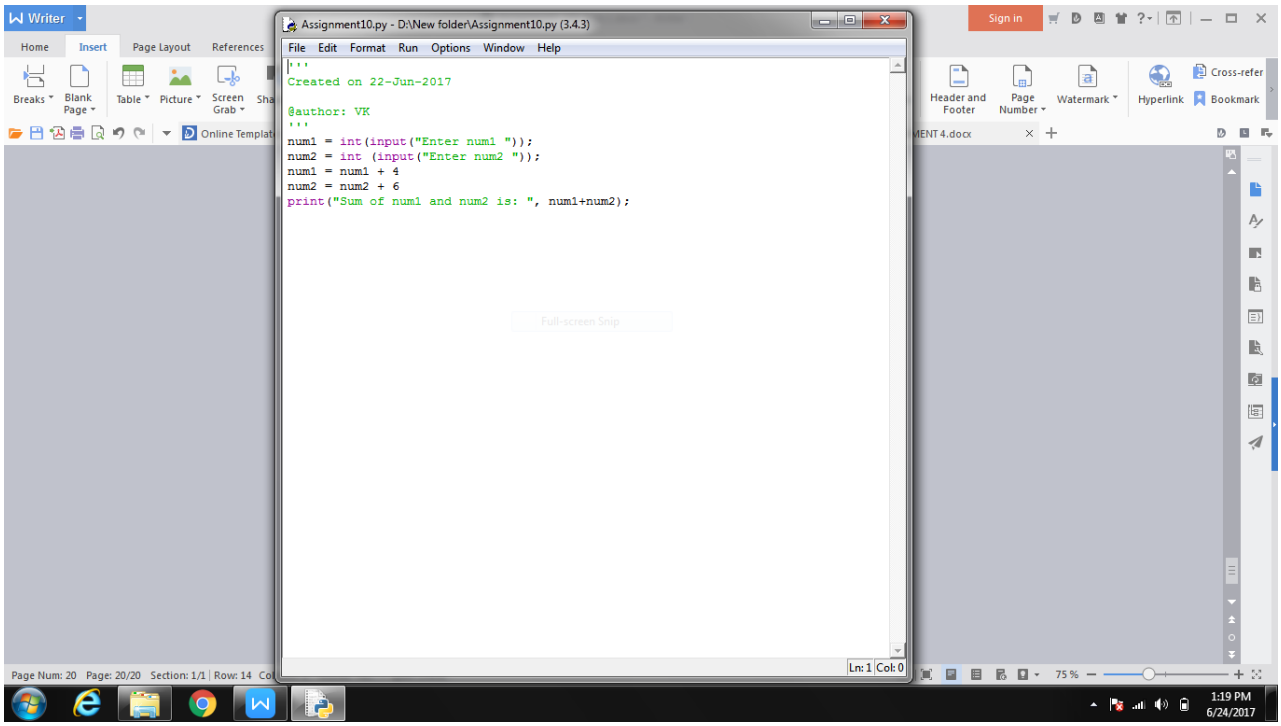
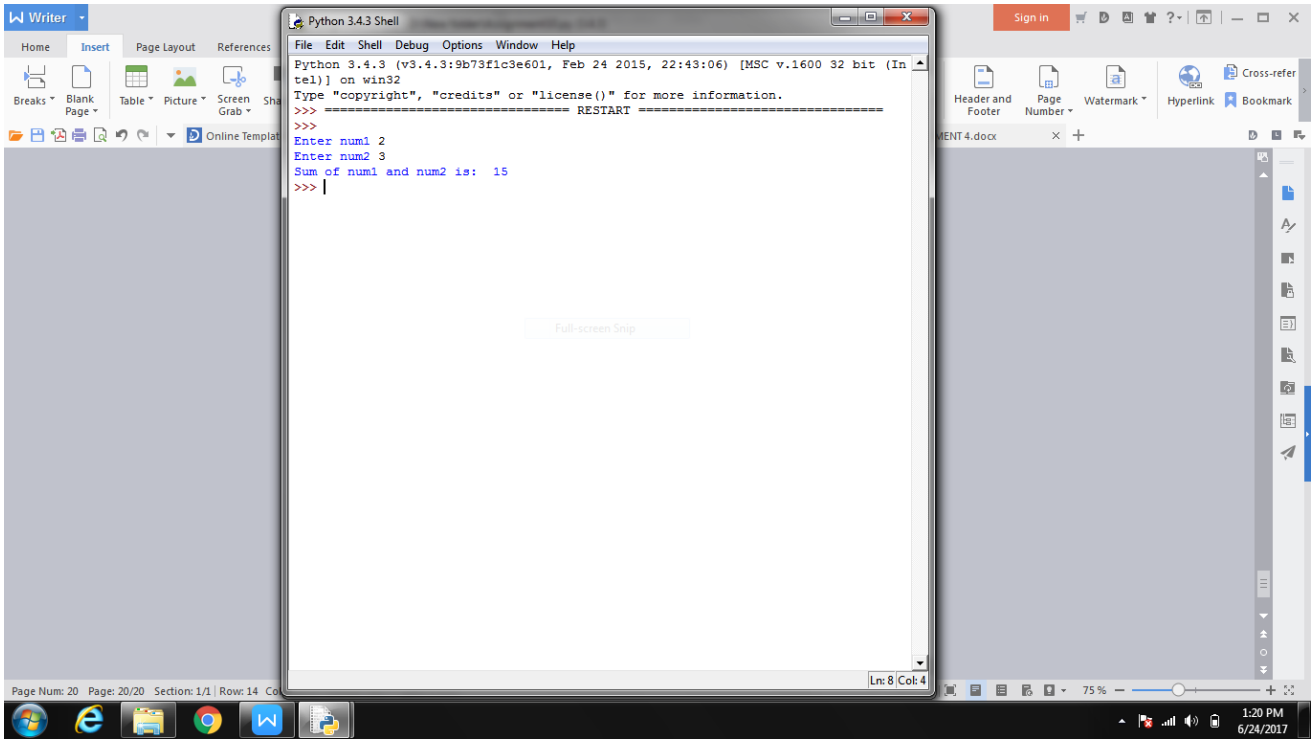
Assignment – 10

Write a Python program for the following requirements:

- Prompt the user to input two numbers num1 and num2
- Increment num1 by 4 and num2 by 6
- Find and print the sum of new values of num1 and num2

Hint – Use type casting for converting the input into an integer.





Assignment – 11

1) Consider two variables 'a' and 'b' in Python such that a = 4 and b = 5. Swap the values of 'a' and 'b' without using a temporary variable. Print the values of 'a' and 'b' before and after swapping.

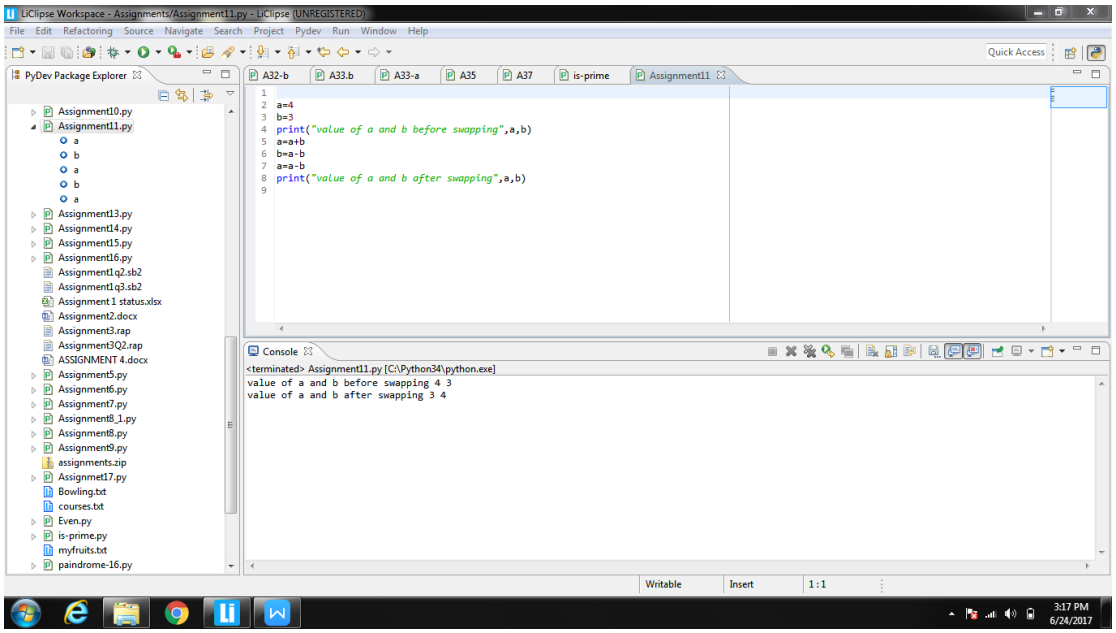
2) Consider the scenario of processing marks of a student in ABC Training Institute. John, the student of fifth grade takes exams in three different subjects. Create three variables to store the marks obtained by John in three subjects. Find and display the average marks scored by John. Now change the marks in one of the subjects and observe the output. Did the value of average change?

3) Given the value of radius of a circle, write a Python program to calculate the area and perimeter of the circle. Display both the values.

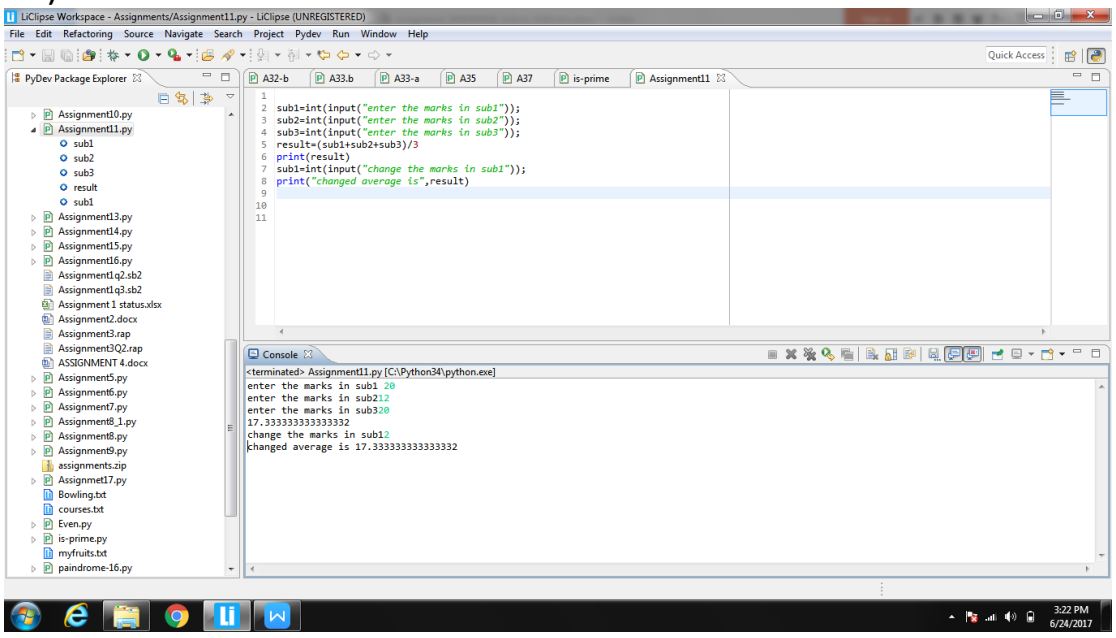
4) The finance department of a company wants to compute the monthly pay of its employees. Monthly pay should be calculated as mentioned in the formula below. Display all the employee details.

Monthly Pay = Number of hours worked in a week * Pay rate per hour * No. of weeks in a month

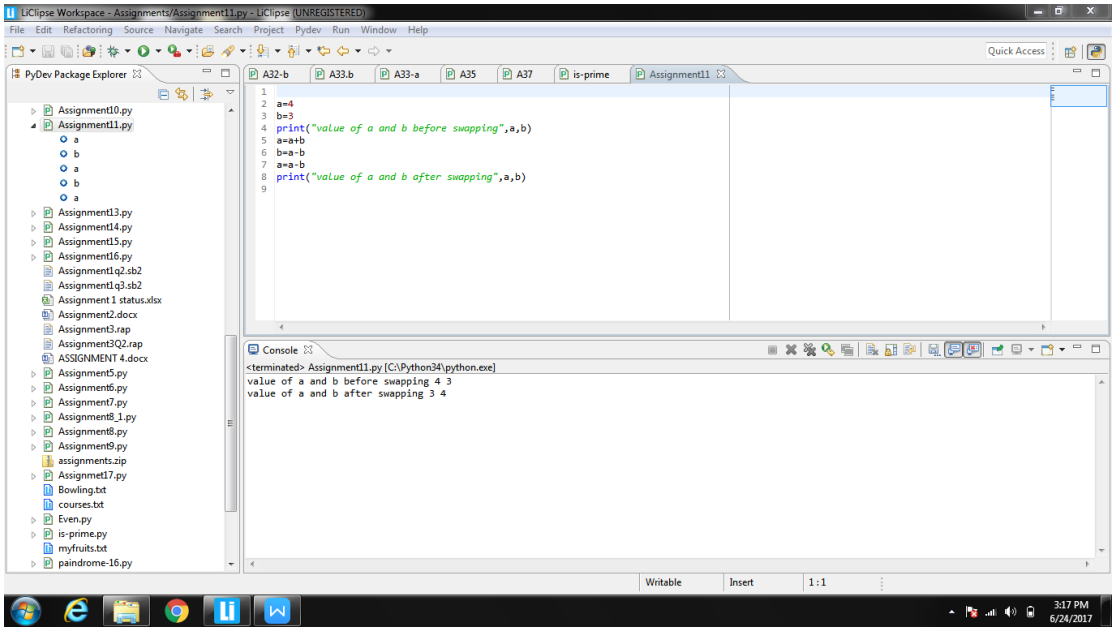
A1)



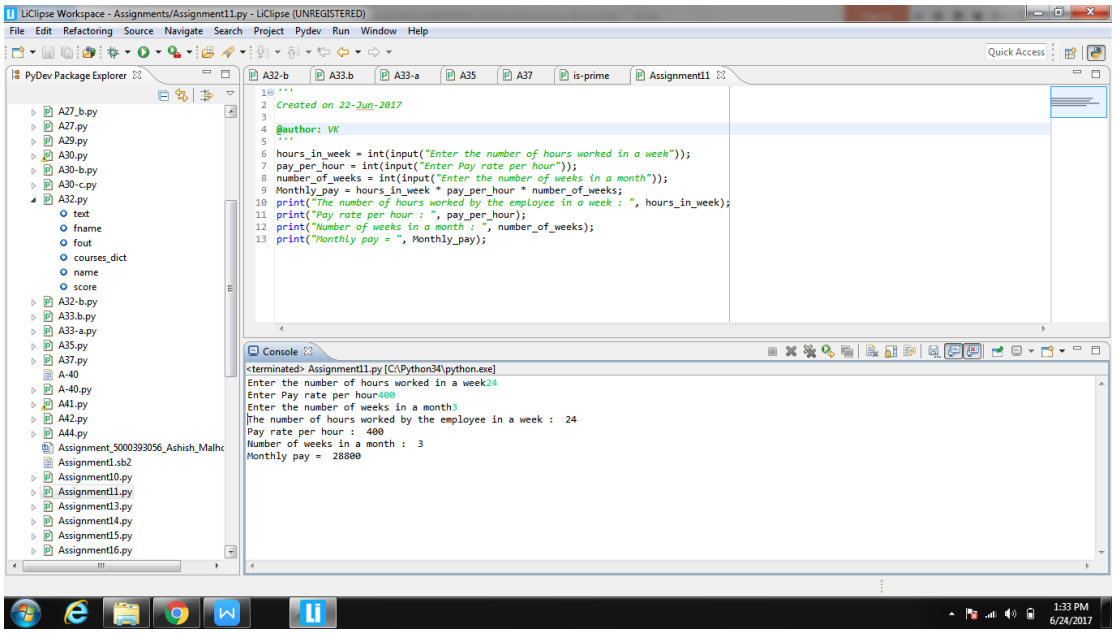
A2)



A3)


LiClipse Workspace - Assignments/Assignment11.py - LiClipse (UNREGISTERED)
File Edit Refactoring Source Navigate Search Project Pydev Run Window Help
Quick Access
PyDev Package Explorer
A32-b
A33.b
A33-a
A35
A37
is-prime
Assignment11
a=4
b=3
print("value of a and b before swapping",a,b)
a=a+b
b=a-b
a=a-b
print("value of a and b after swapping",a,b)
Console
<terminated> Assignment11.py [C:\Python34\python.exe]
value of a and b before swapping 4 3
value of a and b after swapping 3 4
Writable
Insert
1 : 1
3:17 PM
6/24/2017

A4)


LiClipse Workspace - Assignments/Assignment11.py - LiClipse (UNREGISTERED)
File Edit Refactoring Source Navigate Search Project Pydev Run Window Help
Quick Access
PyDev Package Explorer
A32-b
A33.b
A33-a
A35
A37
is-prime
Assignment11
'''
Created on 22-Jun-2017
@author: VK
'''
hours_in_week = int(input("Enter the number of hours worked in a week"));
pay_per_hour = int(input("Enter Pay rate per hour"));
number_of_weeks = int(input("Enter the number of weeks in a month"));
Monthly_pay = hours_in_week * pay_per_hour * number_of_weeks;
print("The number of hours worked by the employee in a week : ", hours_in_week);
print("Pay rate per hour : ", pay_per_hour);
print("Number of weeks in a month : ", number_of_weeks);
print("Monthly pay = ", Monthly_pay);
Console
<terminated> Assignment11.py [C:\Python34\python.exe]
Enter the number of hours worked in a week24
Enter Pay rate per hour400
Enter the number of weeks in a month3
The number of hours worked by the employee in a week : 24
Pay rate per hour : 400
Number of weeks in a month : 3
Monthly pay = 28800
1:33 PM
6/24/2017

Assignment – 12

Identify the sections of the given program where the coding standards are not followed and correct them.

1. itemNo=1005
2. unitprice = 250
3. quantity = 2
4. amount=quantity*unitprice
5. print("Item No:", itemNo)
6. print("Bill Amount:", amount)

Ans) Lines which were corrected due to incorrect coding standard are marked in bold and comment has been attached explaining the coding standard which are being used.

item_no = 1005 # (variables should be in complete lowercase)
unit_price = 250 # (variables should have _ in between words for clear understanding)
quantity = 2
amount = quantity * unit_price # (leave a space before and after binary operator for clear understanding)
Print("Item No:", item_no)
Print("Bill Amount:", amount)

Assignment – 13

Create a new file in Python IDLE as "triangle.py"

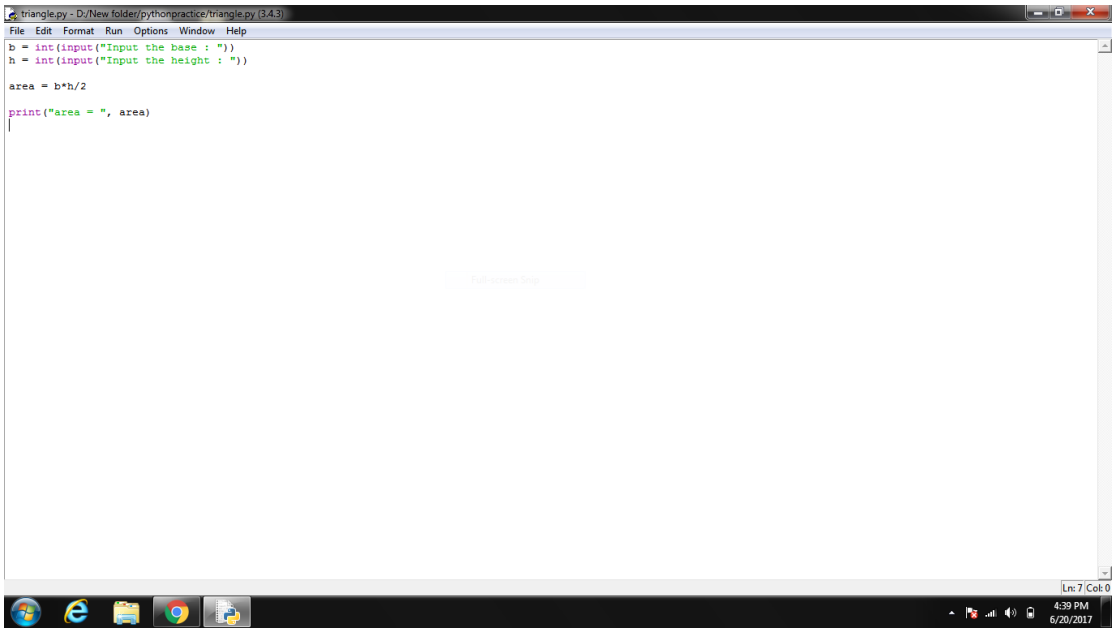
• Write a Python program to calculate and print the area of the triangle. Prompt the user to input the values for base and height of the triangle.

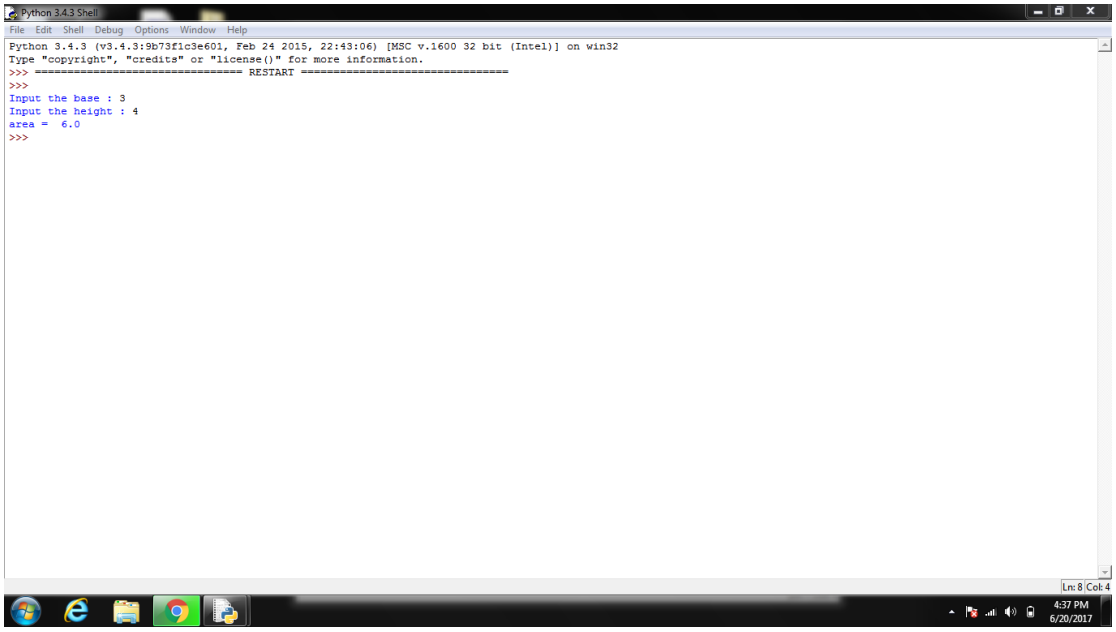
•Execute the program (use 'Run Module' under 'Run' tab) and observe the output.

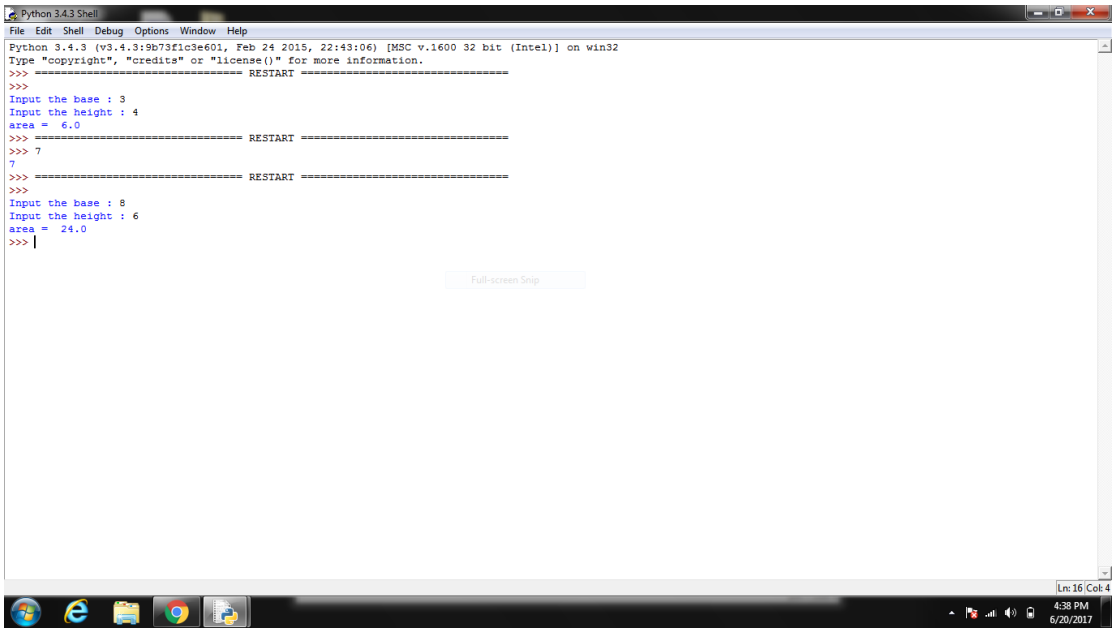
•Close the file, open it again and execute it once more with different values. Observe the output.

Hint – Use type casting for converting the input into an integer.

Area of a triangle = ½ * base * height




Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ========== RESTART ==========
>>>
Input the base : 3
Input the height : 4
area = 6.0
>>>
Ln: 8 Col: 4
4:37 PM
6/20/2017


Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ========== RESTART ==========
>>>
Input the base : 3
Input the height : 4
area = 6.0
>>> ========== RESTART ==========
>>> 7
7
>>> ========== RESTART ==========
>>>
Input the base : 8
Input the height : 6
area = 24.0
>>>
Ln: 16 Col: 4
4:38 PM
6/20/2017

Assignment – 14

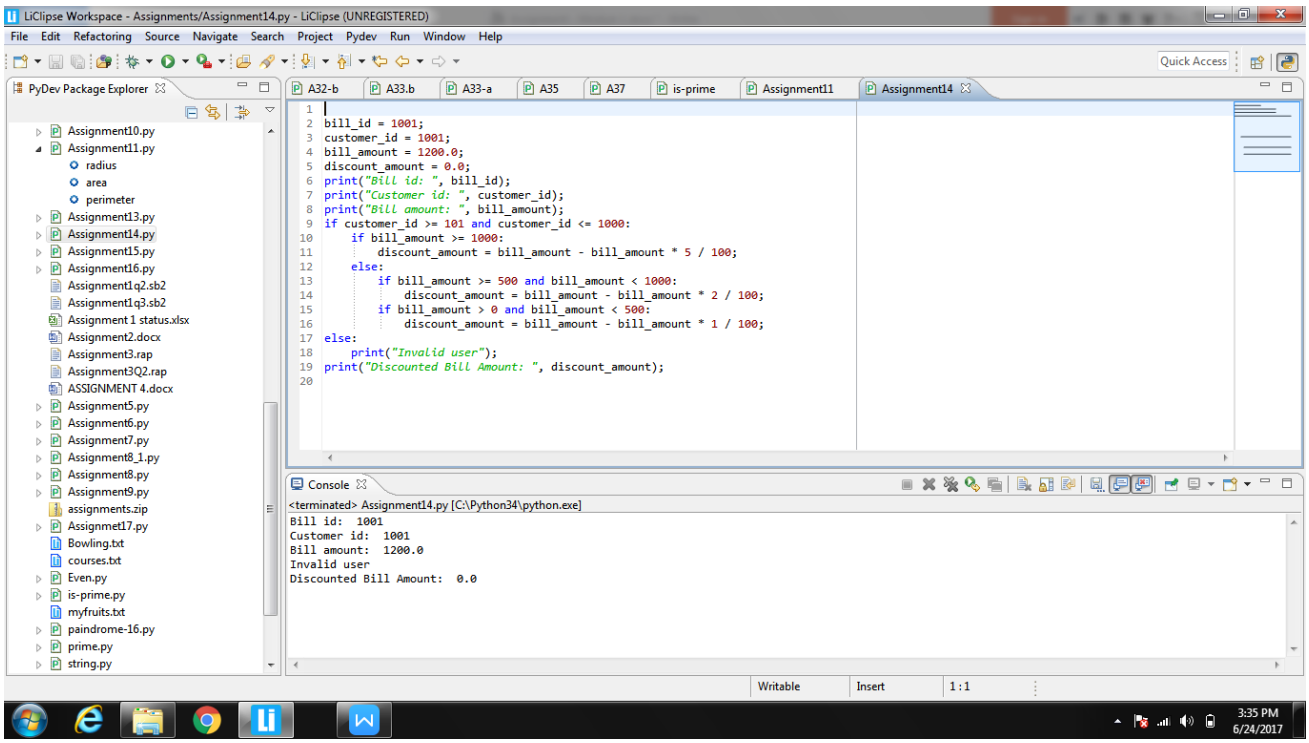
1) Consider the scenario of retail store management again. The store provides discount for all bill amounts based on the criteria below:

Bill Amount	Discount %
>= 1000	5
>= 500 and < 1000	2
> 0 and < 500	1

Write a Python program to find the net bill amount after discount. Observe the output with different values of bill amount.
Assume that bill amount will be always greater than zero.

2) Extend the above program to validate the customer id. Customer ids in the range of 101 and 1000 (both inclusive) should only be considered valid.
Note: Display appropriate error messages wherever applicable.

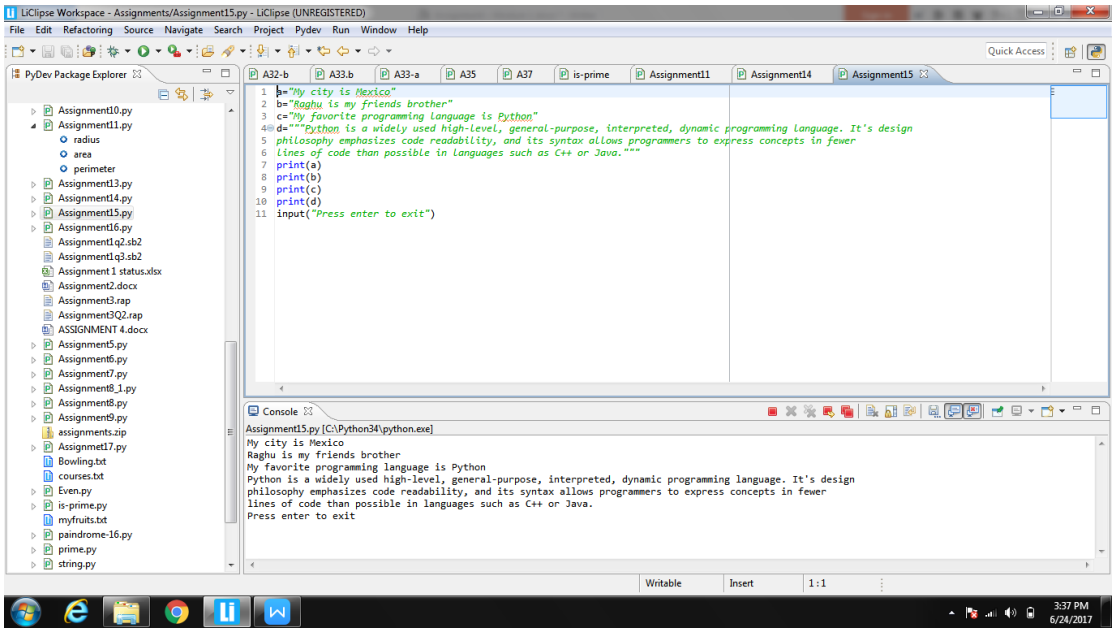
Ans



Assignment – 15

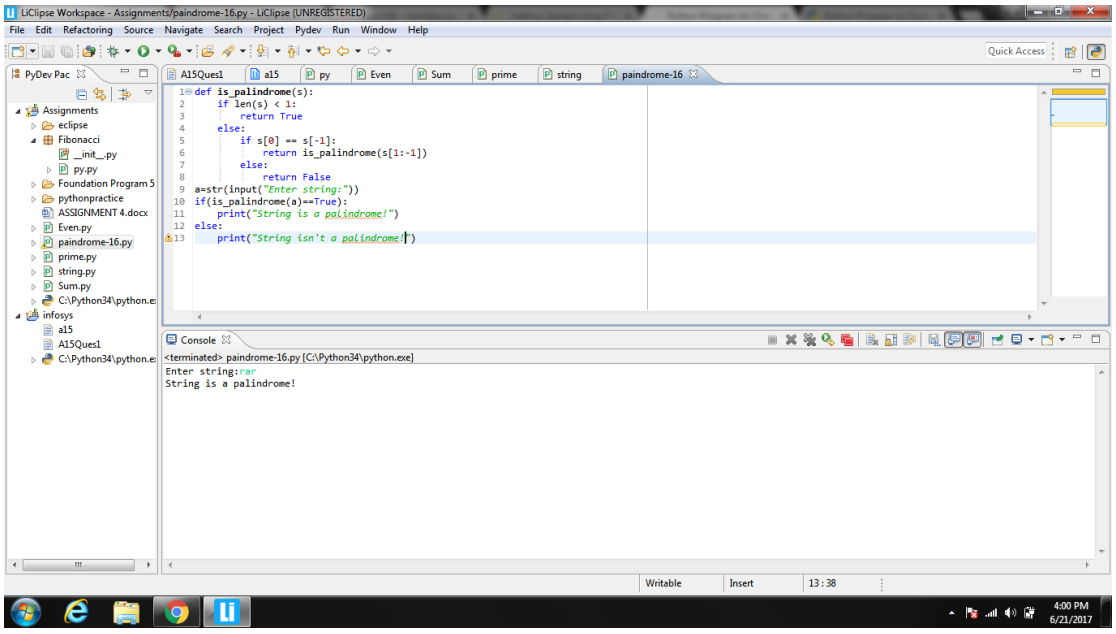
Create four string variables a, b, c, d to store the following values and display them:

- My city is Mexico
- Raghu is my friend's brother
- My favorite programming language is "Python"
- Python is a widely used high-level, general-purpose, interpreted, dynamic programming language. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than possible in languages such as "C++" or "Java".



Assignment – 16

•Accept a string as an input from the user. Check if the accepted string is palindrome or not.
•If the string is palindrome, print "String is palindrome", otherwise print "String is not palindrome".
•Also print the actual and the reversed strings.
Note – Ignore the case of characters.
Hint – A palindrome string remains the same if the characters of the string are reversed.



ASSIGNMENT -17

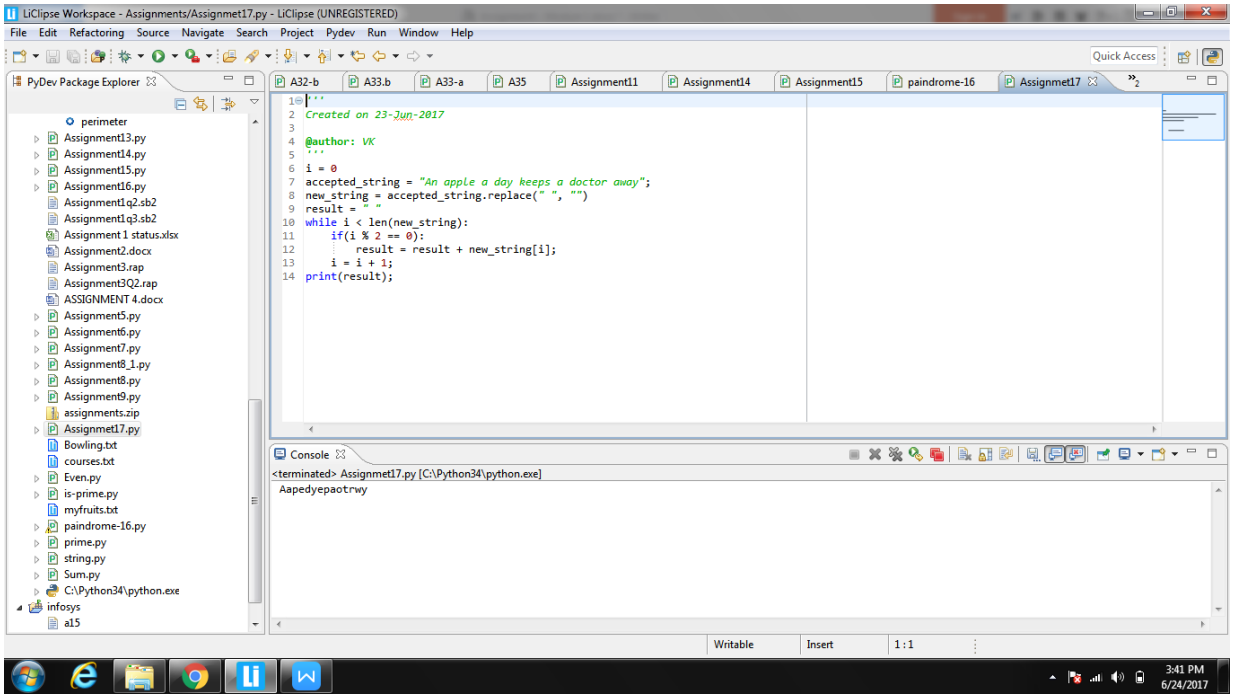
Accept two strings 'string1' and 'string2' as an input from the user. Generate a resultant string, such that it is a

concatenated string of all upper case alphabets from both the strings in the order they appear. Print the actual and

the resultant strings.

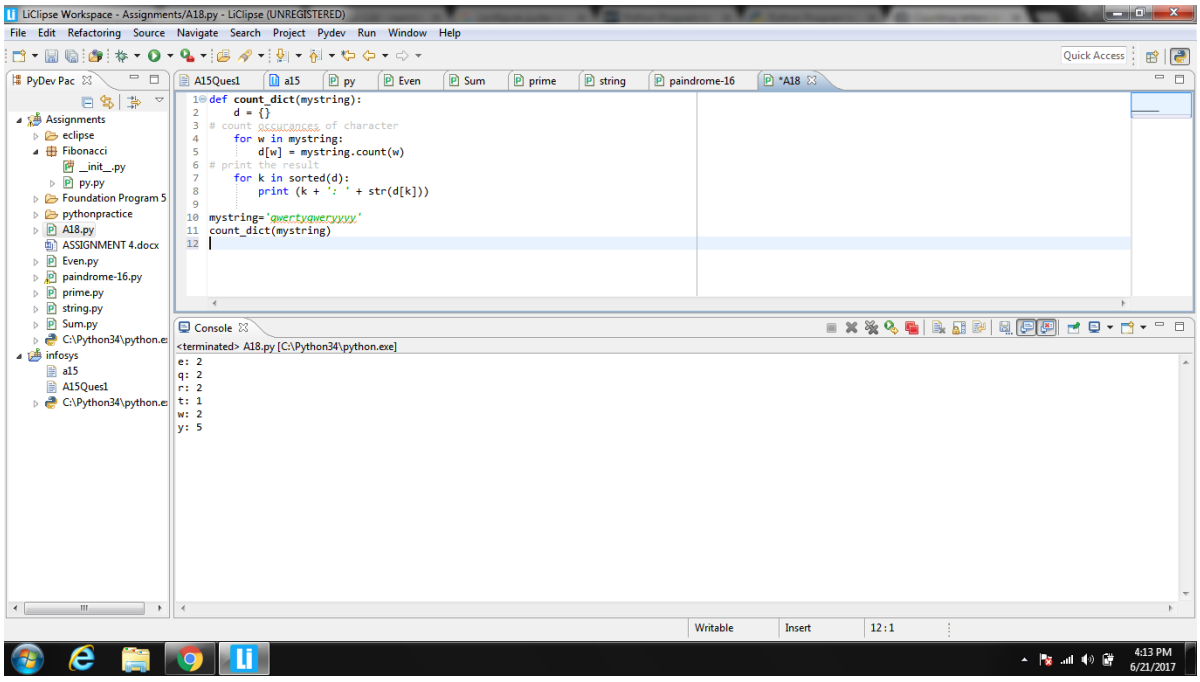
Note: Each character should be checked if it is a upper case alphabet and then it should be concatenated to the

resultant string.



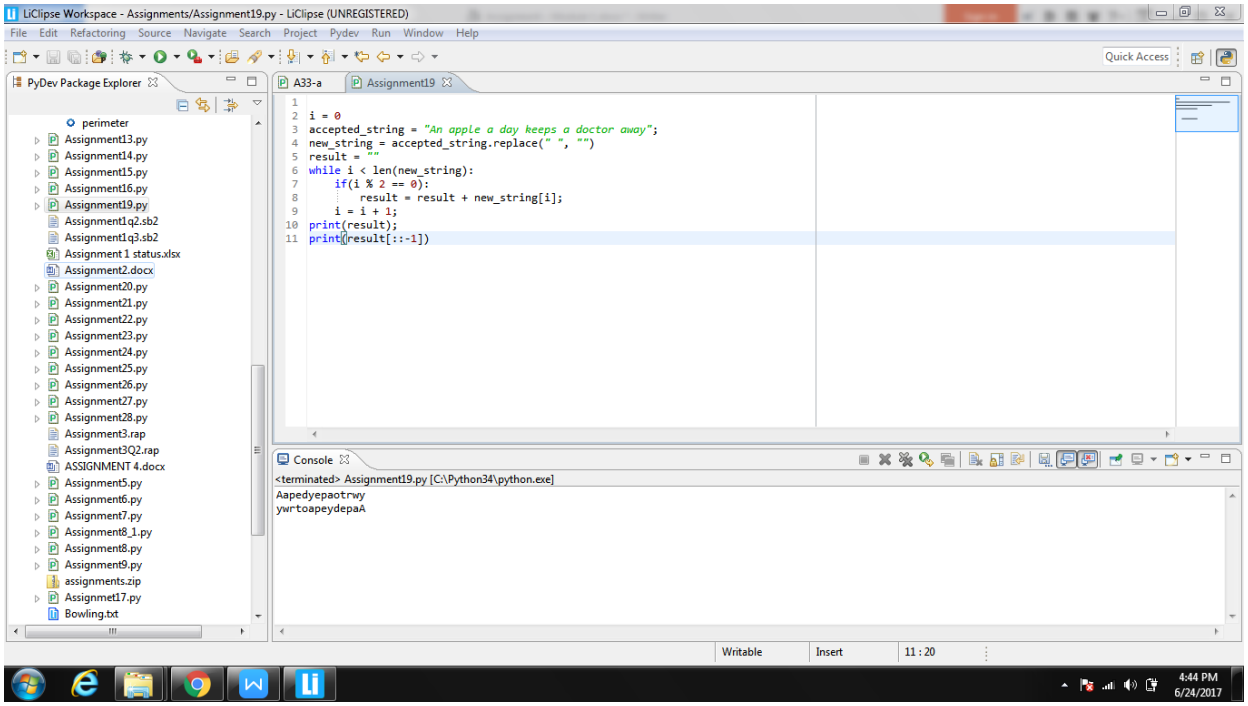
ASSIGNMENT 18

Ques Given a string containing both upper and lower case alphabets. Write a Python program to count the number of occurrences of each alphabet(case insensitive) and display the same



ASSIGNMENT 19

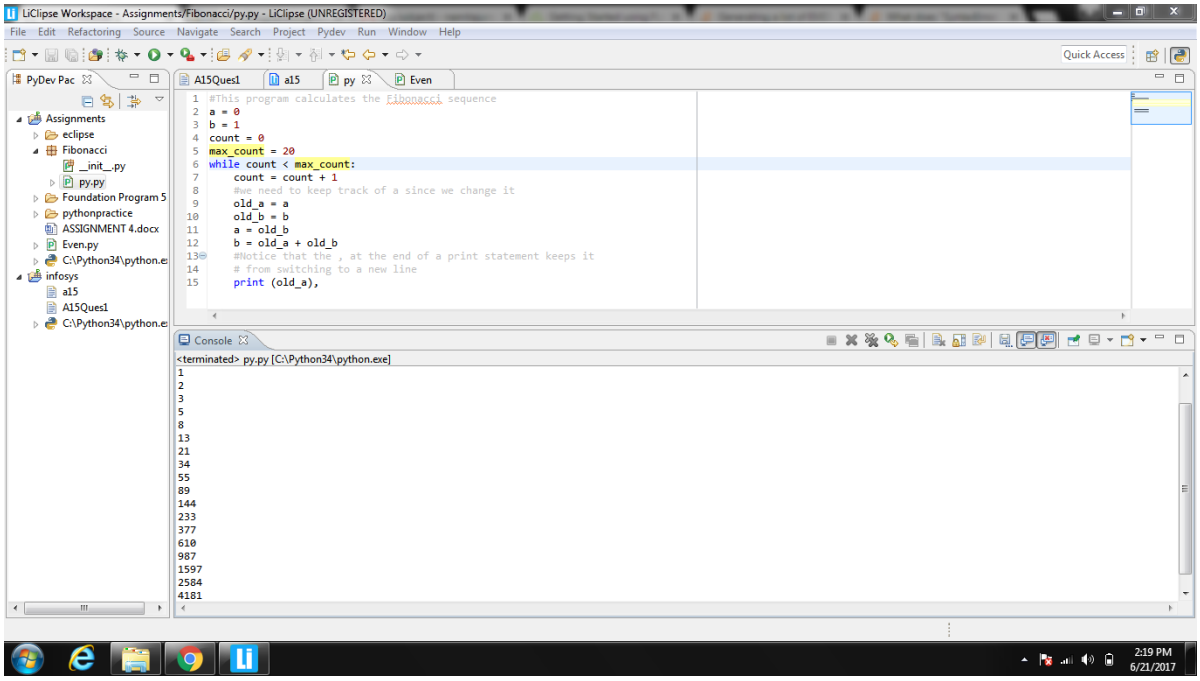
Ques Write a Python program to accept a string 'accepted_string'. Generate resultant string 'resultant_string' such that 'resultant_string' should contain all characters at the even position of 'accepted_string'(ignoring blank spaces). Displasy 'resultant_string' in reverse order



ASSIGNMENT -20

Ques Write a Python program to generate 'n' Fibonacci numbers where 'n' is accepted as an input from the user.

Store the generated Fibonacci numbers in a list and display the output



ASSIGNMENT -21

Ques: The "Variety Retail Store" sells different varieties of Furniture to the customers. The list of furniture available with its

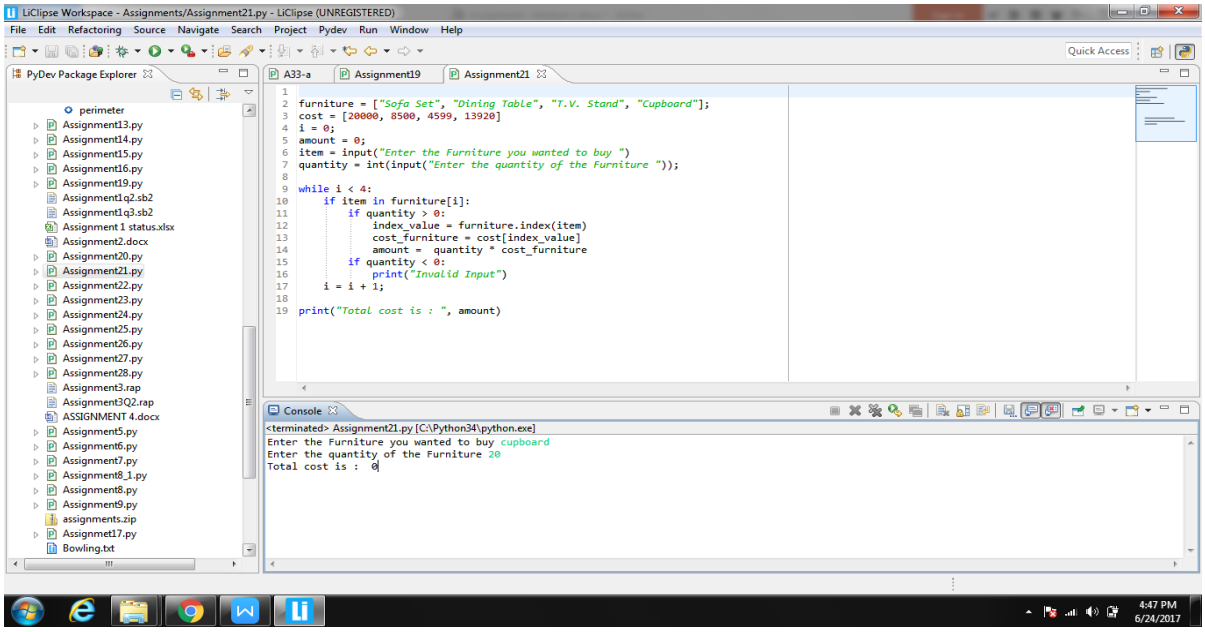
respective cost is given below:

The furniture and its corresponding cost should be stored as a list. A customer can order any furniture in any quantity (the name and quantity of the furniture will be provided). If the required furniture is available in the furniture list(given above) and quantity to be purchased is greater than zero, then bill amount should be calculated. In case of invalid values for furniture required by the customer and quantity to be purchased, display appropriate error message and consider bill amount to be 0. Initialize required furniture and quantity with different values and test the results.

Write a Python program to calculate and display the bill amount to be paid by the customer based on the furniture bought and quantity purchased.

Hint – Create two diffrent lists for 'Furniture' and 'Cost'. Indices of two lists should be matched to retrieve the cost

of a particular furniture.



ASSIGNMENT -22

Ques-Consider the list of courses opted by a Student "John" and available electives at ABC Training Institute:

courses = ("Python Programming", "RDBMS", "Web Technology", "Software Engg.")

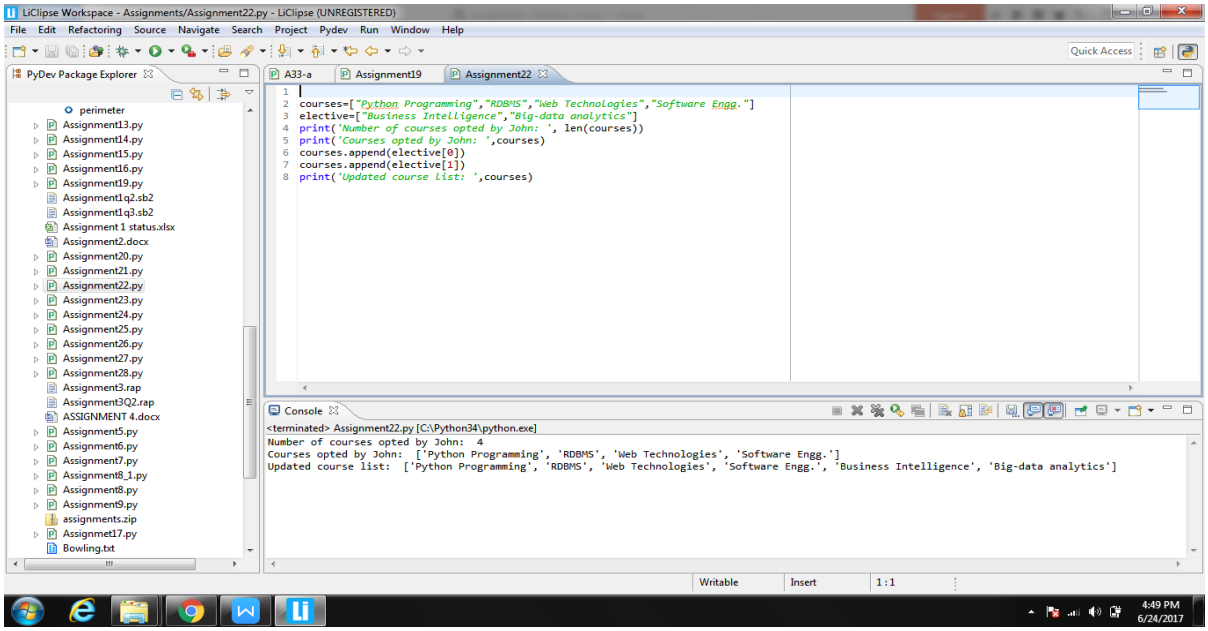
electives = ("Business Intelligence", "Big Data Analytics")

Write a Python Program to satisfy business requirements mentioned below:

1.List the number of courses opted by John.

2.List all the courses opted by John.

3.John is also interested in elective courses mentioned above. Print the updated tuple including electives.



NAME - KANWALJIT SINGH (62)
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Submitted To: Mr. Deepak Kumar Sharma
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ASSIGNMENT -23

Ques:Given below is a dictionary 'customer_details' representing customer details from a Retail Application. Customer Id is the key and Customer Name is the value.

customer_details = { 1001 : "John", 1004 : "Jill", 1005: "Joe", 1003 : "Jack" }

Write Python code to perform the operations mentioned below:

a)Print details of customers.

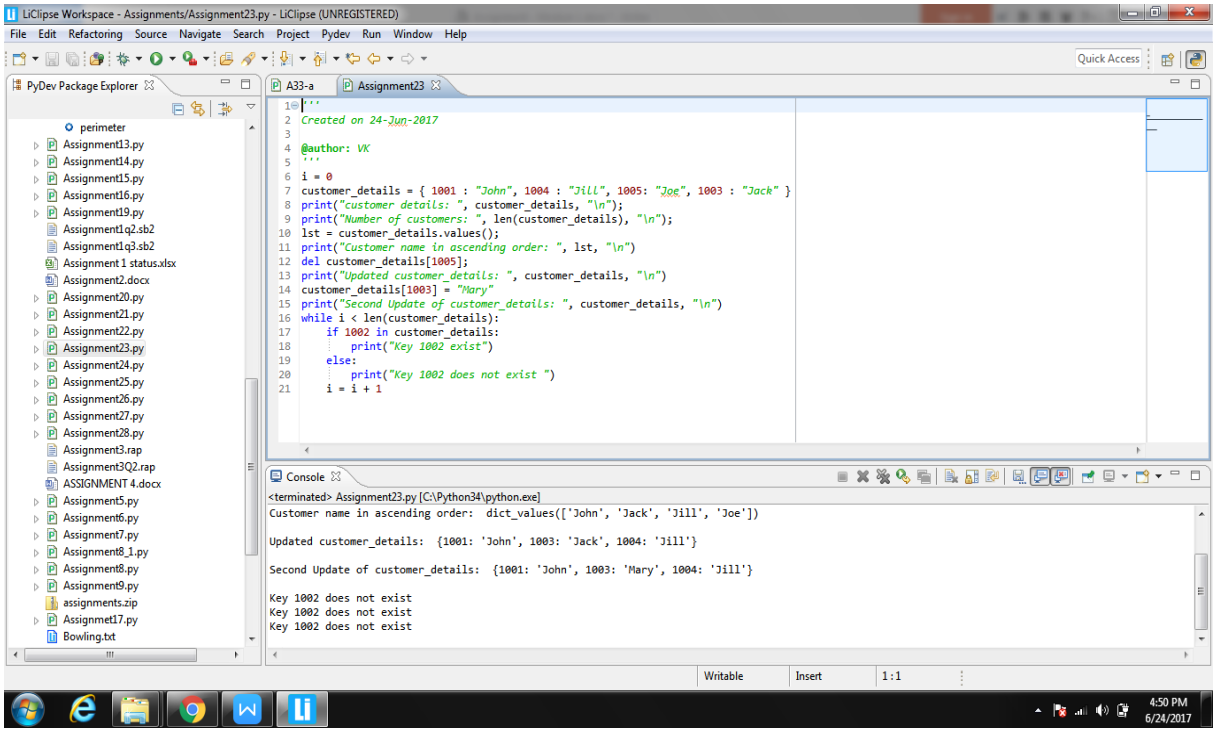
b)Print number of customers.

c)Print customer names in ascending order.

d)Delete the details of customer with customer id = 1005 and print updated dictionary.

e)Update the name of customer with customer id = 1003 to "Mary" and print updated dictionary.

f)Check whether details of customer with customer id = 1002 exists in the dictionary.



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SIGNATURE/REMARKS

ASSIGNMENT -24

Ques: Consider a scenario from ABC Training Institute. The given table shows the marks scored by students of grade XI in Python Programming course.

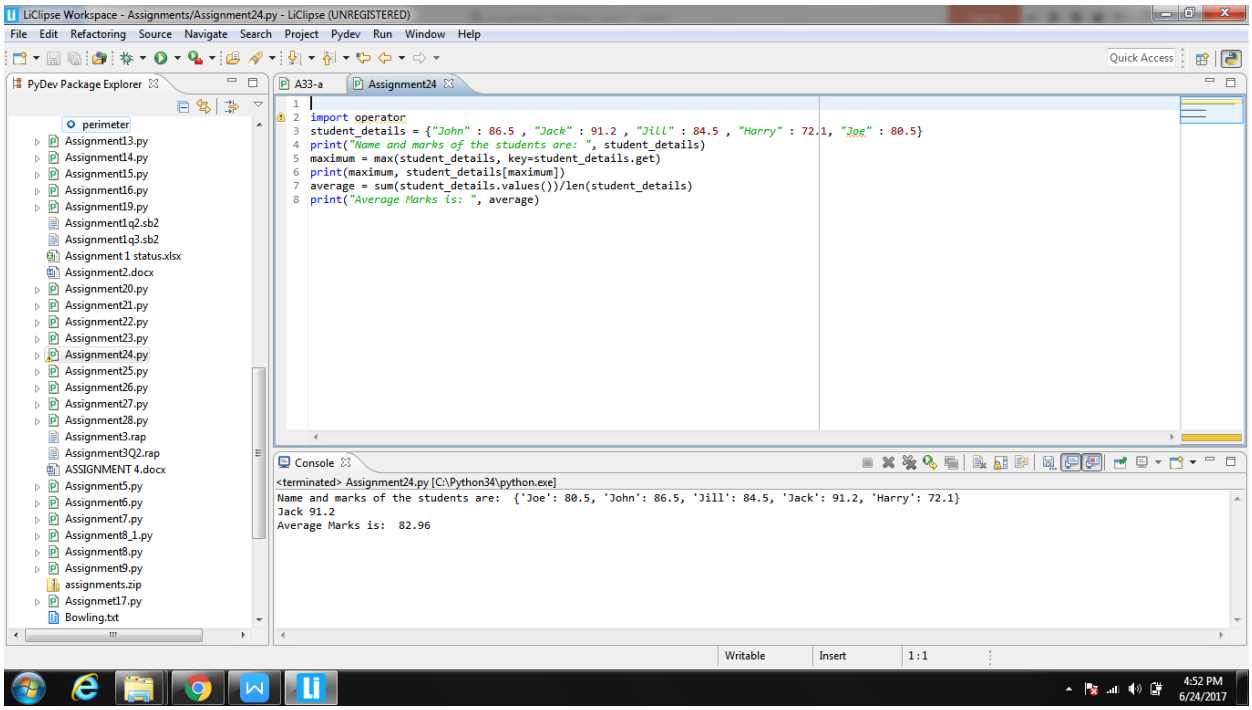
Write a Python program to meet the requirements mentioned below:

a. Display the name and marks for every student.

b. Display the top two scorers for the course.

c. Display class average of this course.

Hint- Implement the solution using a dictionary.



ASSIGNMENT- 25

Ques: Consider the scenario from "Variety Retail Store" discussed in 'List' section. The list of furniture available with its

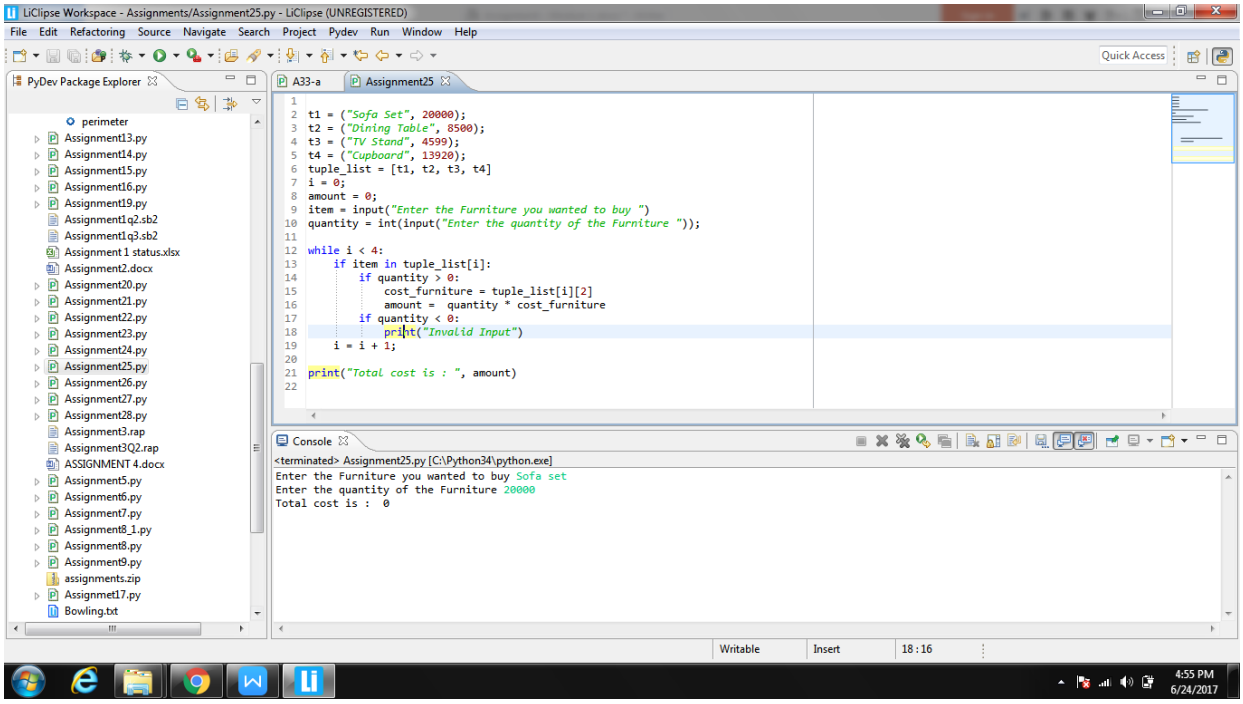
respective cost is given below:

A customer can order any furniture in any quantity. If the required furniture is available in the furniture list(given above) and quantity to be purchased is greater than zero, then bill amount should be calculated. In case of invalid values for furniture required by the customer and quantity to be purchased, display appropriate error message and consider bill amount to be 0. Initialize required furniture and quantity with di锝€erent values and test the results.

Calculate and display the bill amount to be paid by the customer based on the furniture bought and quantity purchased. Implement the given scenario using:

1)List of tuples

2)Dictionary



ASSIGNMENT- 26

Ques:Consider a scenario from ABC Training Institute. Given below are two Sets representing the names of students

enrolled for a particular course:

java_course = {"John", "Jack", "Jill", "Joe"}

python_course = {"Jake", "John", "Eric", "Jill"}

Write a Python program to list the number of students enrolled for:

1)Python course

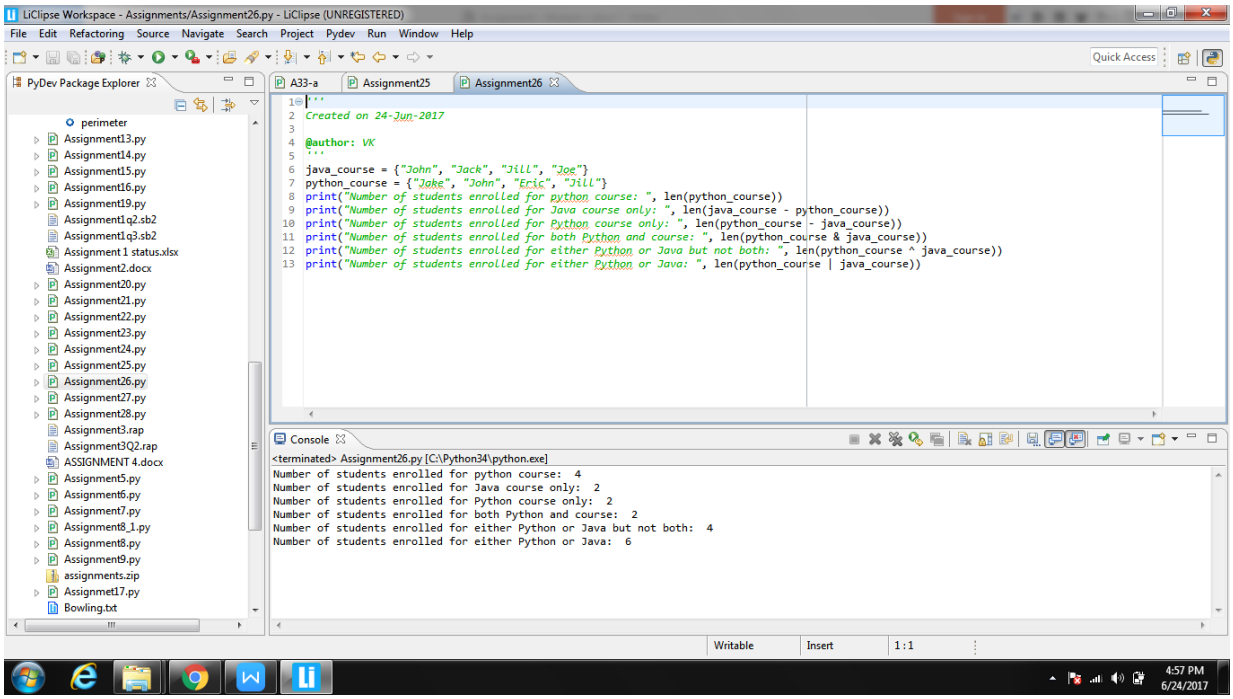
2)Java course only

3)Python course only

4)Both Java and Python courses

5)Either Java or Python courses but not both

Ans.



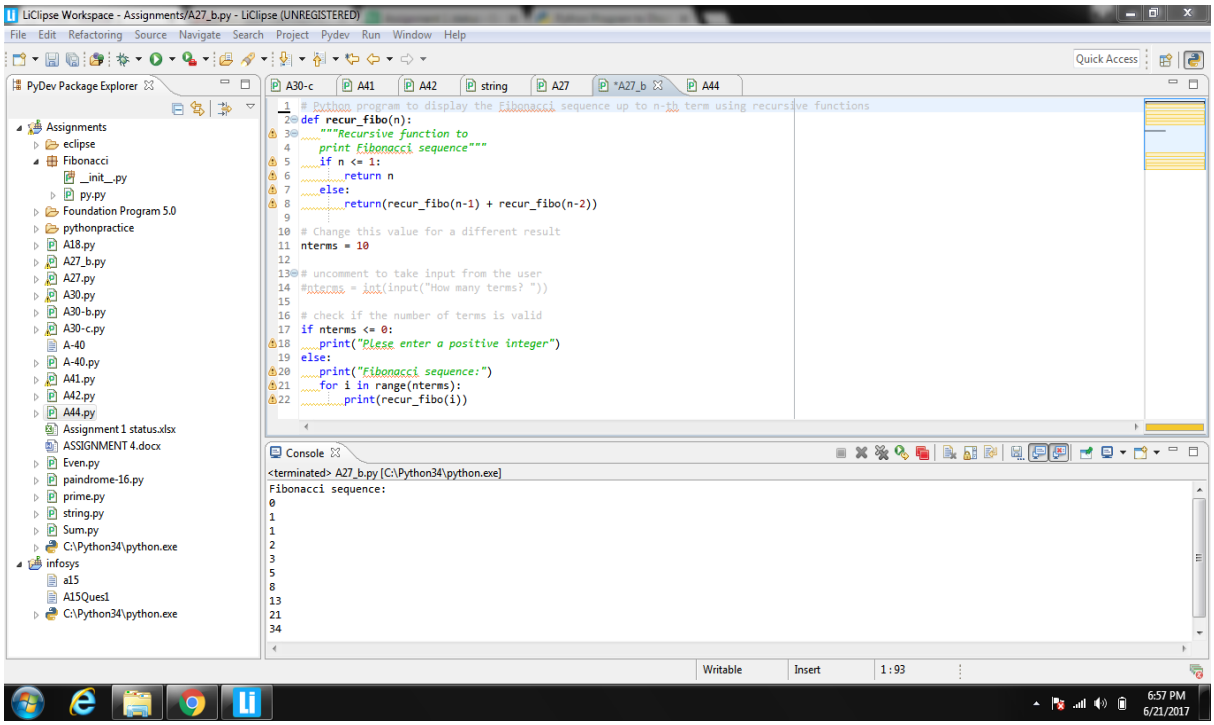
ASSIGNMENT- 27

Ques:

Using functions, re-write and execute Python program to:

1.Add natural numbers upto n where n is taken as an input from user.

2.Print Fibonacci series till nth term (Take input from user).



ASSIGNMENT -28

At an airport, a traveler is allowed entry into the flight only if he clears the following checks:

1.Baggage Check

2.Immigration Check

3.Security Check

The logic for the check methods are given below:

check_baggage (baggage_weight)

•.returns True if

baggage_weight

is greater than or equal to 0 and less than or equal to 40. Otherwise returns

False.

check_immigration (expiry_year)

•.returns True if

expiry_year

is greater than or equal to 2001 and less than or equal to 2025. Otherwise returns

False.

check_security(noc_status)

•.returns True if

noc_status

is 'valid' or 'VALID', for all other values return False.

traveler()

•.Initialize the traveler Id and traveler name and invoke the functions check_baggage(), check_immigration() and

check_security() by passing required arguments.

•.Refer the table below for values of arguments.

•.If all values of check_baggage(), check_immigration() and check_security() are true,

display traveler_id and traveler_name

display "Allow Traveler to fly!"

Otherwise,

display traveler_id and traveler_name

display "Detain Traveler for Re-checking!‘‘

Invoke the traveler() function. Modify the values of different variables in traveler() function and observe the output.

```
def check_baggage(baggage_weight):
    if(baggage_weight >= 0 and baggage_weight <= 40):
        return True
    return False

def check_immigration(expiry_year):
    if(expiry_year >= 2001 and expiry_year <= 2025):
        return True
    return False

def check_security(noc_status):
    if(noc_status == "valid" or noc_status == "VALID"):
        return True
    return False

def traveler():
    traveler_id = 1001
    traveler_name = "John"
```

```
    baggage_weight = 35
    expiry_year = 2019
    noc_status = "VALID"
    baggage_status = check_baggage(baggage_weight)
    immigration_status = check_immigration(expiry_year)
    security_status = check_security(noc_status)
    print("Traveler ID: ", traveler_id)
    print("Traveler name: ", traveler_name)
    if(baggage_status and immigration_status and security_status):
        print("Allow Traveler to fly")
        return
    print("Display Traveler for Rechecking!")
    return

traveler()
```

```
Traveler ID:  1001
Traveler name:  John
Allow Traveler to fly
```

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ASSIGNMENT-29

Ques: Consider the pseudo code for generating Fibonacci series using Recursion:

FIBO (number)

if (number = 0) then

return (0)

else if (number = 1) then

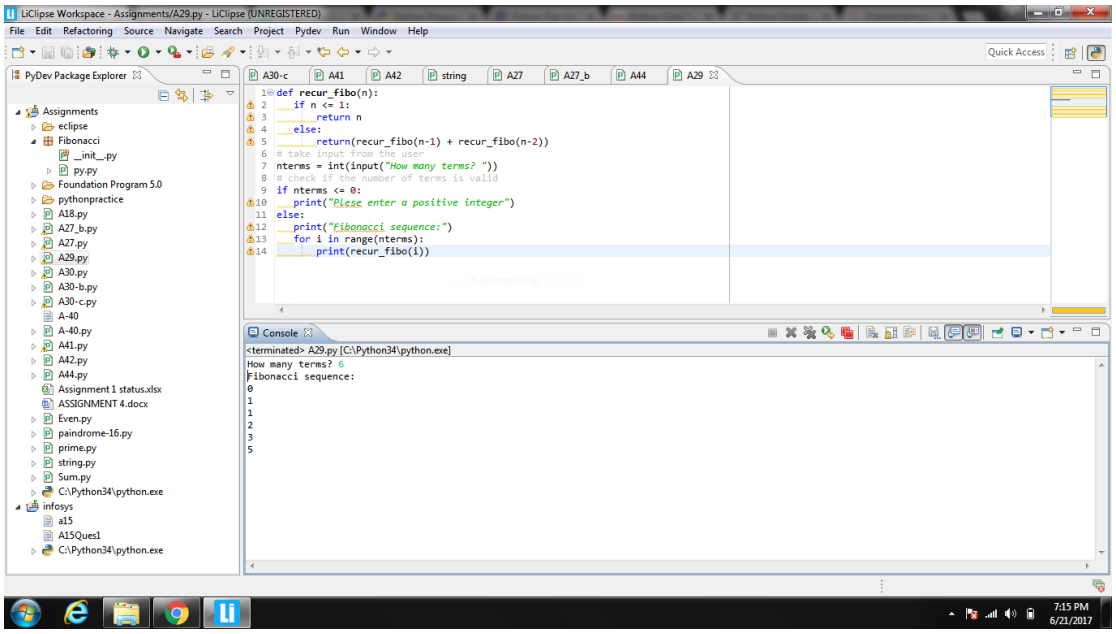
return (1)

else

return FIBO(number - 1) + FIBO(number - 2)

end if

Write a program in Python to implement the same using Recursion and execute it in Eclipse. Print appropriate error message if the user enters negative number as input



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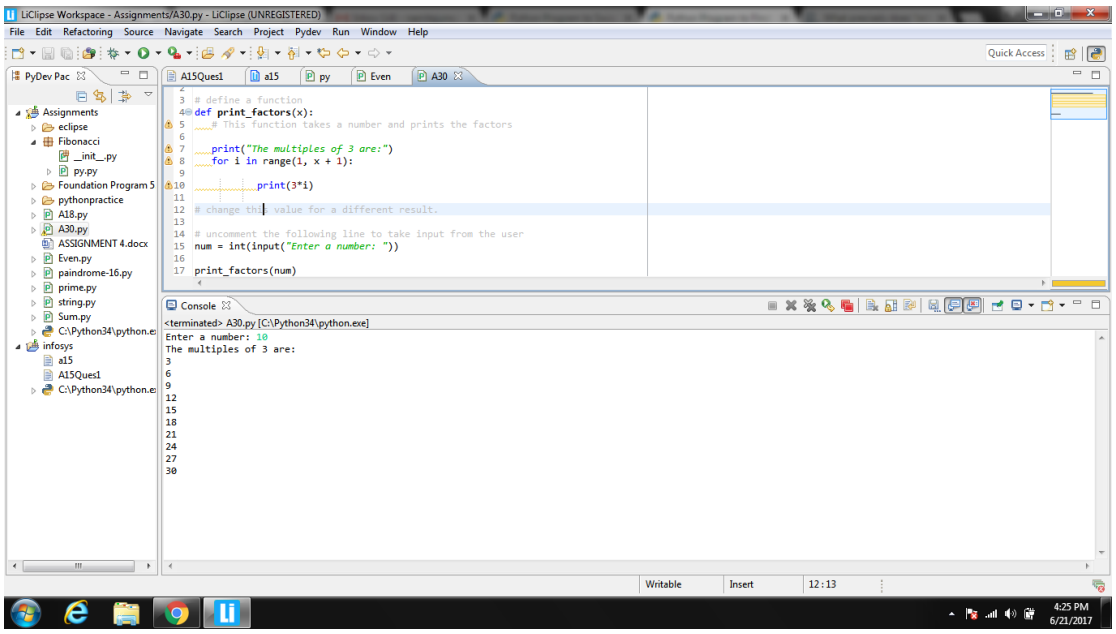
ASSIGNMENT-30

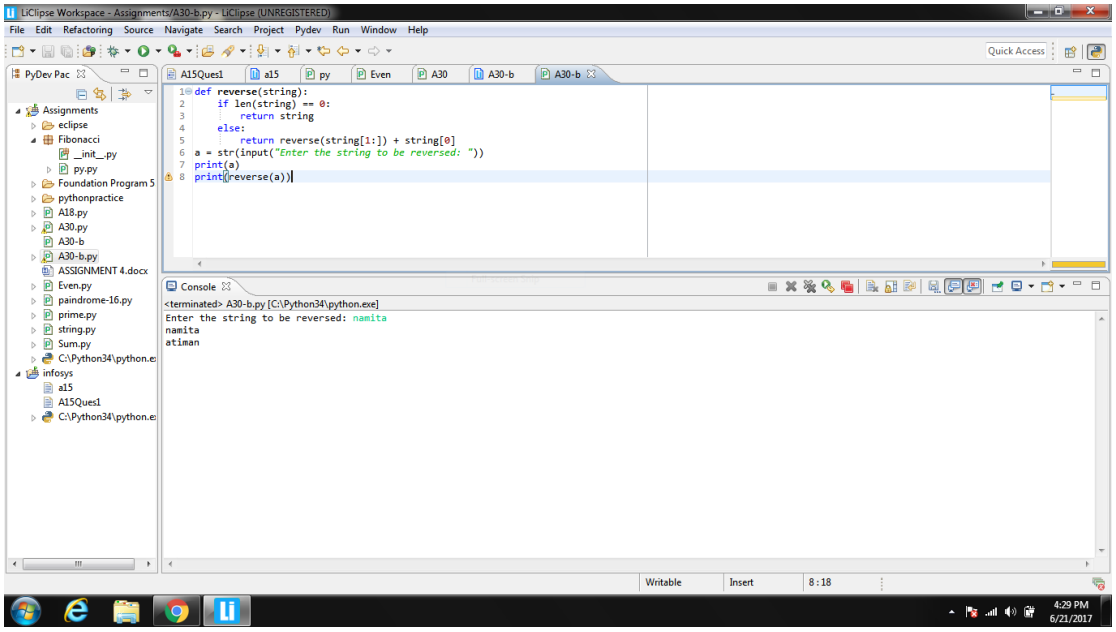
Ques: Write a Python program to implement the following (Use Recursion):

1.Print 'n' multiples of 3, where 'n' is taken as an input from the user. The multiples should be printed from to last.

2.Reverse a string. Print the original and reversed string.

3.Check if the given string is palindrome. If yes, print "String is palindrome" otherwise print "String is not palindrome




LiClipse Workspace - Assignments/A30-b.py - LiClipse (UNREGISTERED)
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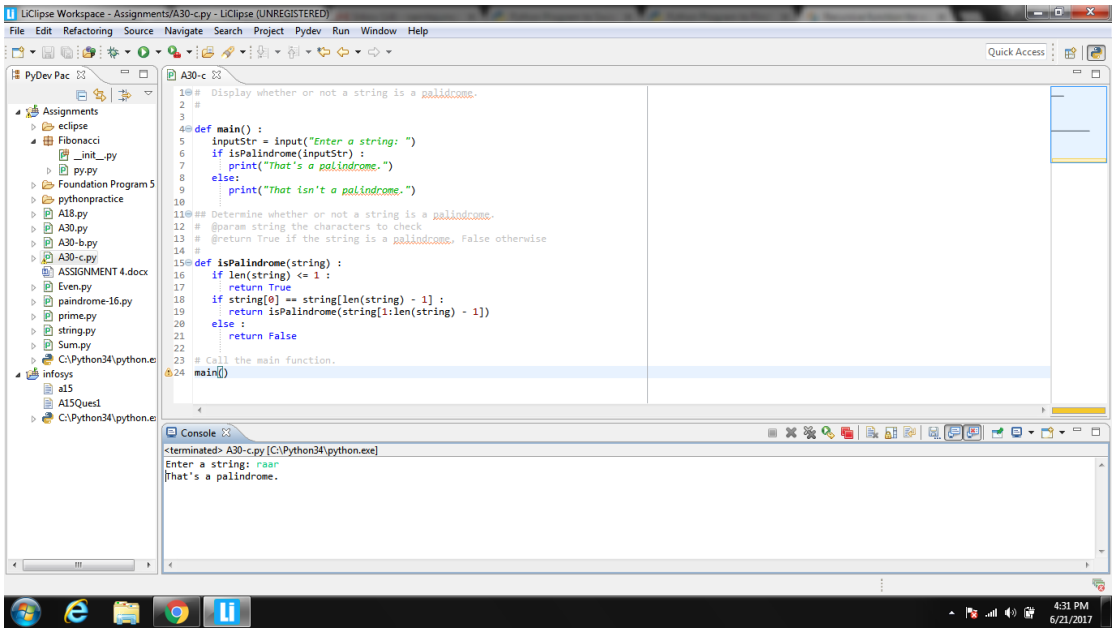
A15Ques1 a15 py Even A30 A30-b A30-b
def reverse(string):
if len(string) == 0:
return string
else:
return reverse(string[1:]) + string[0]
a = str(input("Enter the string to be reversed: "))
print(a)
print(reverse(a))
Console
<terminated> A30-b.py [C:\Python34\python.exe]
Enter the string to be reversed: namita
namita
atiman
Writable
Insert
8 : 18
4:29 PM
6/21/2017


LiClipse Workspace - Assignments/A30-c.py - LiClipse (UNREGISTERED)
File Edit Refactoring Source Navigate Search Project Pydev Run Window Help
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PyDev Pac
A30-c
Display whether or not a string is a palidrome.
#
def main() :
inputStr = input("Enter a string: ")
if isPalindrome(inputStr) :
print("That's a palindrome.")
else:
print("That isn't a palindrome.")
Determine whether or not a string is a palindrome.
@param string the characters to check
@return True if the string is a palindrome, False otherwise
#
def isPalindrome(string) :
if len(string) <= 1 :
return True
if string[0] == string[len(string) - 1] :
return isPalindrome(string[1:len(string) - 1])
else :
return False
# Call the main function.
main()
Console
<terminated> A30-c.py [C:\Python34\python.exe]
Enter a string: raar
That's a palindrome.
4:31 PM
6/21/2017

ASSIGNMENT-31

Ques:Write a Python program to:

1.read a file

2.add backslash (\) before every double quote in the filee contents.

3.write it to another file in the same folder.

4. print the content of both the files

```
file1 = open("TestFile1.txt", "r")
print("File opened successfully")
content = file1.read()
print("File read successfully")
file1.close()
print("File closed successfully")
print()
content_to_write = ""
for ch in content:
   if(ch=='"'):
      content_to_write = content_to_write + '/"'
   else:
      content_to_write = content_to_write + ch
print()
file2 = open("TestFile2.txt", "w+")
print("File opened successfully")
file2.write(content_to_write)
print("File written successfully")
file2.close()
```

print("File closed successfully"

ASSIGNMENT -32

Ques : Consider a file 'courses.txt' in D Drive with the following details:

Write a program to read the file and store the courses in Python variables as a:

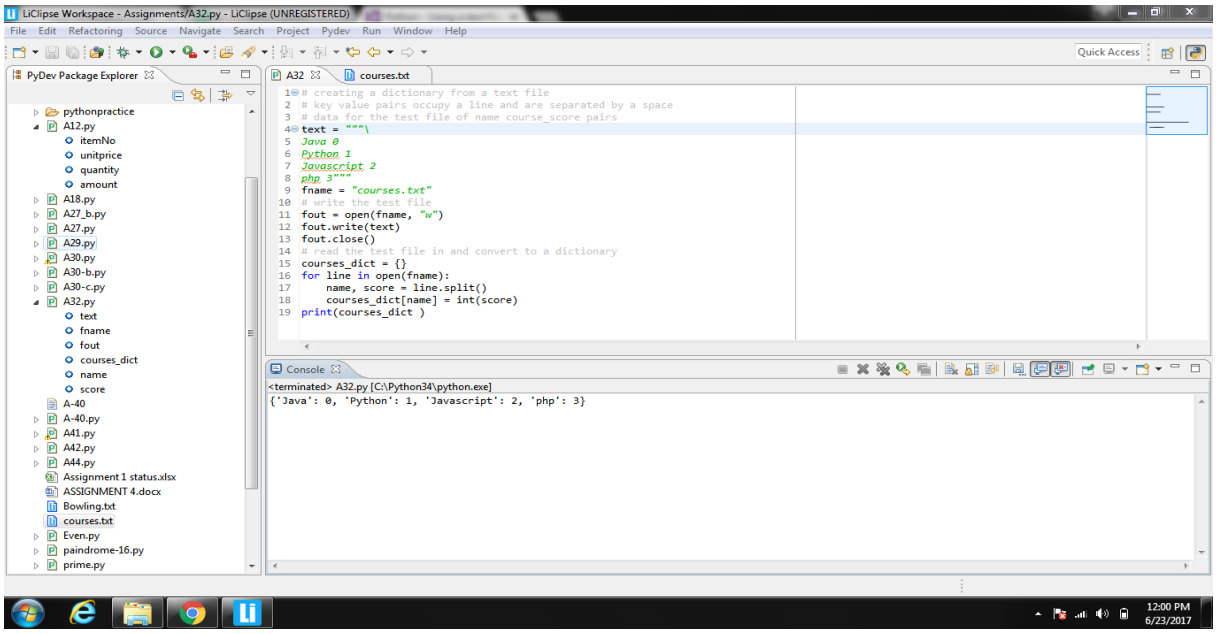
1)

Dictionary (Sample - {0: 'Java', 1: 'Python', 2:'Javascript' 3: 'PHP'})

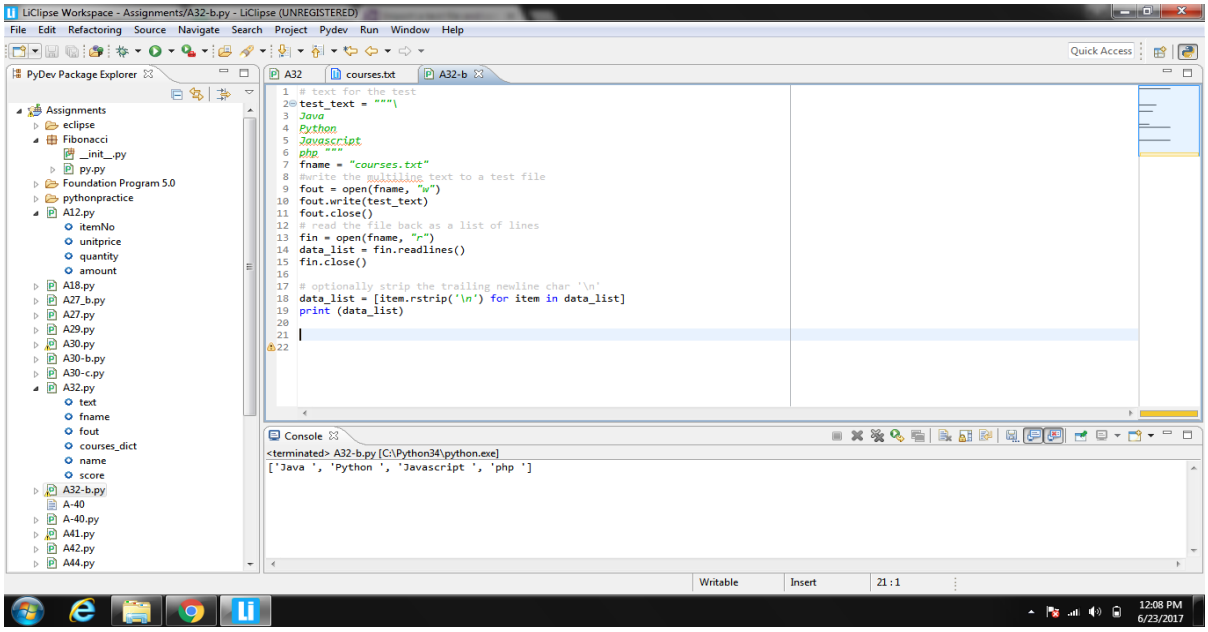
2)

List (Sample -

['Java', 'Python', 'Javascript', 'PHP'])



2)


LiClipse Workspace - Assignments/A32-b.py - LiClipse (UNREGISTERED)
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Quick Access
PyDev Package Explorer
Assignments
eclipse
Fibonacci
__init__.py
py.py
Foundation Program 5.0
pythonpractice
A12.py
itemNo
unitprice
quantity
amount
A18.py
A27_b.py
A27.py
A29.py
A30.py
A30-b.py
A30-c.py
A32.py
text
fname
fout
courses_dict
name
score
A32-b.py
A-40
A-40.py
A41.py
A42.py
A44.py
A32
courses.txt
A32-b
# text for the test
test_text = """\
Java
Python
Javascript
php """
fname = "courses.txt"
#write the multiline text to a test file
fout = open(fname, "w")
fout.write(test_text)
fout.close()
# read the file back as a list of lines
fin = open(fname, "r")
data_list = fin.readlines()
fin.close()
# optionally strip the trailing newline char '\n'
data_list = [item.rstrip('\n') for item in data_list]
print (data_list)
Console
<terminated> A32-b.py [C:\Python34\python.exe]
['Java ', 'Python ', 'Javascript ', 'php ']
Writable
Insert
21 : 1
12:08 PM
6/23/2017

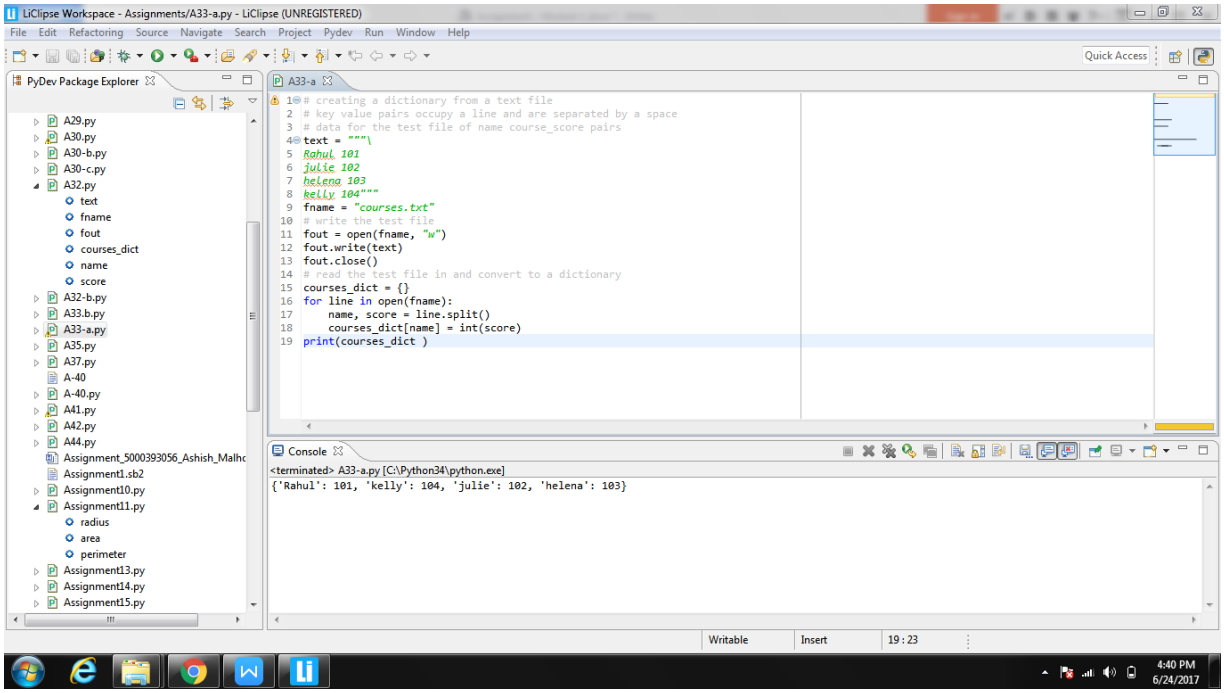
ASSIGNMENT-33

Ques:Consider a file 'student_details.txt' in D Drive with the details of students in ABC institute – student id and name:

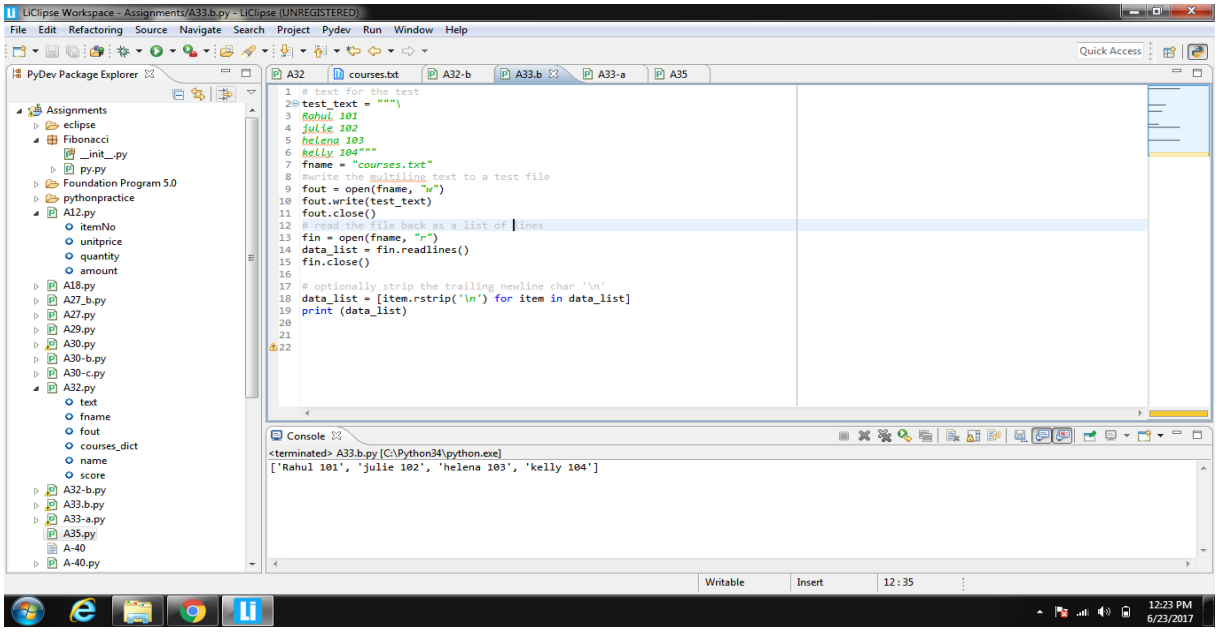
Write a program to read the file and store the student records in Python variable as:

1)List of lists

2)List of dictionaries



2)



ASSIGNMENT-34

Ques:Write a Python program to count the words in the file using a dictionary (use space as a delimiter). Find unique

words and the count of their occurrences(ignoring case). Write the output in another file "words.txt" at the same

location.

```
file = open("D://rhyme.txt", "r")

content = file.read().lower()

file.close()


unique_words = set(content.split())


words_count = {}
```

```
for word in unique_words:
    count = 0
    for word1 in content.split():
        if(word1 == word):
            count = count + 1
    words_count[word.capitalize()] = count

file = open("D://words.txt", "w+")
file.write("Number of words: %d\n\n" % (len(content.split())))
file.write("Unique Words\t\tOccurences\n\n")

for word, count in words_count.items():
    file.write("%s\t\t\t%d\n" % (word, count))

file.close()
```

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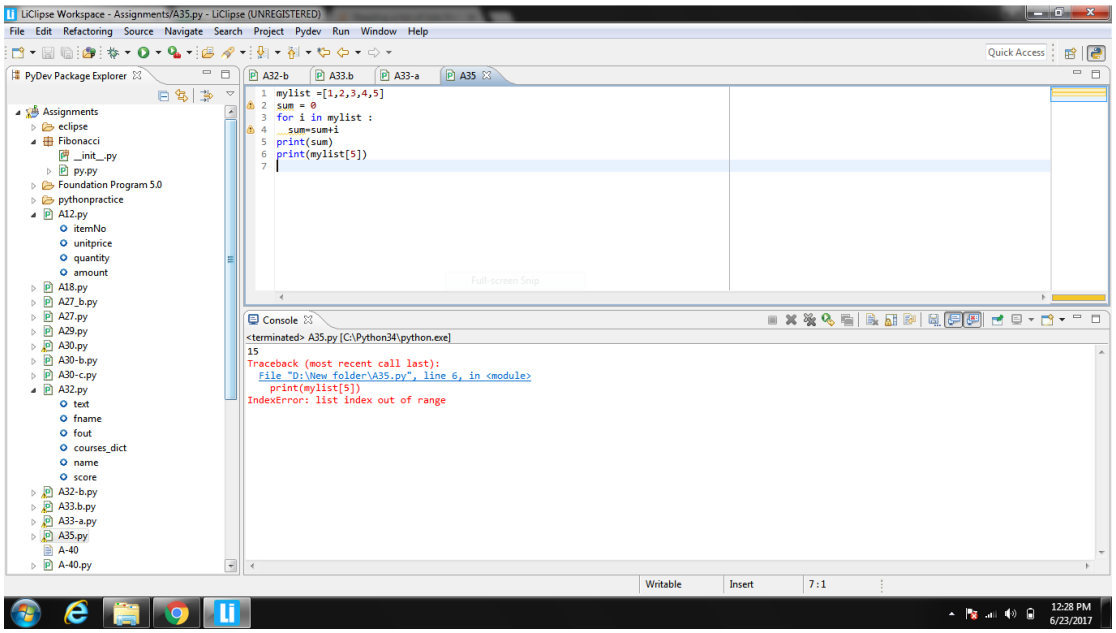
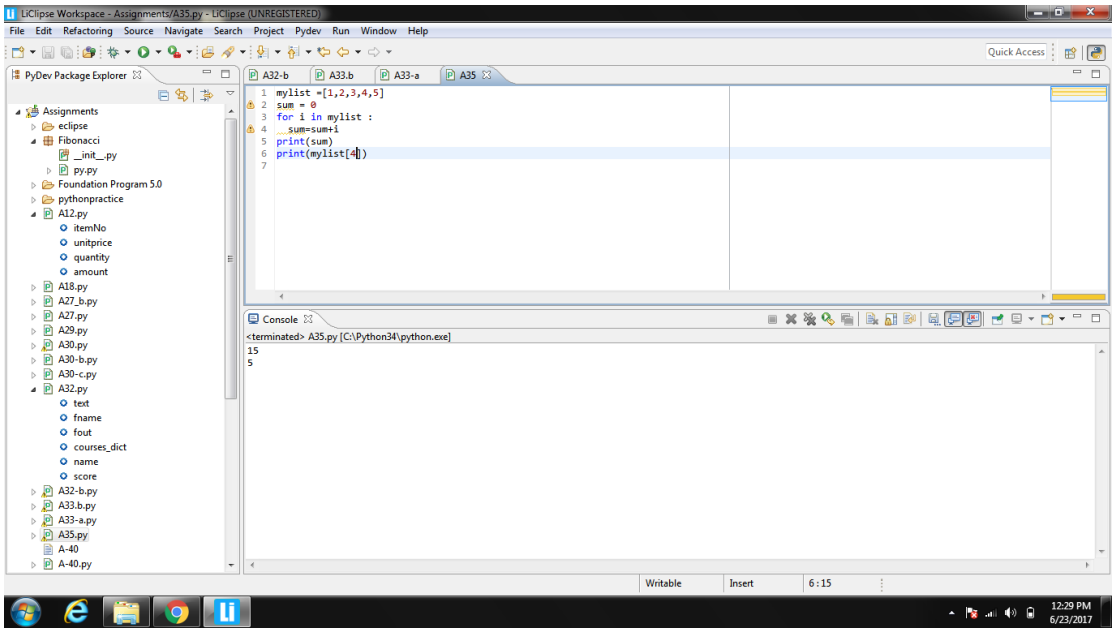
SIGNATURE/REMARKS

ASSIGNMENT-35

Ques: Rewrite the code to handle the exceptions raised. Print appropriate error messages wherever applicable





ASSIGNMENT-36

Ques:You have already created a Python program to implement the following in file handling section:

1.read a file.

2.add backslash (\) before every double quote in the file contents.

3.write it to another file in the same folder.

4.print the contents of both the files.

```
try:
    file1 = open("TestFile1.txt", "r")
    content = file1.read()
    file1.close()
    content_to_write = ""
    for ch in content:
        if(ch=='"'):
            content_to_write = content_to_write + '/"'
        else:
            content_to_write = content_to_write + ch
    print()
    file2 = open("TestFile2.txt", "w+")
    file2.write(content_to_write)
    file2.close()
except IOError:
    print("Particular file could not be opened or read or written")
```

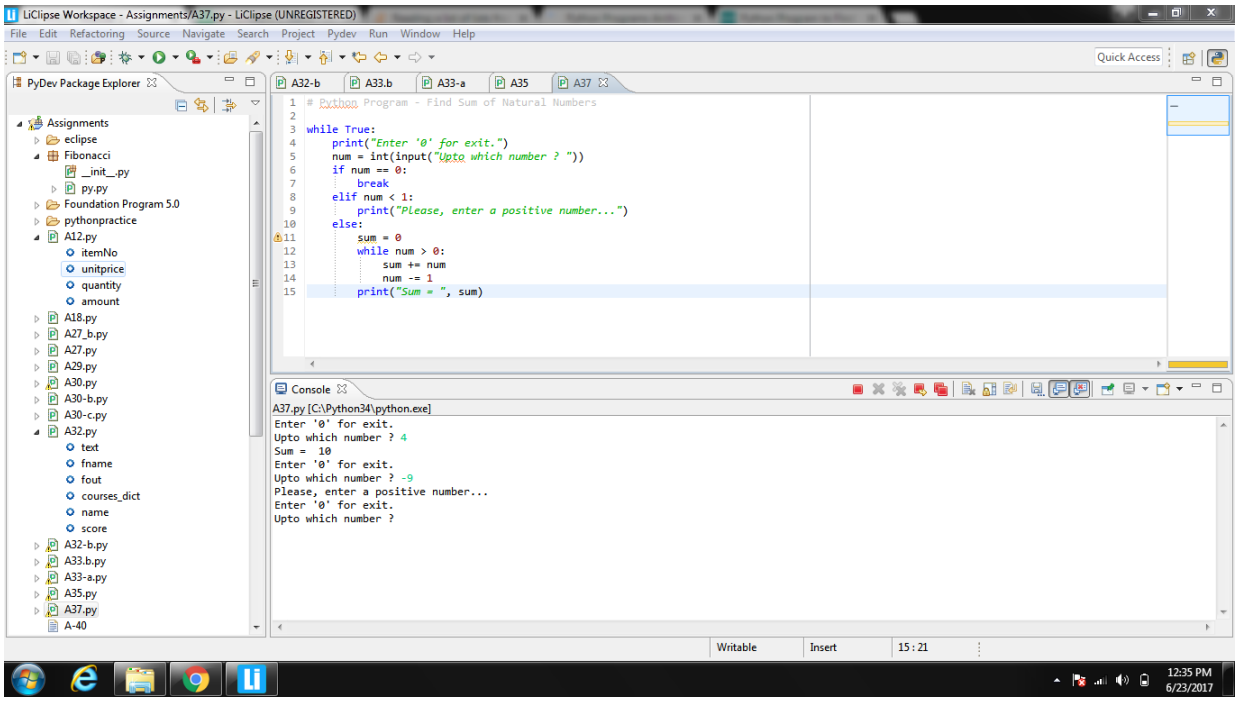
```
else :
    print("Operation performed successfully")
```

ASSIGNMENT 37

Ques You have already executed the Python program given below in Functions section:

•Add natural numbers up to n where n is taken as an input from user.

Do appropriate exception handling in the code and observe the output by providing invalid input values.



ASSIGNMENT- 38

Ques:Refer to the following assignment which you have already executed in Functions section. Modify your code to implement Exception Handling and display appropriate error message wherever applicable.At an airport, a traveler is allowed entry into the flight only if he clears the following checks:

1.Baggage Check

2Immigration Check

3.Security Check

The logic for the check methods are given below:

check_baggage (baggage_weight)

•returns True if

baggage_weight

is greater than or equal to 0 and less than or equal to 40. Otherwise returns

False.

check_immigration (expiry_year)

•returns True if

expiry_year

is greater than or equal to 2001 and less than or equal to 2025. Otherwise returns

False.

check_security(noc_status)

•returns True if

noc_status

is 'valid' or 'VALID', for all other values return False.

traveler()

•Initialize the traveler Id and traveler name and invoke the functions check_baggage(), check_immigration() and

check_security() by passing required arguments.

•Refer the table below for values of arguments.

•If all values of check_baggage(), check_immigration() and check_security() are true,

display traveler_id and traveler_name

display "Allow Traveler to fly!"

Otherwise,

display traveler_id and traveler_name

display "Detain Traveler for Re-checking!‘‘

Invoke the traveler() function. Modify the values of different variables in traveler() function and observe the output.

```
def check_baggage(baggage_weight):
    if(baggage_weight >= 0 and baggage_weight <= 40):
        return True
    return False

def check_immigration(expiry_year):
    if(expiry_year >= 2001 and expiry_year <= 2025):
        return True
    return False

def check_security(noc_status):
    if(noc_status == "valid" or noc_status == "VALID"):
        return True
    return False
```

```
def traveler():
    traveler_id = 1008
    traveler_name = "John"
    baggage_weight = "forty"
    expiry_year = 2022
    noc_status = "NOT VALID"
    try:
        baggage_status = check_baggage(baggage_weight)
        immigration_status = check_immigration(expiry_year)
        security_status = check_security(noc_status)
    except TypeError:
        print("Baggage weight and expiry year must be natural numbers")
    else:
        print("Traveler ID: ", traveler_id)
        print("Traveler name: ", traveler_name)
        if(baggage_status and immigration_status and security_status):
            ("Allow Traveler to fly")
            return
        print("Display Traveler for Rechecking!")
        return

traveler()
```

```
Baggage weight and expiry year must be natural numbers
>>>
```

ASSIGNMENT-39

Ques:Create a module "number_checker.py" which has following 2 functions:

•is_prime(num) : this function returns true if the input number is prime

•is_even(num): this function returns true if the input number is even

•Create another Python module "test_module.py".

•Invoke the functions "is_prime(num)" and "is_even(num)" in "test_module.py".

•Observe the results.

Hint: Import

"number_checker.py" module in "test_module.py" before using it's functions

```
def is_prime(num):
   for i in range(2,num):
      if(num % i == 0):
         return False
   return True

def is_even(num):
   return (num % 2 == 0)
```

```
import number_checker
num = int(input("Enter a number:- "))
if(number_checker.is_prime(num)):
   print("%d is a prime number" % num)
else:
   print("%d is not a prime number" % num)
if(number_checker.is_even(num)):
```

```
    print("%d is a even number" % num)
else:
    print("%d is not a even number" % num)
```

```
Enter a number:- 2
2 is a prime number
2 is a even number
>>>
```

ASSIGNMENT- 40

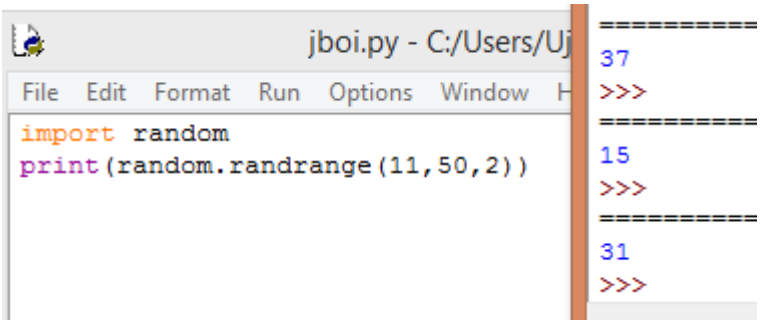
Write a Python program to randomly print any of the below numbers:
100,200,300,400,500,600,700,800,900,1000
Execute the program 10 times and verify if the number generated in every output is one out of the numbers
given in the list above.

```
import random

#Print any of 100,200,300,400,500,600,700,800,900,1000
x = random.randrange(100,1000,100)
print(x)

print()

#Print odd number between 10 & 50
x = random.randrange(11,50,2)
print(x)
```

```
800

31
>>>
```

•

Write a Python program to print a random odd numbers between 10 and 50.



ASSIGNMENT-41

Write a Python program for rolling a dice on clicking enter key. The program should run infinitely until user enters 'q'.

```
import random

ch = input("Press any key (+ Enter) to roll a dice (q to quit): ")
while(ch.lower() != 'q'):
    print("Dice rolled: ", random.randint(1,6))
    print()
    ch = input("Press any key (+ Enter) to roll a dice again (q to quit): ")
```

```
Press any key (+ Enter) to roll a dice (q to quit):
Dice rolled:  1

Press any key (+ Enter) to roll a dice again (q to quit):
Dice rolled:  4

Press any key (+ Enter) to roll a dice again (q to quit):
Dice rolled:  3

Press any key (+ Enter) to roll a dice again (q to quit):
Dice rolled:  2

Press any key (+ Enter) to roll a dice again (q to quit): q
>>>
```

ASSIGNMENT-42

If area of one wall of a cubical wooden box is 16 units, write a Python program to display the volume of the box.
Note:
Area of a cube with side 'a' is 'a**2'.
Volume of the cube can be computed as 'a**3'.
Hint: Make use of 'sqrt' and 'pow' functions from math module.
Duration : 10 mins

```
import math
area=16
side=math.sqrt(area)
volume=math.pow(side,3)
print(volume)
```

```
64.0
```

ASSIGNMENT-43

The ABC Institute offers vocational courses to students in multiple areas e.g. theatre, classical singing, traditional
dance forms, Bollywood dance, literature and so on. A student can enroll for zero to all courses. Write a Python function that takes the number of courses as an input and returns the total number of different
course combinations, a student can opt for. (Make use of functions available in math module

```
import math
num=int(input("Enter number of courses"))
print(math.factorial(num))
```

```
Enter number of courses4
24
```

ASSIGNMENT-44

Execute the following code and observe the output.

1.
import time
2.
print(time.time())
3.
print(time.localtime())
4.
print(time.localtime(time.time()))
5.
print(time.asctime())
6.
mytime = (2016,7,27,15,45,23,0,0,0)
7.
print(time.localtime(time.mktime(mytime)))

```
>>> import time
>>> time.time()
1498675762.6218405
>>> time.localtime()
time.struct_time(tm_year=2017, tm_mon=6, tm_mday=29, tm_hour=0, tm_min=19, tm_se
c=36, tm_wday=3, tm_yday=180, tm_isdst=0)
>>> time.localtime(time.time())
time.struct_time(tm_year=2017, tm_mon=6, tm_mday=29, tm_hour=0, tm_min=20, tm_se
c=15, tm_wday=3, tm_yday=180, tm_isdst=0)
>>> time.asctime()
'Thu Jun 29 00:20:32 2017'
>>> mytime=(2017,6,29,0,20,0,3,180,0)
>>> print(time.localtime(time.mktime(mytime)))
time.struct_time(tm_year=2017, tm_mon=6, tm_mday=29, tm_hour=0, tm_min=20, tm_se
c=0, tm_wday=3, tm_yday=180, tm_isdst=0)
>>>
```

ASSIGNMENT-45

Consider a Python string:

cust_details = "Hello John, your customer id is j181"

1)

Find, if the name of the customer is preceded by a pattern "Hello " or "hello " (Observe a space after the word)?

If pattern is found, print the searched result.

2)

Find, if the given string ends with a pattern containing only one alphabet followed by three numbers? If pattern

is found, print the searched result.

3)

Replace the word starting with "j" followed by three numbers to only the number(remove the alphabet).

4)

Replace the word "id" with "ID".

The output of the above code is "

Hello John, your customer ID is 181

```
import re
str="Hello John,your customer id is j181"
match= re.search('Hello ',str)
print(match.group())

match= re.search('j\d{3}',str)
print(match.group())

print(re.sub('j(\d{3})',r'\1',str))
print(re.sub('id','ID',str))
```

```
Hello
j181
Hello John,your customer id is 181
Hello John,your customer ID is j181
```

"

ASSIGNMENT-46

Consider a scenario of managing student details in ABC Training Institute. Write a Python program to implement the

business requirements mentioned below:

a)

Accept student_id and validate whether it contains only digits.

b)

If student _id is valid, accept student_name from the user and validate whether it contains only alphabets.

c)

If student_name is valid, accept fees_amount paid by the student:

1.

Decimal point is optional in fees_amount(can have maximum one decimal point)

2.

Only two digits are allowed after decimal point

d)

If invalid data is entered in any of the above steps, display appropriate error messages. Else, create an email_id

for student as

student_name@ABC.com

. Assume there are no duplicate names.

e)

Perform above validations using Regular Expressions and print details of the student: student_id,

student_name, fees_amount, email_id

Duration : 20 mins

```
stu_id=input("enter student id")
if(re.search('\d', stu_id)):
    stu_name=input("Enter student name")
    if(re.search('\D', stu_name)):
        fee_amt=input("Enter fee amount")
        if(re.search('\d|\.\d{2}',fee_amt)):
            email=stu_name + "@ABC.com"
        else:
            print("FEE must not have more then two decial values")
    else:
        print("student name must be alphabets")
else:
    print("student id must be numbers")

print(stu_id,stu_name,fee_amt,email)
```

```
enter student id101
Enter student nameujjawal
Enter fee amount151544.12
101 ujjawal 151544.12 ujjawal@ABC.com
```

ASSIGNMENT-47

Consider a string:
my_string = “””Strings are amongst the most popular data types in Python. We can create the strings by enclosing
characters in quotes. Python treats single quotes the same as double quotes.”””
1) Write a Python program to count the number of occurrences of word "String" in the given string ignoring the
case.
2) Write a function "count_words" to print the count of occurrences of a word:
a) which end with "on". (e.g. Python)
b) which have "on" in between the first and last characters (e.g. amongst)
Duration : 10 mins

```
my_string = "Strings are amongst the most popular data types in Python . We can create the strir
print(my_string.count("string" or "String"))
t=my_string.split()
c=0
for i in range(0,len(t)):
    if(t[i].endswith("on")):
        c+=1
print("NUmber of word ending with 'on' are ",c)
```

```
1
NUmber of word ending with 'on' are  2
```

ASSIGNMENT-48

Consider the price list of various items in the Retail Store:

item_price = [1050, 2200, 8575, 485, 234, 150, 399]

Customer John wants to know the:

1.

Price of costliest item sold in retail store

2.

Number of items in the Retail store

3.

Prices of items in increasing order

4.

Prices of items in descending order

Implement the above mentioned business requirements using built-in List functions.

Hint –

1) Use max, len, sort functions of math module.

2) For question 3 and 4, display the list in increasing/decreasing order.

```
tem_price = [1050, 2200, 8575, 485, 234, 150, 399]
print(max(tem_price))
print(len(tem_price))
print(sorted(tem_price))
print(sorted(tem_price,reverse = True))
```

```
8575
7
[150, 234, 399, 485, 1050, 2200, 8575]
[8575, 2200, 1050, 485, 399, 234, 150]
```

ASSIGNMENT-49

Built-in function in Python which accepts any data structure (list, string, tuple, dictionary and set) and returns a

sorted list.

```
def my_sort(data,order=True):
    if(order):
        return sorted(data)
    else:
        return sorted(data, reverse=True)
tem_price = [1050, 2200, 8575, 485, 234, 150, 399]
print(my_sort(tem_price, False))
print(my_sort(tem_price))
```

```
[8575, 2200, 1050, 485, 399, 234, 150]
[150, 234, 399, 485, 1050, 2200, 8575]
```

END OF MODULE-1