Q1)

(a) Open the Terminal, type “**cd Home**” to go to home directory.Then type “**mkdir <IMT2019031>**” to create a directory of your roll number.

(b) Type cd IMT2019031 to go to that directory.

(c) Type “**mkdir python**” to make a python directory then type cd python to go to that directory then type “**mkdir assignments**” to make a assignments directory inside the python directory. Then type cd assignments and then type “**mkdir a1**“ to create another directory called a1.

(d) Type “**cd a1**” to go to that directory.

(e) Type “**gedit theory.txt**” to make a theory text file inside a1.

(f)Type “**theory of assignment1 of python**” in it and hit Ctrl+S to save it.

(g)Type ”**cp theory.txt theory2.txt**” to copy the content of text file theory.txt to a new text file theory2.txt. (h) Click ctrl+shift+t to open another tab in the terminal. (i) type “**python**” to open python interpreter in that tab.

Q2)

(a)

|  |  |
| --- | --- |
| Interpretation | Compilation |
| Interpretation is the process of translating the source code into machine code statement by statement. | Compilation is the process of translating the entire source code into machine code at once. |
| Testing the program is easier as if an error occurs within the program it is easier to pinpoint the statement that lead to that error. | It is more efficient as no translation of the source code is required during run-time. |
| It enables Faster Editing and is easier to debug and revise. | Compiler doesn’t need to compile every single time,just once. |
| It requires lesser memory to execute the program. | It requires more memory to create machine code. |
| Programming languages like Python and Ruby use a interpreter. | Programming languages like C and C++ use a compiler. |

(b)

Python:

Pros:

* It is a very user-friendly language and reads like english.
* It is easier to edit and go through and understand.
* It is also a very powerful programming language used to make applications and games.

Cons:

* It uses an interpreter instead of a Compiler which makes it a bit slower than C
* It is also a weak language for developing mobile applications.

C:

Pros:

* The C programs written in one computer can run on any computer without any change of the program code or having a slight change.
* A C program is a structured programming language with a collection of function modules and blocks that form a complete program.
* Since other languages are based on c program, it speeds up a program which is developed using other programming languages.The programs in C runs faster than in other languages.

Cons:

* The C language does not allow runtime checking making it difficult to fix the bugs if you extend the program.
* C program does not support enough library functions which can be used to handle today’s complex programming environment.

Q3)

1. a=10 : It is a integer type variable, Python automatically interprets it as an integer when we don’t provide inverted commas or decimal value.
2. b=4: It is also an integer type variable different from a in its value and variable name, Python automatically interprets it as an integer when we don’t provide inverted commas or decimal value.
3. c=3.4: It is a float type variable and python interprets it as float by looking at the decimals
4. d=a/10:

It is a float type variable as python assigns d the value of 1.0000 in this case,since python doesn’t know whether the output value of a/10 will be int or float it assigns d as float.

1. e=b\*c: It is a float type variable as we are multiplying a float value with integer value.
2. a =a\*e: It is a float type variable as we are multiply a integer with float. Python reassigns the value of a from 10 to the value of a\*e .
3. s = ”IIITB”:

It is a string type variable.Python interprets anything inside double quotes or single quotes as a string.

1. t = a +s:

It is invalid, Python will show error as we are trying to add a float type variable and string type variable.