G H Raisoni College of Engineering & Management, Pune		
Department of F .Y. B.Tech		
Subject: Programming for Problem Solving	**Subject Code : (UITP102)**	**Term –II (202-21)**
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Assignment Number	1
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Sign of Faculty	

Aim: - Introduction to python programming.
Problem Statement: Write a Python program to display current date and time.
Prerequisites: Python, IDE, Python data types.

Assignment no: 1

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Theory:

PART 1:

Introduction to python

Python is a powerful general-purpose programming language. It is used in web development, data science, creating software prototypes, and so on. Fortunately for beginners, Python has simple easy to-use syntax. This makes Python an excellent language to learn to program for beginners.

Python Characteristics:-

1. Python is a cross-platform programming language, which means that it can run on multiple platforms like Windows, macOS, Linux.
2. It has even been ported to the Java and .NET virtual machines.
3. It is free and open-source.

Installation Process:-

The easiest way to run Python is by using **Thonny IDE**.
The Thonny IDE comes with the latest version of Python bundled in it. So you don't have to install Python separately.

Follow the following steps to run Python on your computer.

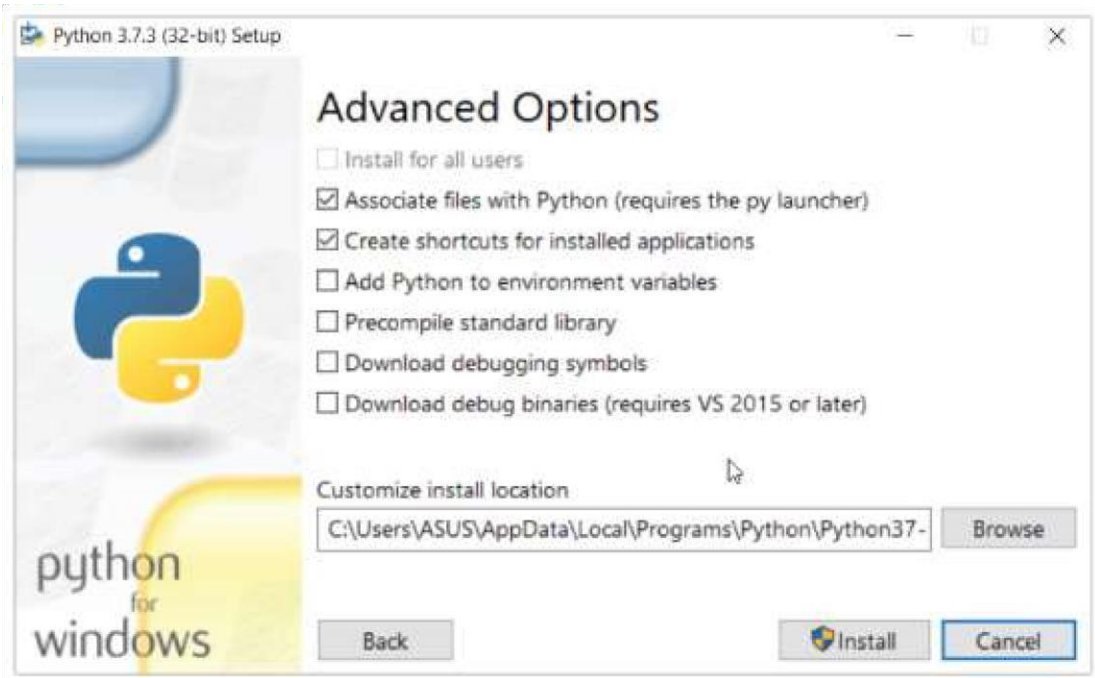
1. Download Thonny IDE.
2. Run the installer to install **Thonny** on your computer.
3. Go to: **File** > **New**. Then save the file with .py extension. For example, hello.py, example.py, etc.
   You can give any name to the file. However, the file name should end with **.py**
4. Write Python code in the file and save it.
5. Write Python code in the file and save it.
6. Then Go to **Run** > **Run current script** or simply click **F5** to run it.

Install Python Separately

7. If you don't want to use Thonny, here's how you can install and run Python on your computer.
8. Download the latest version of Python.
9. Run the installer file and follow the steps to install Python

During the install process, check **Add Python to environment variables**. This will add Python to environment variables, and you can Run Python from any part of the computer.

Also, you can choose the path where Python is installed.



10. Installing Python on the computer
11. Once you finish the installation process, you can run Python.
12. Once Python is installed, typing python in the command line will invoke the interpreter in immediate mode. We can directly type in Python code, and press Enter to get the output.
13. Try typing in 1 + 1 and press enter. We get 2 as the output. This prompt can be used as a calculator. To exit this mode, type quit () and press enter.

Running Python on the Command Line

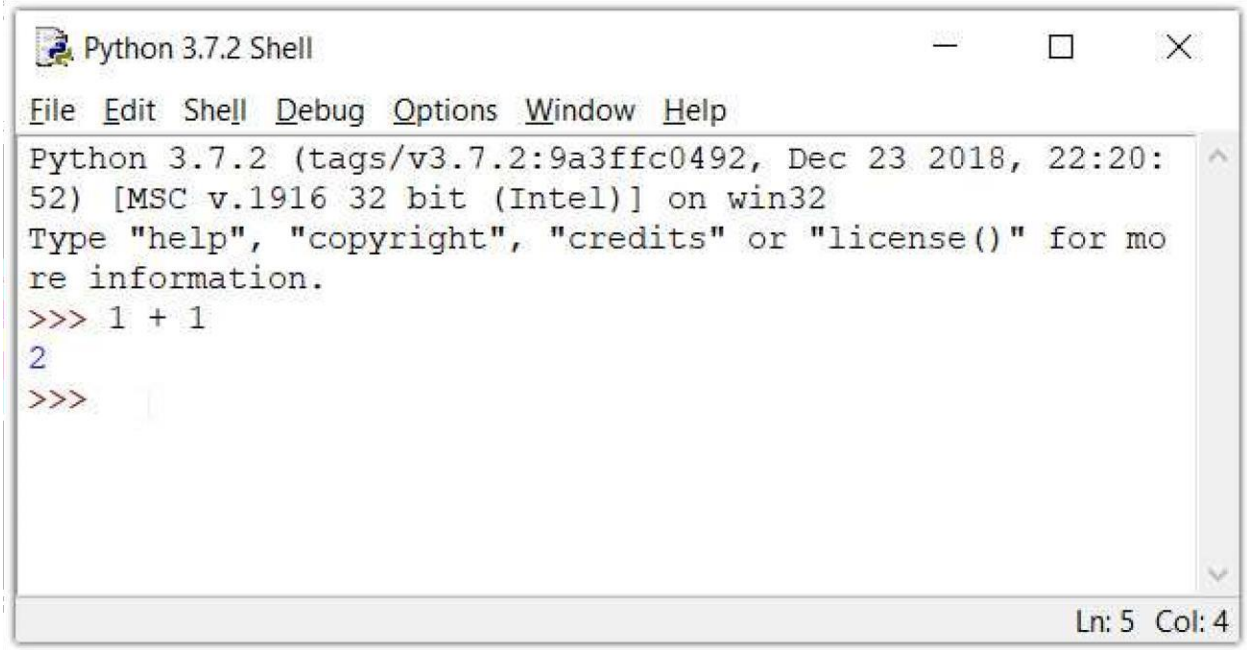
```
Microsoft Windows [Version 10.0.17134.648]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ASUS>python
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52
) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more i
nformation.
>>> 1 + 1
2
>>> quit()

C:\Users\ASUS>_
```

We can use any text editing software to write a Python script file.

We just need to save it with the .py extension. But using an IDE can make our life a lot easier. IDE is a piece of software that provides useful features like code hinting, syntax highlighting and checking, file explorers, etc. to the programmer for application development.

By the way, when you install Python, an IDE named **IDLE** is also installed. You can use it to run Python on your computer. It's a decent IDE for beginners.

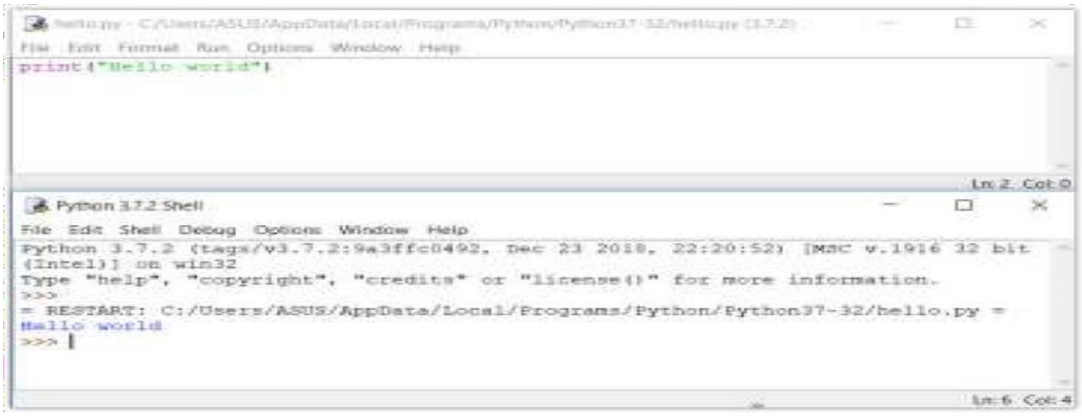
When you open IDLE, an interactive Python Shell is opened.



Python IDLE

Now you can create a new file and save it with **.py** extension. For example, **hello.py**

Write Python code in the file and save it. To run the file, go to **Run** > **Run Module** or simply click **F5**.



To Display Date and Time In python

In Python, **date, time and date time** classes provides a number of function to deal with dates, times and time intervals. Date and date time in Python are the objects, so when you manipulate them, you are actually manipulating objects and not string or timestamps. Whenever you manipulate dates or time, you need to import date time function.

The date time classes in Python are categorized into main 5 classes.

- date – Manipulate just date (Month, day, year)
- time – Time independent of the day (Hour, minute, second, microsecond)
- date time – Combination of time and date (Month, day, year, hour, second, microsecond)
- time delta— A duration of time used for manipulating dates
- tzinfo— An abstract class for dealing with time zones

Today's Weekday Number
The date.Today ( ) function also gives you the weekday number. Here is the

Weekday Table which start with Monday as 0 and Sunday as 6

Day	Week Day Number
Monday	0
Tuesday	1
Wednesday	2
Thursday	3
Friday	4
Saturday	5
Sunday	6

Python date time:

The date time module supplies classes for manipulating dates and times in both simple and complex ways. Date time .now (tz=none) returns the current local date and time. If optional argument tz is none or not specified, this is like today ().

date.strftime (format) returns a string representing the date, controlled by an explicit format string. Format codes referring to hours, minutes or seconds will see 0 values.

Algorithm:

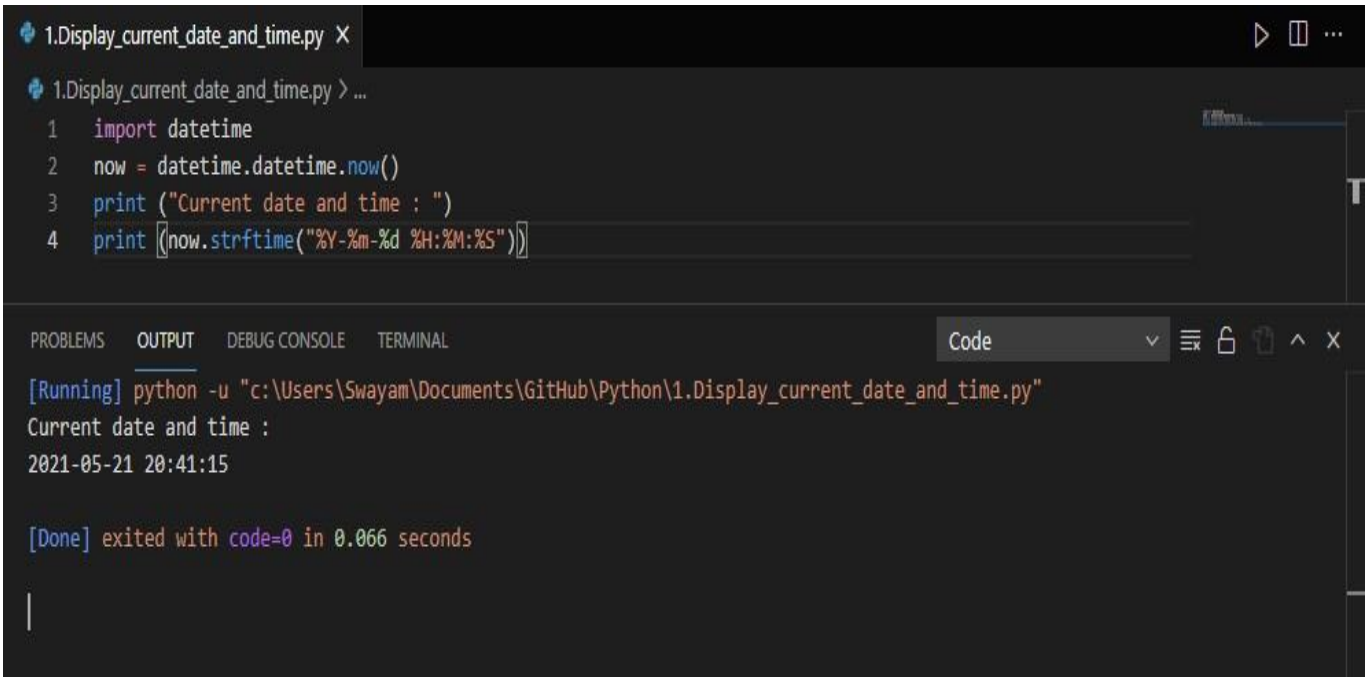
1. import datetime

2.assign now now = datetime.datetime.now()

3.Print current date and time

4.Print (now.strftime("%Y-%m-%d %H:%M:%S"))

PROGRAMA AND OUTPUT:



Conclusion: - In this way we have studied python basic and implemented python code to display date and time.

Practice Set/Questionnaires

1. List the different versions of python
2. Write and explain the function used to output the data.
3. Write an algorithm and flowchart to display name and roll no of student.
4. Implement a program to display your name, Roll no, College name, Branch (Each information is on new line.)

Practice Set/Questionnaires

1. List the difference versions of python

Since 1994, Python has been released in various versions, like Python 1.0, Python 1.5, Python 1.5.2,Python 2.0, Python 2.0.1, etc. The list of the final release of Python versions are Python 2.7.13 released on 17Dec 2016, Python 3.5.3 released on 17 Jan 2017, Python 3.6.10 released on 18 Dec 2019, and Python 3.8.2 released on 24 Feb 2020.

Some versions of python are as follows:-

3.0	**3.0.1**[1]	**2008-12-03**	**2009-06-27**	
3.1	3.1.5	2009-06-27	2011-06-12	2012-06
3.2	3.2.6	2011-02-20	2013-05-13	2016-02-20
3.3	3.3.7	2012-09-29	2014-03-08	2017-09-29
3.4	3.4.10	2014-03-16	2017-08-09	2019-03-18
3.5	3.5.10	2015-09-13	2017-08-08	2020-09-30
3.6	*3.6.13*	2016-12-23	2018-12-24	2021-12

3.7	*3.7.10*	2018-06-27	2020-06-27	2023-06
3.8	*3.8.10*	2019-10-14	2021-05-03	2024-10
3.9	*3.9.5*	2020-10-05	**2022-05**	**2025-10**

One difference between Python 2 and 3 is the **print** statement. In Python 2, the "print" statement is not a function, and therefore it is invoked without parentheses. However, in Python 3, it is a function, and must be invoked with parentheses.

2. Write and explain the function used to output the data.

Answer- The function which we use is print ("Output Data"). The simplest directive in Python is the "print" directive - it simply prints out a line (and also includes a newline).

Example: **print("Programming for Problem Solving.")**

Output - **Programming for Problem Solving.**

3. Write an algorithm and flowchart to display name and roll no of student.

Answer -

ALGORITHM :

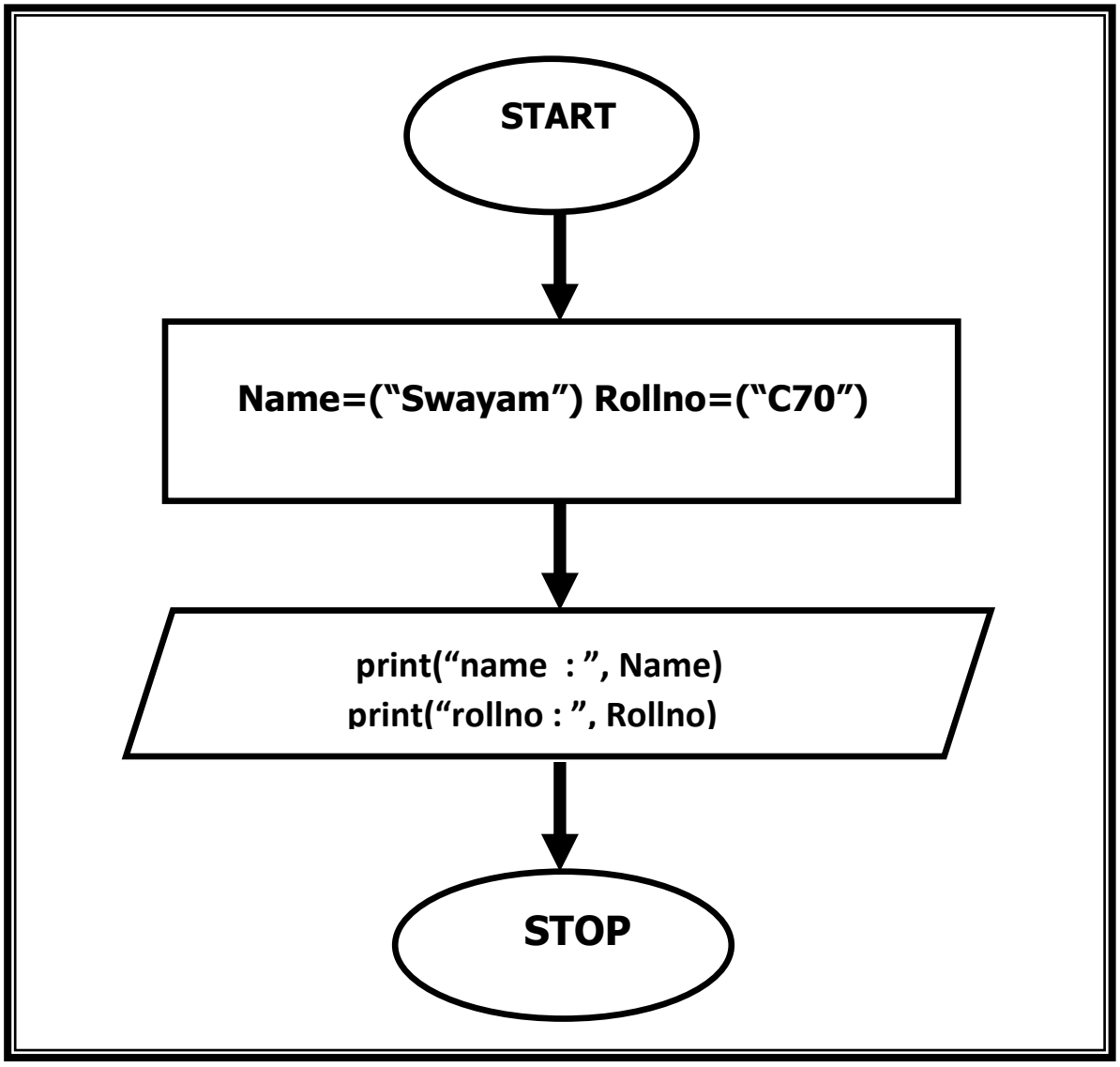
Step 1: Start

Step 2: Declare variable Name, Roll No.

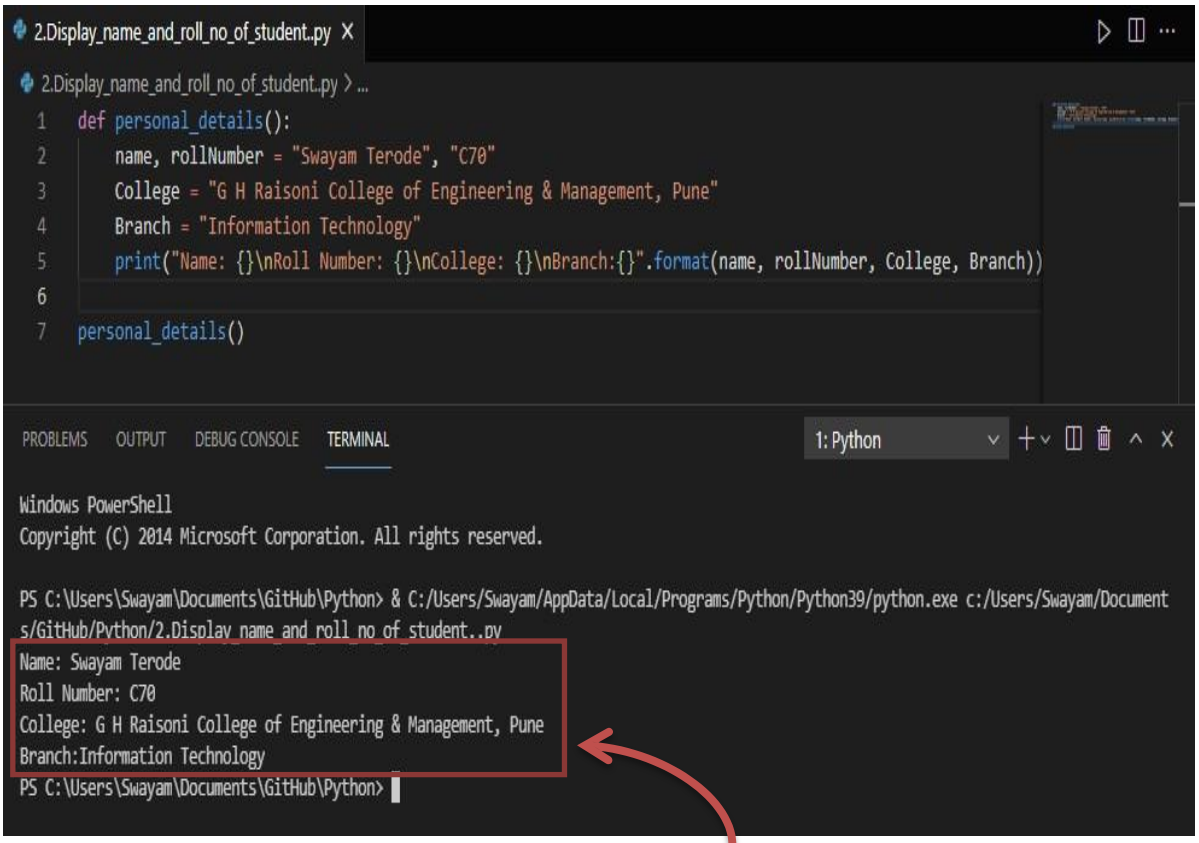
Step 3: print("name : ", ob.name)
print("rollno : ", ob.rollno)

Step 4: Stop

Flowchart-


START
Name=("Swayam") Rollno=("C70")
print("name : ", Name)
print("rollno : ", Rollno)
STOP

4. **Implement a program to display your name, Roll no, College name, Branch (Each information is on new line.)**



Output