Mawlana Bhashani Science and Technology University

Lab report

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Python is a high level language which is very easy to learn for it's elegant syntax and dynamic typing. It is very easy because of it's simple syntax. Python is free and an open source language. Python is highly used in today's world such as linux, windows, solaris etc. Python does not need to compile in binary it just run the program directly from the source code. As a high level language it is an object oriented language which is built around object which combine data and functionality. The library function of python is huge that's why we can write complex code short.

Setup of Python environment:

Step 1: Confirm a good internet connection and open the eclipse. Then do the following procedure –

1. **Go to Windows > Preferences > General > Network Connections.**
2. **Change active provider to manual.**
3. **Input proxy details, including username / password if required**
   a. **Host: proxy.rmit.edu.au**
   b. **Port: 8080**
   c. **Username/password: No required**
4. **Clear SOCKS proxy.**
5. **Restart eclipe.**

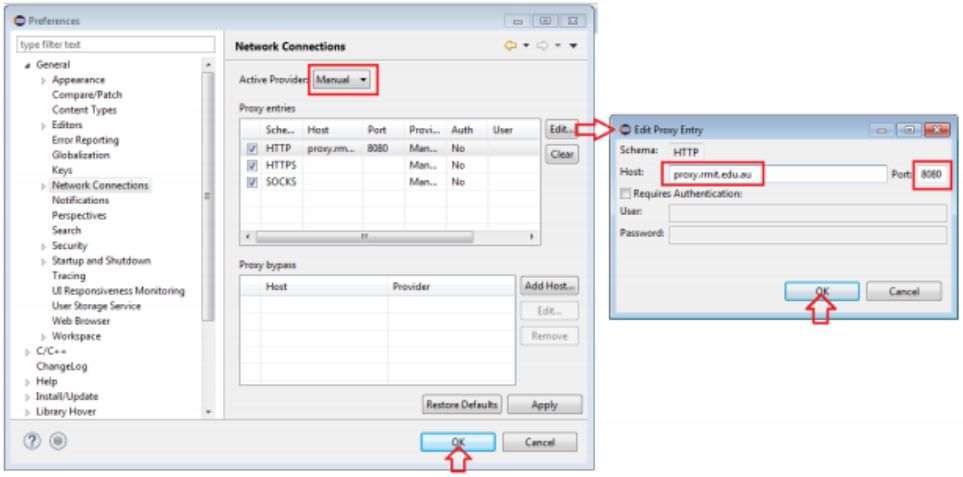
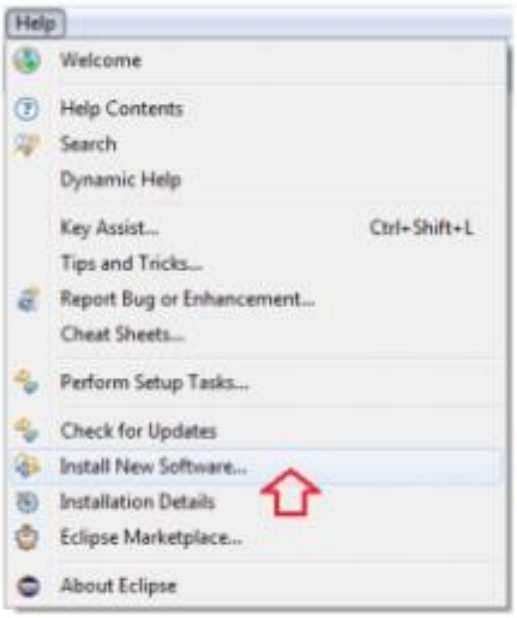


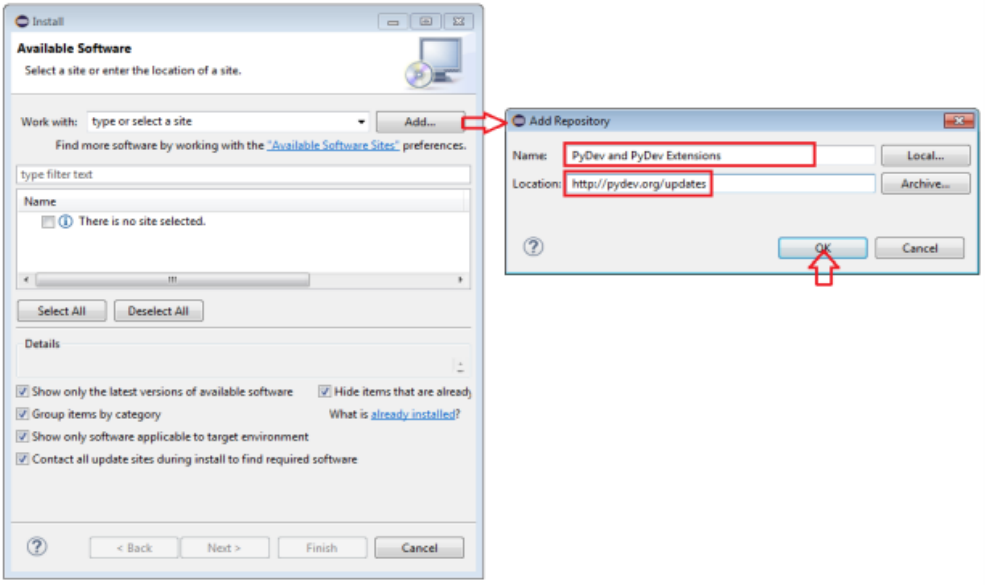
Figure: Eclipse setup for internet.

Step 2: Installing python environment using eclipse graphical interface.

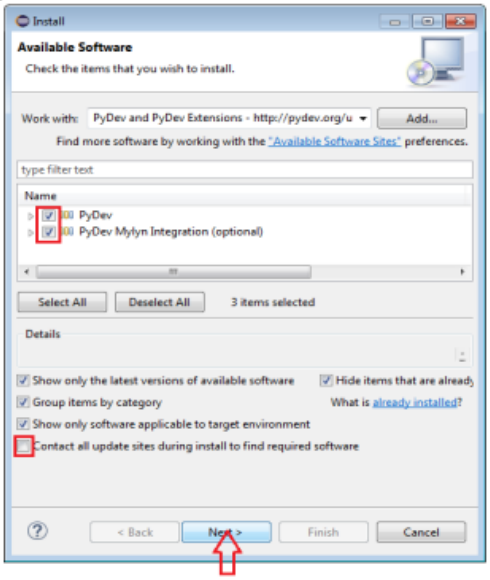
1. **To install PyDev and PyDev extension using the eclipse update manager, you need to use the Help > Install New Software menu.**



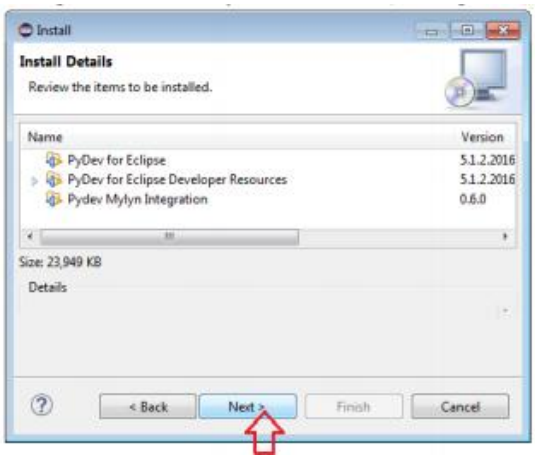
2. **In the next screen, add the update sites. They are given below –**
   - **http://pydev.org/updates**
   - **http://pydev.org/updates4.5**



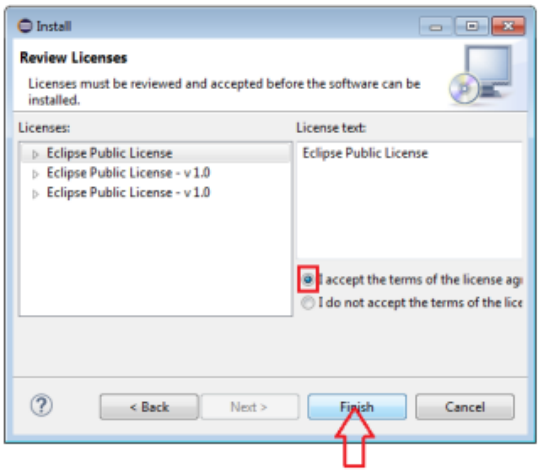
3. **After entering the update sites, select the update site which is entered or select "All available sites" and add a filter for PyDev, so that it shows the contents of all the update sites that have PyDev, the select what you want to install and click 'Next'.**



4. **Then, UNCHECK the contact all update sites during install to find required software and press 'Next' again to confirm you selection.**



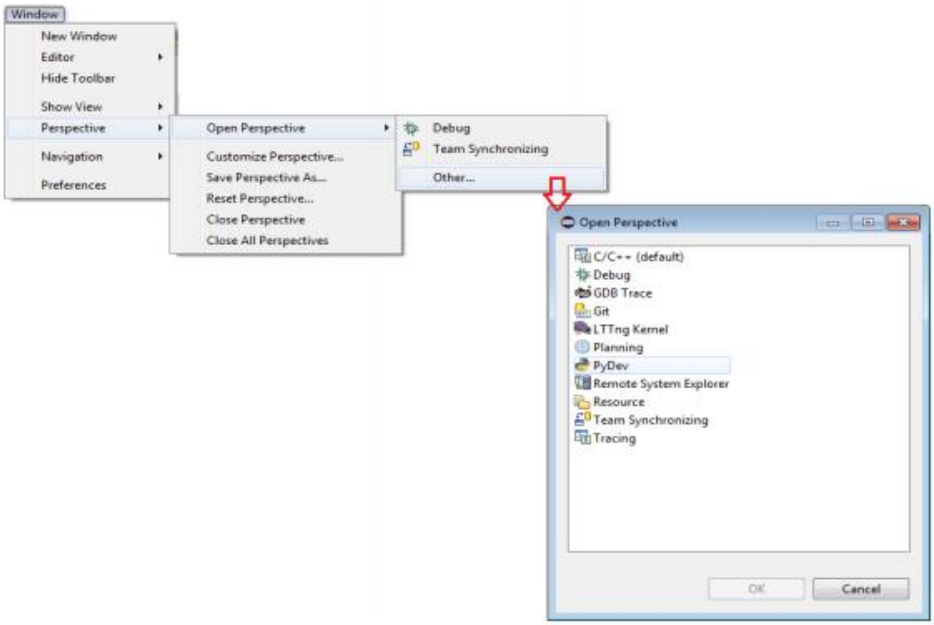
5. **And finally, read the license agreement and if you accept, select the accept radio button and click 'Finish'.**

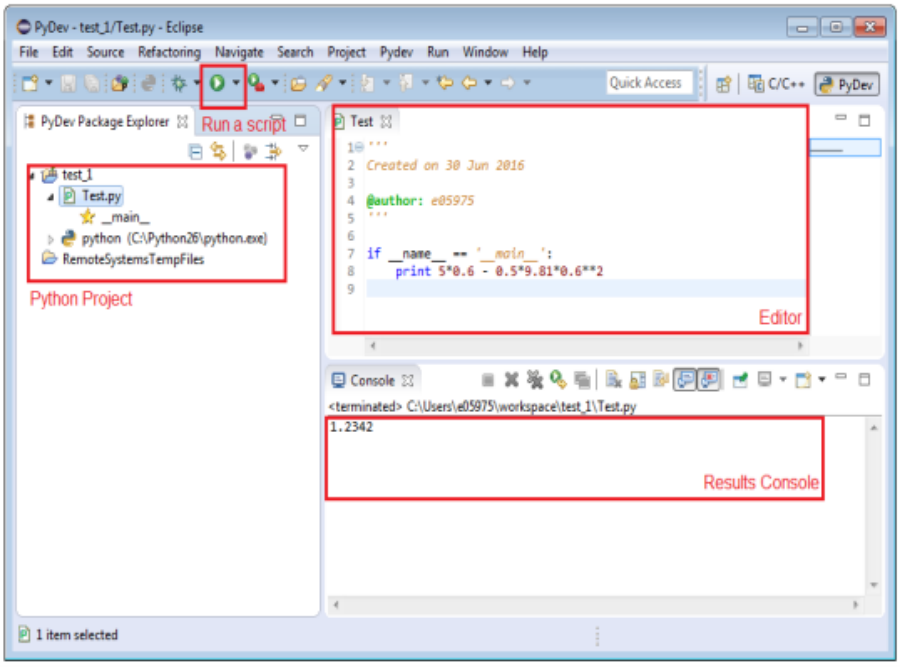


6. **At the point, eclipse should automatically download the plugin contents and present you to a dialog asking if you want to restart.**

<u>Step 3</u>: 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. After that eclipse will display the graphical interface for python perspective. The main components are as follows –

- **Project space is the section where all your python projects are visualized.**
- **Project Editor is the section where python scripts can be edited.**
- **Console allows the visualization of results father running a python script.**
- **Run button allows to run a python script.**





Exercise 4.1.2: : Write a Hello World Program.

Exercise 4.1.3: Compute 1 + 1

Exercise 4.1.4:

formulas_shape.py

```python
h = 5.0 # height
r = 1.5 # radius
pi = 3.141592
if __name__ == '__main__':
    area_parallelogram = h*r
    print ('The area of the parallelogram is %.3f' % area_parallelogram)
    area_square = h**2
    print ('The area of the square is %g' % area_square)
    area_circle = pi*r**2
    print ('The area of the circle is %.3f' % area_circle)
    volume_cone = 1.0/3*pi*r**2*h
    print ('The volume of the cone is %.3f' % volume_cone)
```

if __name__ == '__main__'

Run: formulas_shape

```
The area of the square is 25
The area of the circle is 7.069
The volume of the cone is 11.781

Process finished with exit code 0
```

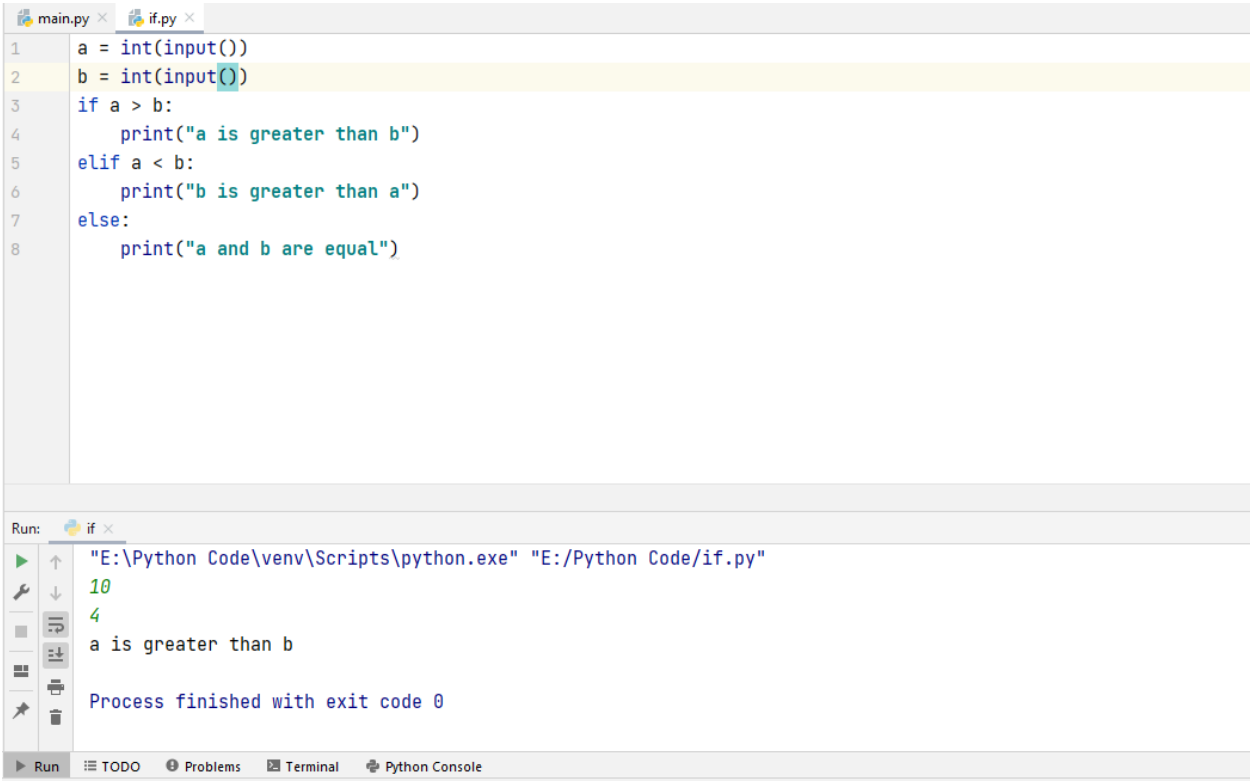
Run | TODO | Problems | Terminal | Python Console

Exercise 4.2.1: Use of operators

main.py

```python
a = 10
b = 4
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)
print(a != b)
```

Exercise 4.2.2: If else statement



Exercise 4.2.3: while statement

Exercise 4.2.4: the for statement


for.py
1 for i in range(1, 10):
2 print(i, end = " ")
3
Run: for
"E:\Python Code\venv\Scripts\python.exe" "E:/Python Code/for.py"
1 2 3 4 5 6 7 8 9
Process finished with exit code 0
Run
TODO
Problems
Terminal
Python Console