Mawlana Bhashani Science And Technology University

Lab-Report

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Theory :

Python is an easy to learn, powerful programming language. It has efficient highlevel data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.

Setup of Python Environment

STEP 1: Open Eclipse and setup a correct access to Internet (This is required only in RMIT network). In order to set up Manual Proxy follow the instructions (see also figure 1):

a. Go to **Windows > Preferences > General > Network Connections**.

b. Change Active Provider to Manual.

c. Input proxy details, including username/password if required.

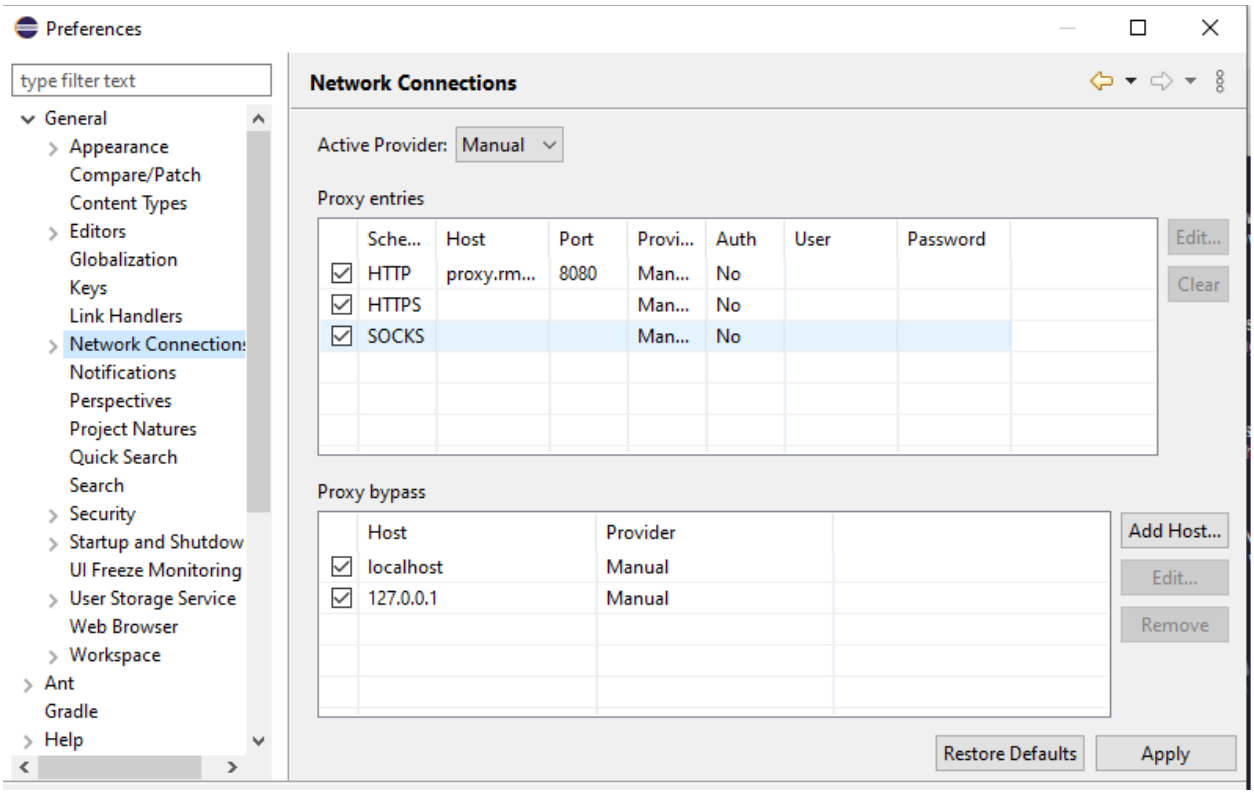
Host : proxy.rmit.edu.au

Port : 8080

Username/password : No required

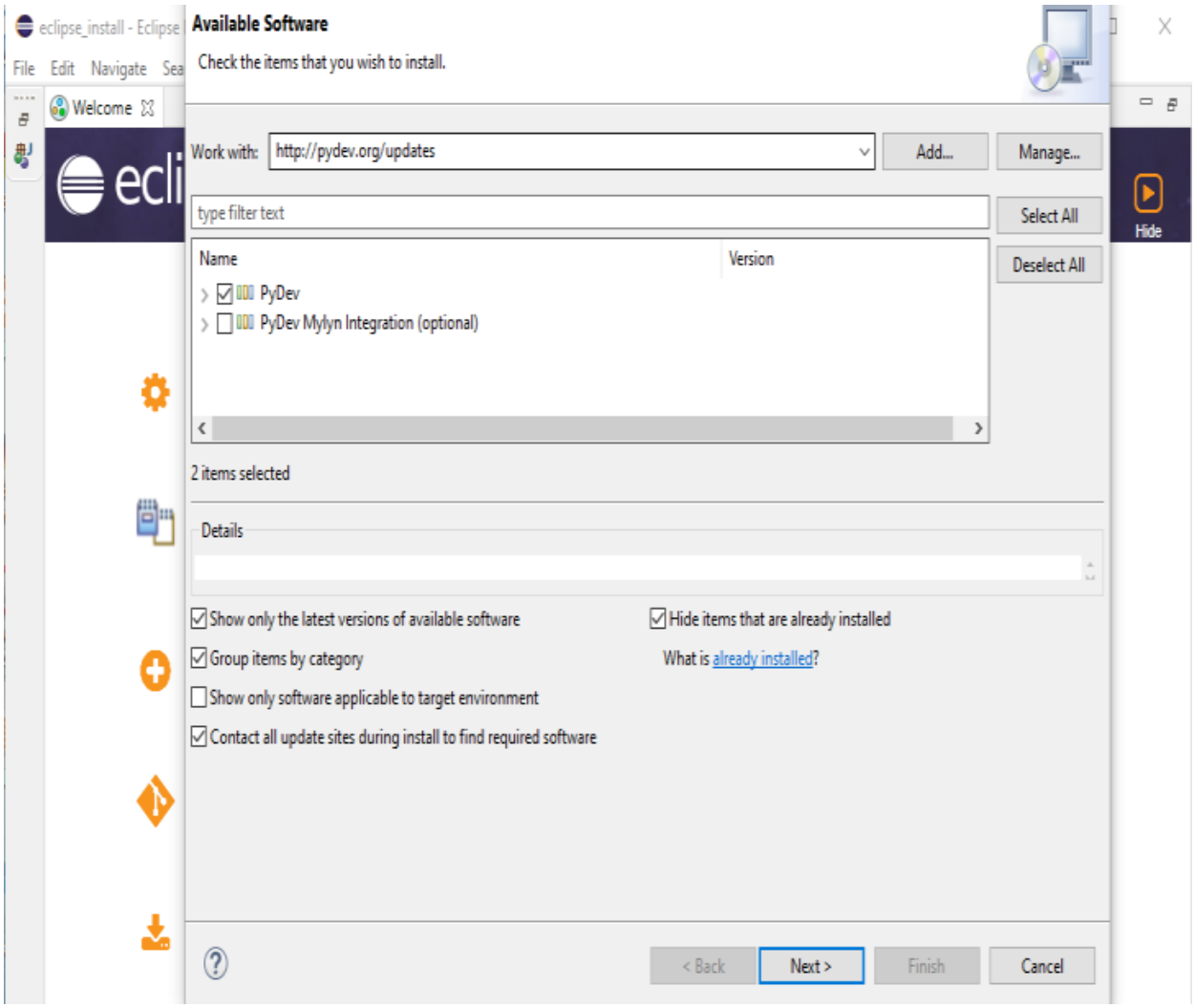
d. Clear SOCKS proxy.

e. Restart Eclipse.



STEP 2 : Installing python environment using Eclipse Graphical Interface1.
a. To install PyDev and PyDev Extensions using the Eclipse Update Manager, you need to use the

Help > Install New Software... menu (note that in older versions, this would be the 'Find and Install' menu) as shown in the following figure:



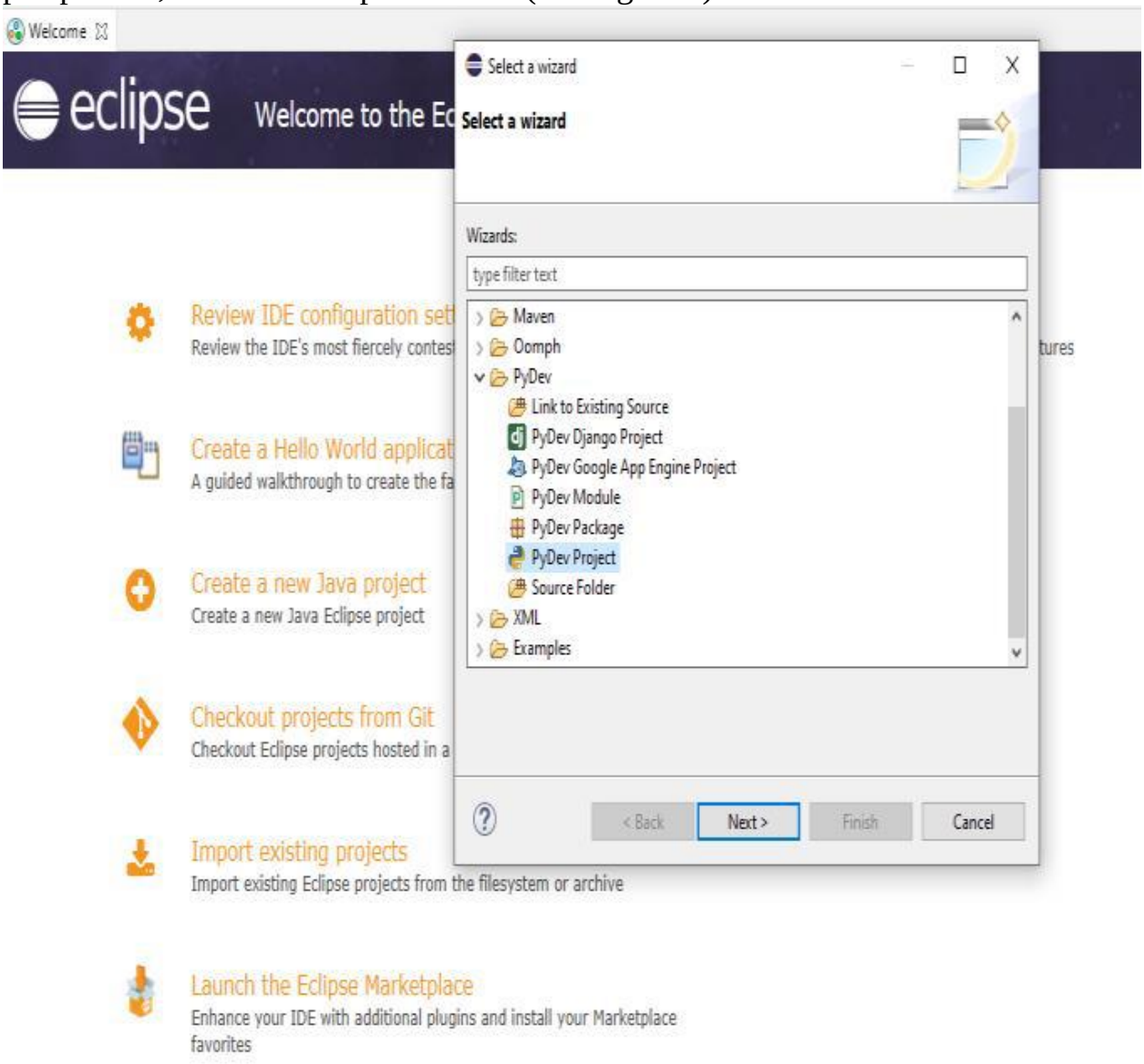
C. After entering the update sites, select the update site you entered or select "All available sites" and add a filter for PyDev, so that it shows the contents of all the update sites that have PyDev, then select what you want to install and click

D. Then, UNCHECK the ‘Contact all update sites during install to find required software’ and press ‘NEXT’ again to confirm your selection

E. And finally, read the license agreement if you accept, select the accept radio button and click ‘Finish’

STEP 2 : Checking the installation: You can verify if it is correctly installed going to the menu 'window> preferences' and checking if there is a PyDev item under that

(see Figure 7). After that eclipse will display the graphical interface for python perspective, the main components are (see Figure 8):

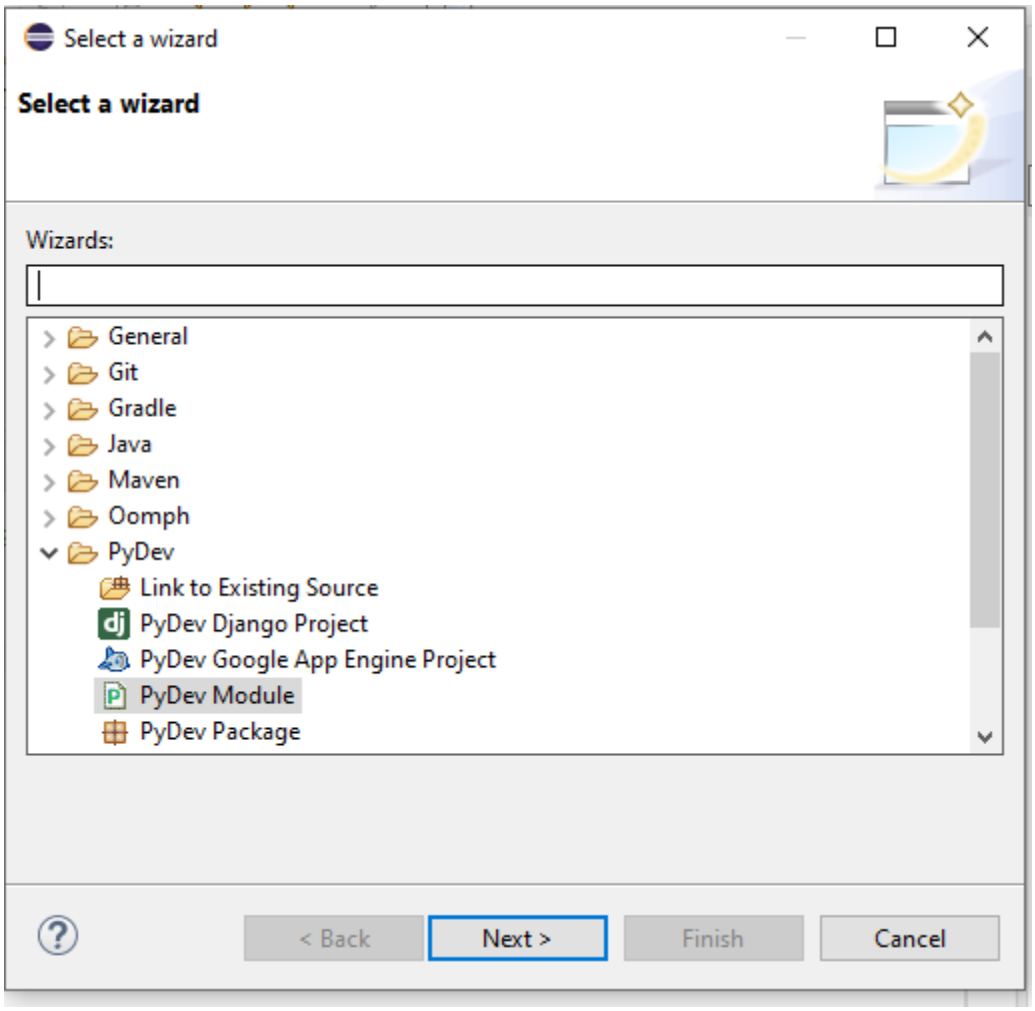


Exercises

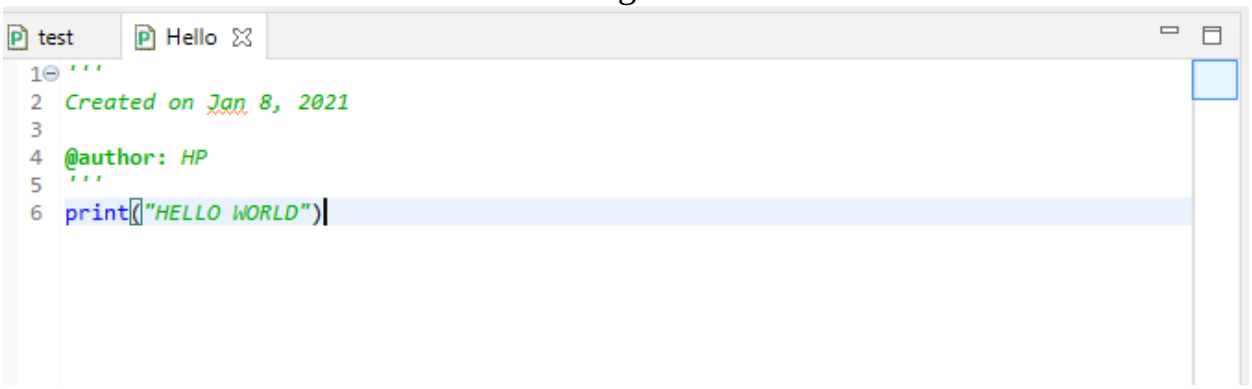
Section 4.1: Basics of python and programing

Exercise 4.1.1: Create a python project.

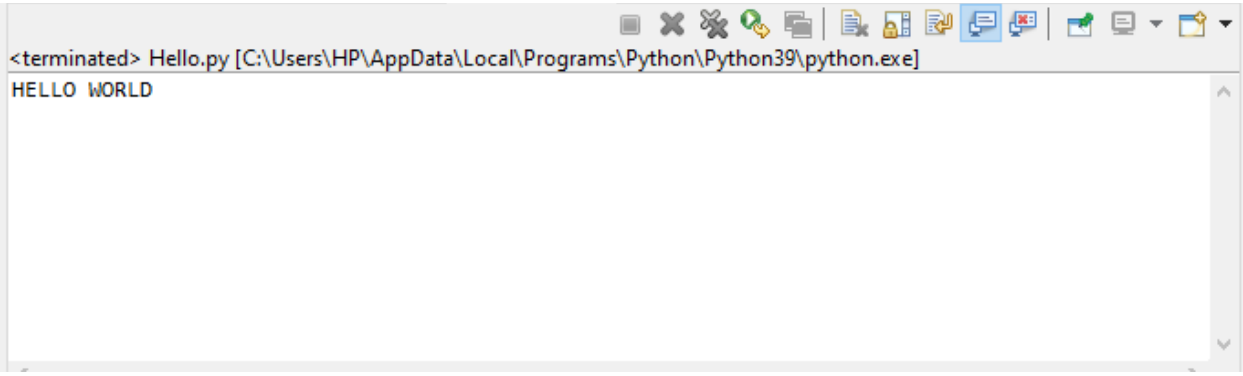
Answer:



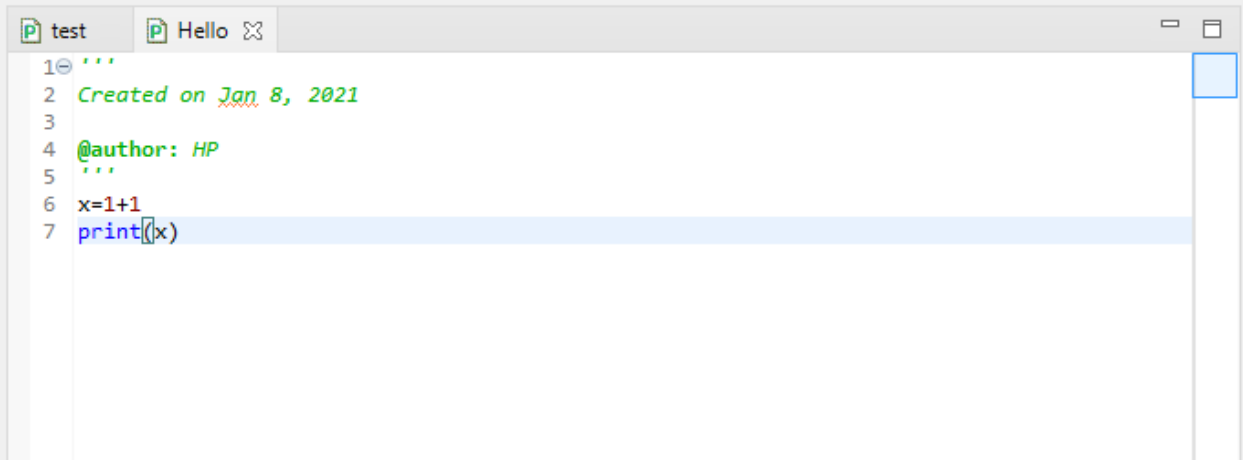
Exercise: 4.1.2 : Write a Hello World Program.



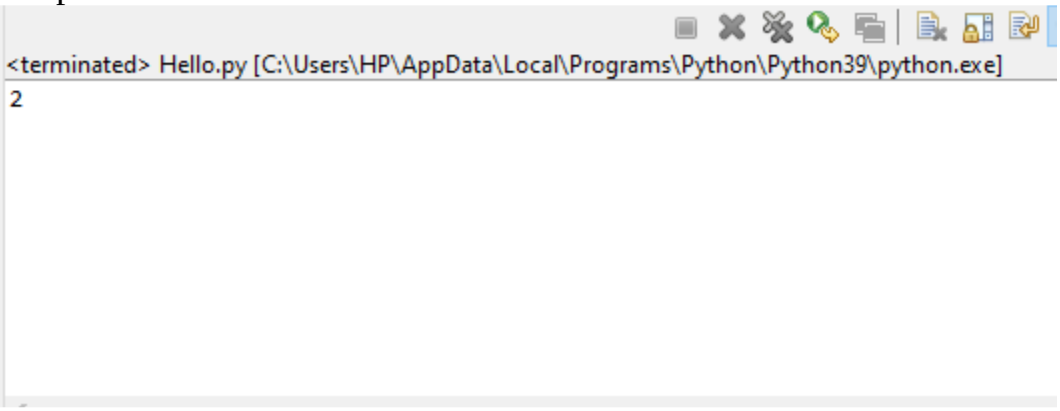
Output:



Exercise 4.1.3: Compute 1+1



Output:



Exercise 4.1.4: Type in program text.

test | Hello | formulaus_shapse

```
area_parallegon=h*r
print("the area of parallelogram  is ")
print(area_parallegon)

area_squre= r**2
print("the area of squre is ")
print(area_squre)


area_circul = pi*r**2
print("the area of circul is ")
print(area_circul)

area_volume =(1.0/3)*pi*r**2*h
print(" the area of volume is ")
print(area_volume)
```

Output:

<terminated> formulaus_shapse.py [C:\Users\HP\AppData\Local\Programs\Python\Python39\pyth

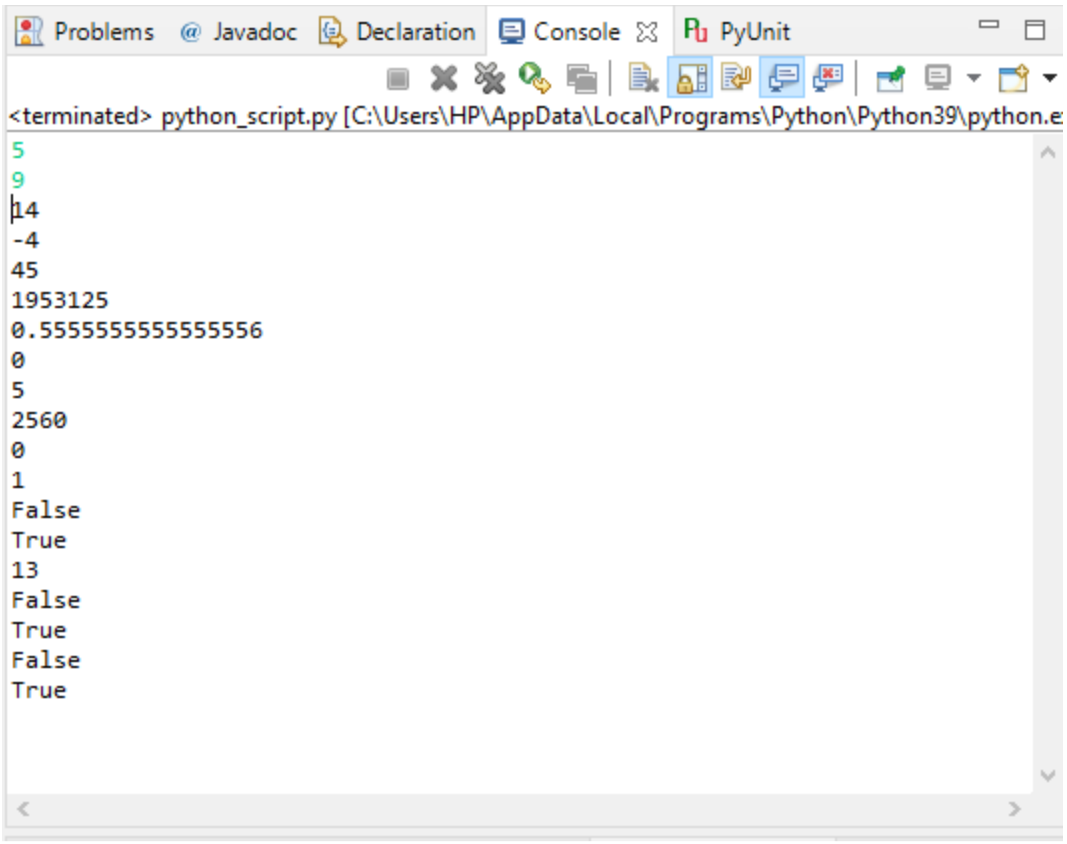
```
the area of parallelogram  is
7.5
the area of squre is
2.25
the area of circul is
7.0686
 the area of volume is
11.780999999999999
```

Section 4.1: Create and run basic example.

test | Hello | formulaus_shapse | python_script

```
Created on Jan 8, 2021

@author: HP
'''
a= int(input())
b=int(input())


print(a+b)
print(a-b)
print(a*b)
print(a**b)
print(a/b)
print(a//b)
print(a%b)
print(a<<b)
print(a>>b)
print(a&b)
print(a>b)
print(a<b)
print(a|b)
print(a>=b)

print(a<=b)
print(a==b)

print(a!=b)
```

Output:

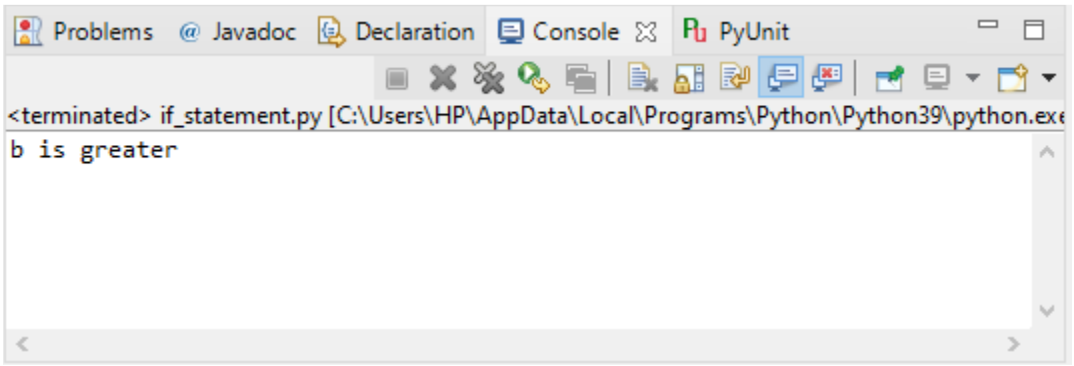


Exercise 4.2.2: The if statement:

formulaus_sh... python_script if_statement

```
'''
Created on Jan 8, 2021

@author: HP
'''

a=10
b=20

if(a>b):
    print("a is greater")
else:
    print("b is greater")
```

Output:



Exercise 4.2.3: The while Statement

```
'''
Created on Jan 8, 2021

@author: HP
'''

a=10

while(a>0):
    print(a)
    a=a-1
```

Output:

```
<terminated> while.py [C:\Users\HP\AppData\Local\Programs\Python\Python39\python.exe]
10
9
8
7
6
5
4
3
2
1
```

Conclusion: Python is a language that is remarkably easy to learn, and it can be used as a stepping stone into other programming languages and frameworks. If you're an absolute beginner and this is your first time working with any type of coding language, that's something you definitely want.

Python is widely used, including by a number of big companies like Google, Pinterest, Instagram, Disney, Yahoo!, Nokia, IBM, and many others. The Raspberry Pi – which is a mini computer and DIY lover's dream – relies on Python as it's main programming language too. You're probably wondering why either of these things

matter, and that's because once you learn Python, you'll never have a shortage of ways to utilize the skill. Not to mention, since a lot of big companies rely on the language, you can make good money as a Python developer.

1) Python can be used to develop prototypes, and quickly because it is so easy to work with and read.

2) Most automation, data mining, and big data platforms rely on Python. This is because it is the ideal language to work with for general purpose tasks.

3) Python allows for a more productive coding environment than massive languages like C# and Java. Experienced coders tend to stay more organized and productive when working with Python, as well.