COL1000
Introduction to Programming

Priyanka Golia

Most (if not all) of the content is borrowed from Prof. Subodh Kumar's slides




*COL*1000 so far!!

Time for a breather!

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Never have I ever:

1. Performed in front of 100+ people !
2. Copied homework from a friend/ let a friend copy my homework.
3. Written a computer program.
4. Wrote an essay.

Who Are We Talking To?

Writing Essay: Human Audience

- **Purpose** : To convey ideas, emotions, stories, and information to other humans.
- **Interpretation** : Relies on shared cultural context and human experience.
- **Feedback** : Emotional responses, questions, discussions, and engagement.

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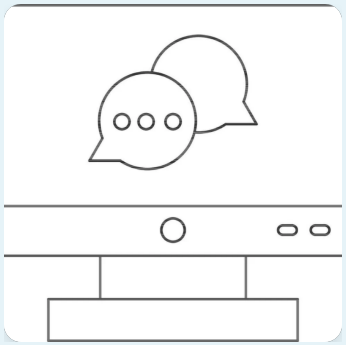

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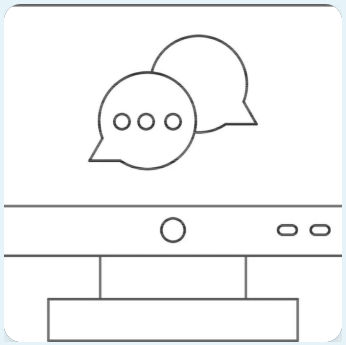

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Make it do a task! — just program it!

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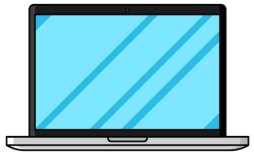

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Make it do a task! — just program it!

1. Decide the operations you want your calculator to perform: +, -, *, %, log, etc.
2. Write a description of the task.
   Addition should take two inputs and return their sum.
3. Tell this description to the computer (i.e., program it)
4. Run the program and get the output.
5. Check output to verify that it behaves as expected.

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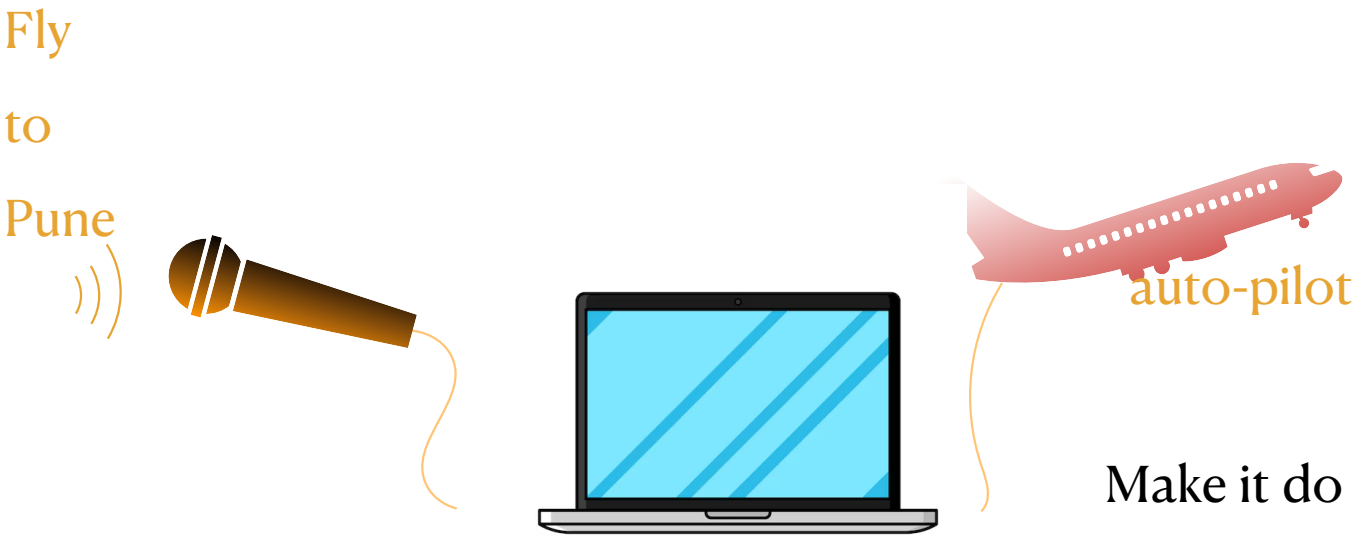

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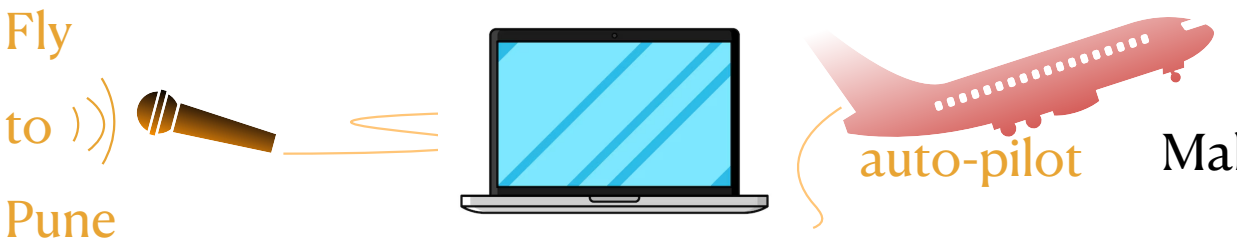

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1. What actions does the “system” support
2. Design task description in terms of those actions

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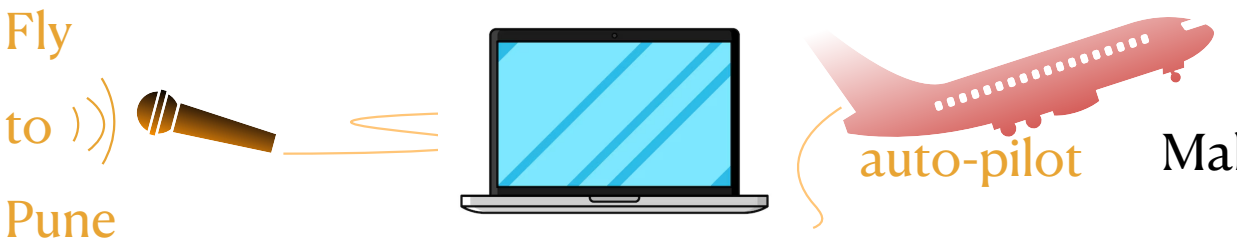

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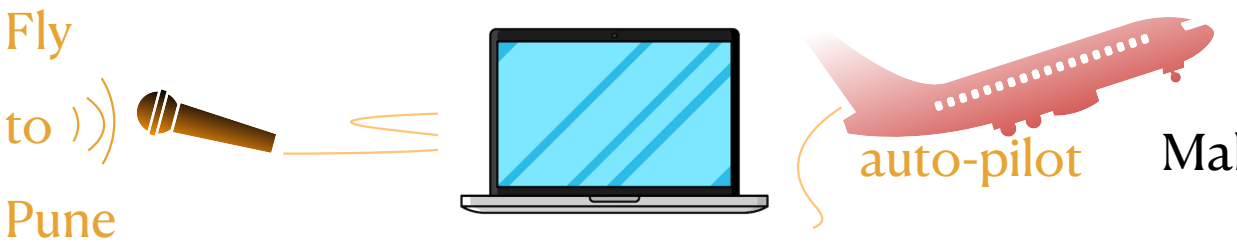

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3. Communiate the description

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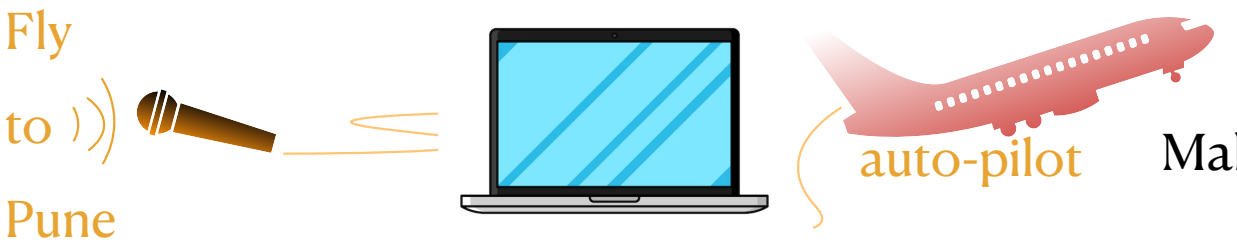

Make it do a task! — just program it!

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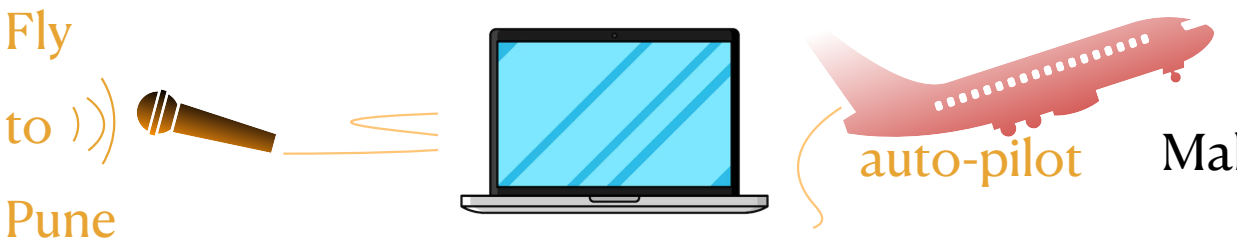

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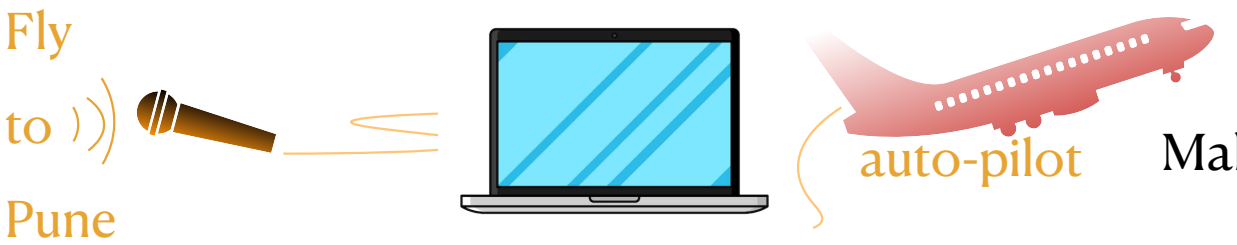

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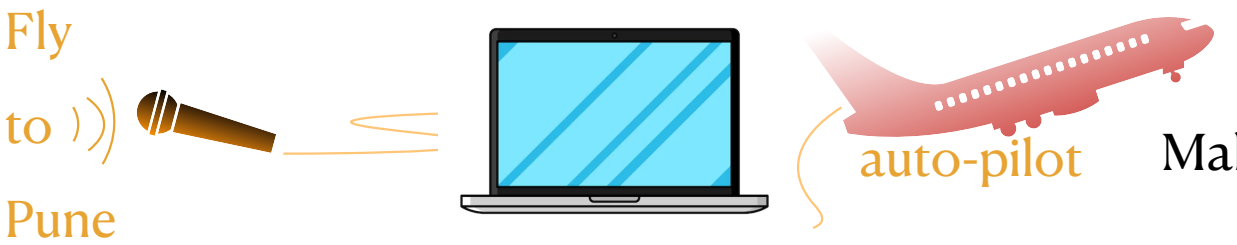

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Should be able to interpret and verify

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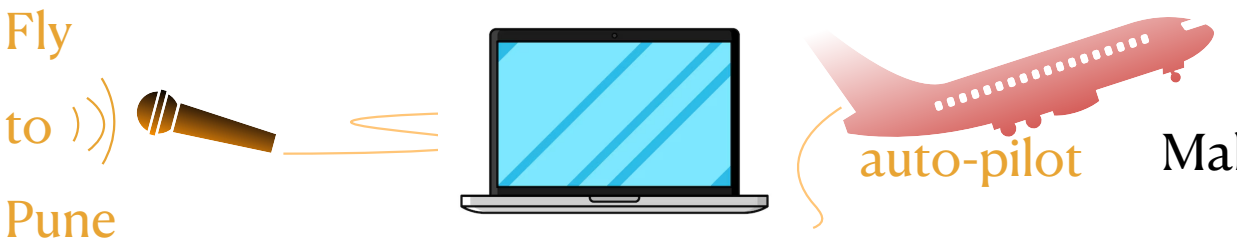

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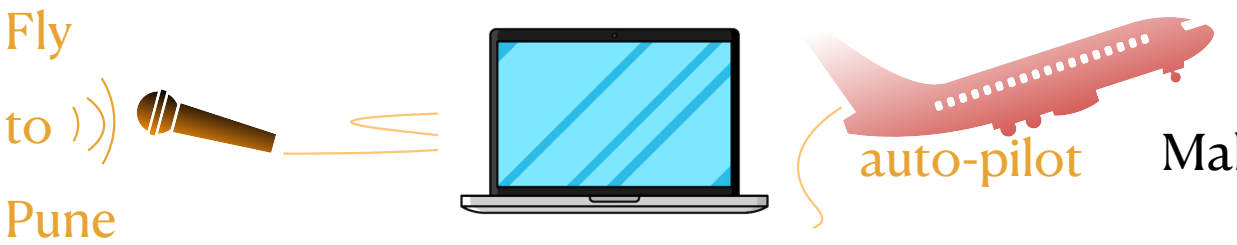

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Most do only one specific task

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Input: Communicate to device

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Output: Device communicates back

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Program ➜ Device

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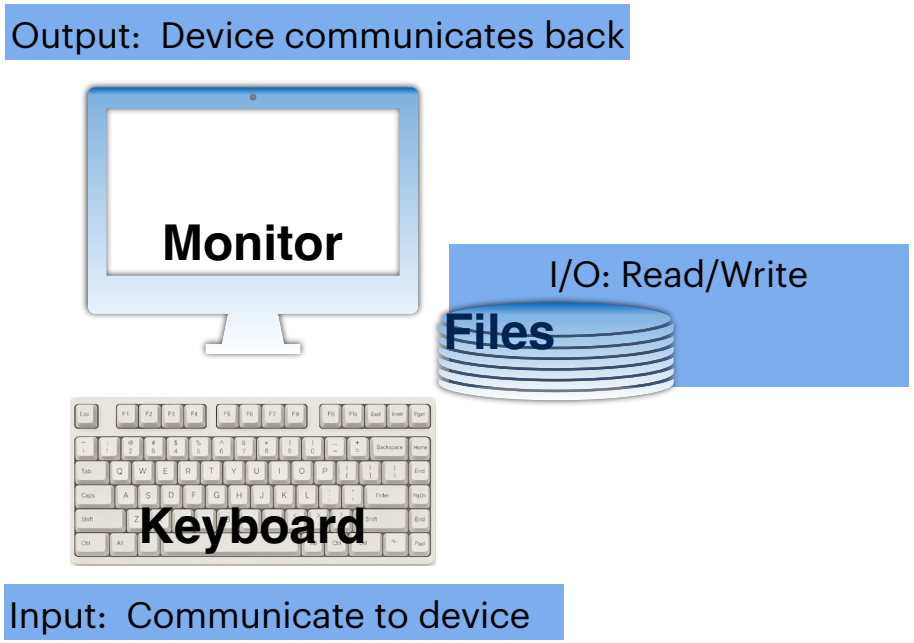

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Programs have memory so they may remember
and actions which are taken on parts of memory

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"The System"

1. Notices the command being typed
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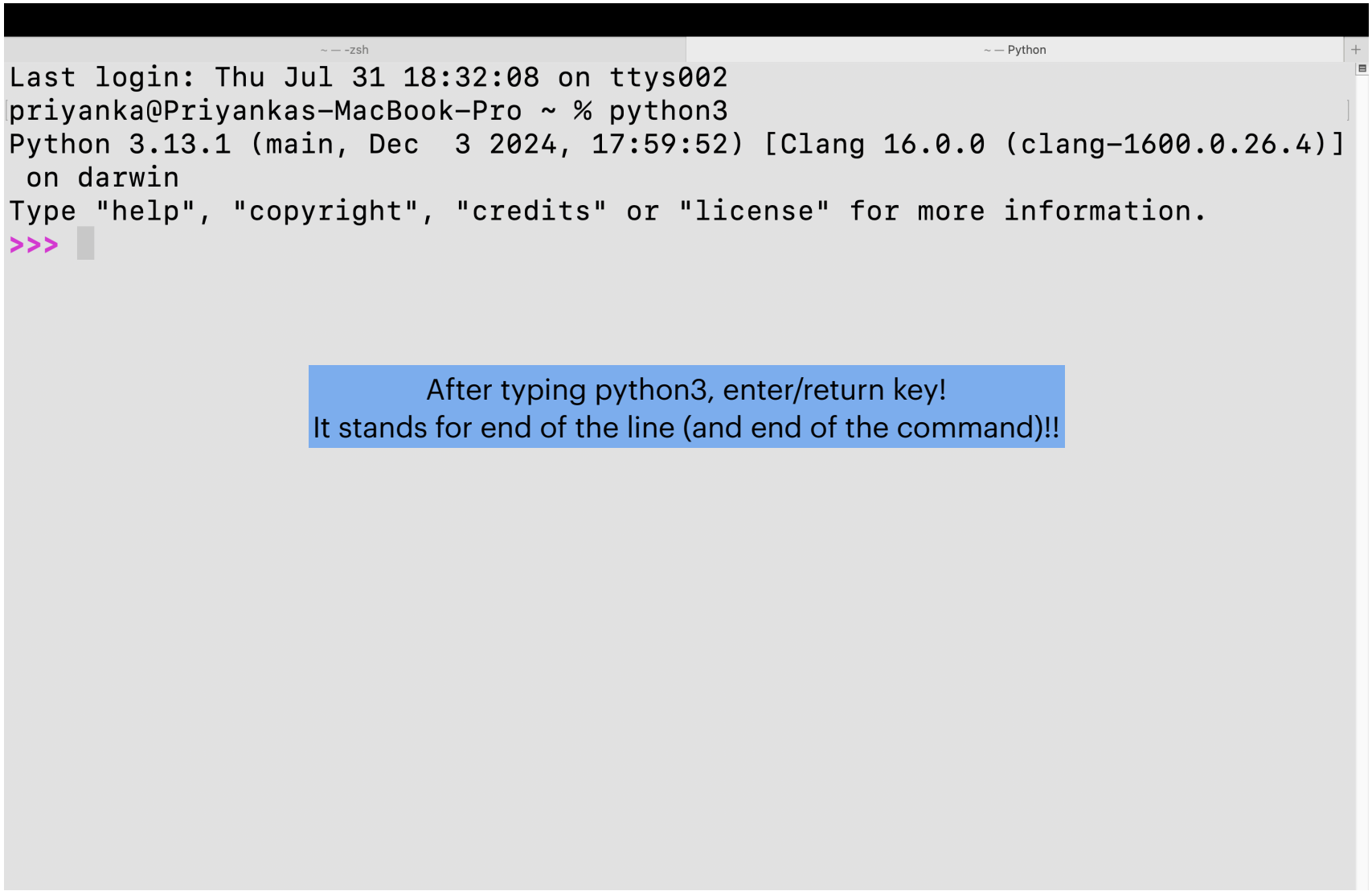
First tell the system to start taking commands in Python language


~ — -zsh
~ — Python
Last login: Thu Jul 31 18:32:08 on ttys002
priyanka@Priyankas-MacBook-Pro ~ % python3
Python 3.13.1 (main, Dec 3 2024, 17:59:52) [Clang 16.0.0 (clang-1600.0.26.4)]
 on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>>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After typing python3, enter/return key!
It stands for end of the line (and end of the command)!!

Hello Python!

- We will (mainly) use Python on the cloud (Moodle)
  - ➡ You will not get Python prompt — unlike Google colab, Jupyter notebook
  - ➡ Instead you will type Python code in IDE ➜ Save  in a remote file ➜ Run it 
- Indentation of lines is very important in Python
  - ➡ Where code begins on each line

Hello Python! print

!

Let's start with the most basic Python command -

The print function displays text or values to the console:

```
>>> print("IITD students are awesome!")
```

```
IITD students are awesome!
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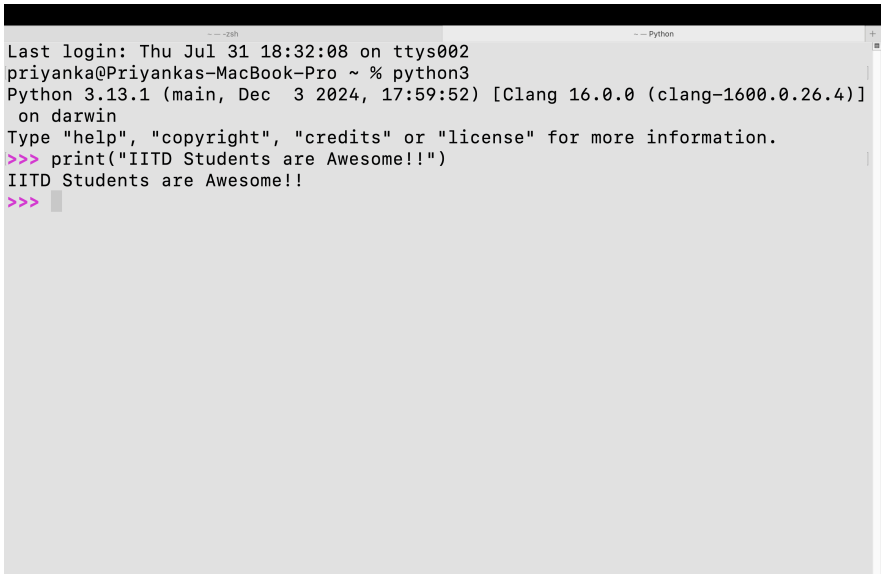

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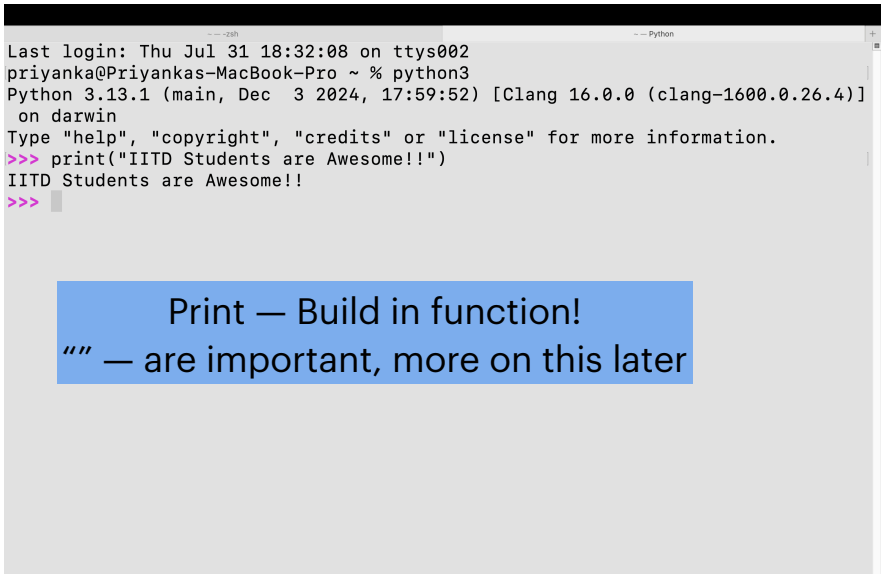

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To allow program to read the keyboard input

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To allow program to read the keyboard input

input("some prompt")

We took the input, but didn't ask program to memorize it