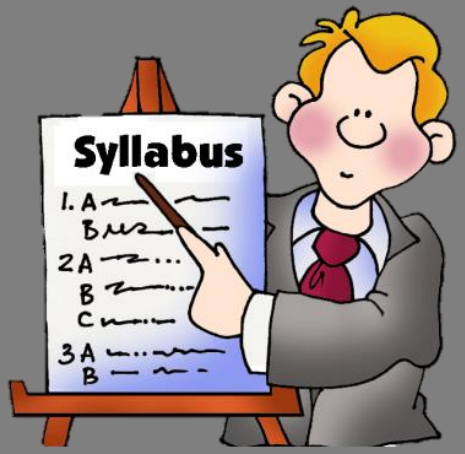
Introduction to Python

About the Course



1. Python Setup
2. Comparison and Logical operators
3. Basic Python
    1. Data types, variables, If-Else conditions, Loops, Functions
4. Some Advanced Python:
    1. Object Oriented Programming
    2. Object and Data Structure Basics
    3. File reading, Errors and Exceptions
5. Using other libraries and modules
6. Mini-Project

About the Course

1. Last 30 mins for Q & A every session
2. Tutorials on YouTube channel:
   “Learn Coding with Sahil and Samad”
3. Weekly Assignments
4. Weekly review on Assignments and Solutions
5. Any other questions or queries... email us at
   python.with.sahil.samad@gmail.com

Career Options

Once you thoroughly learn python, you can…

- Become a **Data Analyst**
- Become a **Data Scientist**
- Become a **Data Journalist**
- Become a **Software Developer/Engineer**
- Become a **Machine Learning Developer**

Programming Languages

- We talk with humans using languages like English, Hindi, Gujarati, French, Spanish, etc.
- How can we talk to machines or computers??

- Using programming languages…
  oh, and there are many!
- One of our favorites is… **Python**

Human Languages v/s Python Language

1. Remember this number for me as x: 198434
2. If it is raining, get an umbrella.
3. Give me the number that I asked you to remember as x.

1. x = 198434
2. if rain():
   get_an_umbrella()
3. print(x)

Human Languages v/s Python Language

- Ambiguous – words/sentences can mean 2 things
- Vague – You can misunderstand a sentence
- Not very cool

- Very clear – a piece of code can never 2 things
- Very Concise – no vague words used, so everyone interprets it the same way
- Super cool!.. B)

Human Languages v/s Python Language

- For example, the word “any” can have different meanings depending on the context:
- Any = some
  - She will be happy if she can solve **any** question.
    - She will be happy if she can solve **some** question.
    - She will be happy if she can solve **every** question.
- Any = all
  - Any student knows this.
    - **Some** student knows this.
    - **Every** student knows this.

Do we think logically?

- You see the following cards. Each has a letter on one side and a number on the other.

- Which cards do you need to turn to check that if a card has a J on it then it has a 5 on the other side?

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Introduction to Python

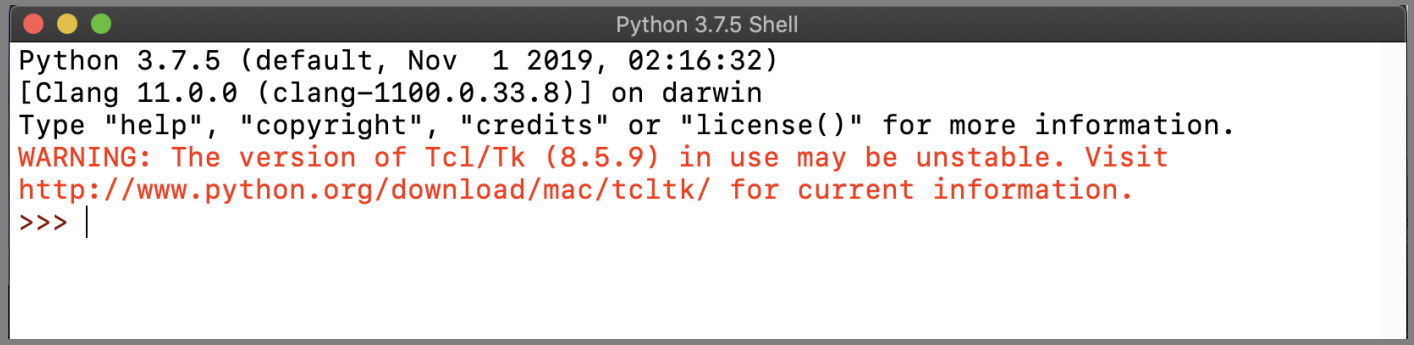
- Python is a high-level programming language
- Open source and community driven
- “Batteries Included” – includes many in-built modules
- Source can be compiled or run just-in-time
- Basically English, so it’s easy to learn
- Similar to other languages: Perl, Tcl, Ruby, Go

Why Python?

- There is a considerable base of developers already using the language.
- It has been in development since 1991.
- Can create Windows applications, websites, mobile apps and a lot more!
- The best and most-widely used language for machine learning (teach a computer how to speak or find an outfit for yourself matching current trends!) and data visualization (show elevation on a world map)

Python Interfaces

- Python Shell – running 'python' from the Command Line opens this interactive shell or using IDLE (run python on the go)
- We will show how you can use python on your local computer (meaning, without any internet access), but we'll be working on something called Google Colab.

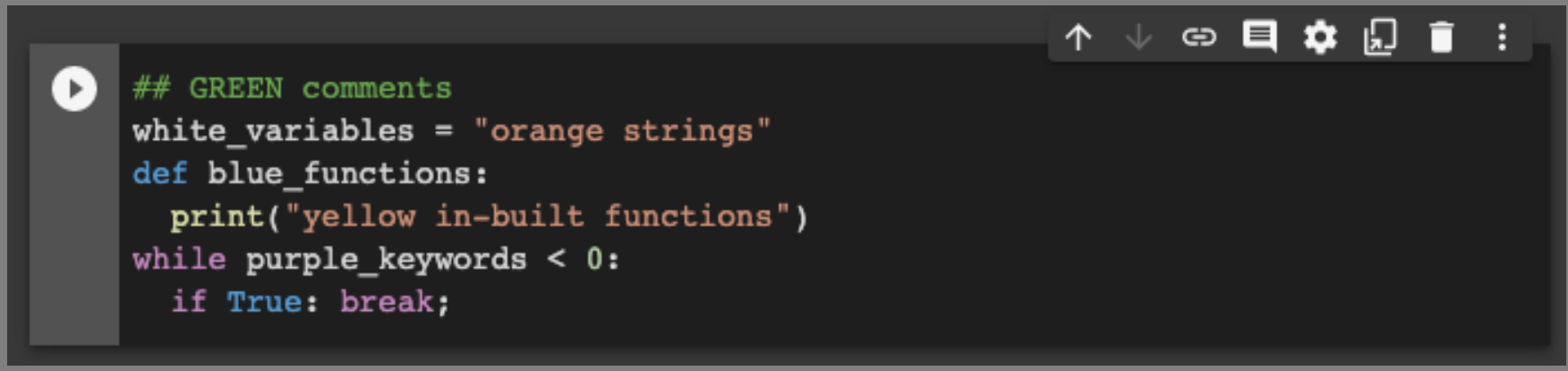


Local Python – How to setup?

Tutorial

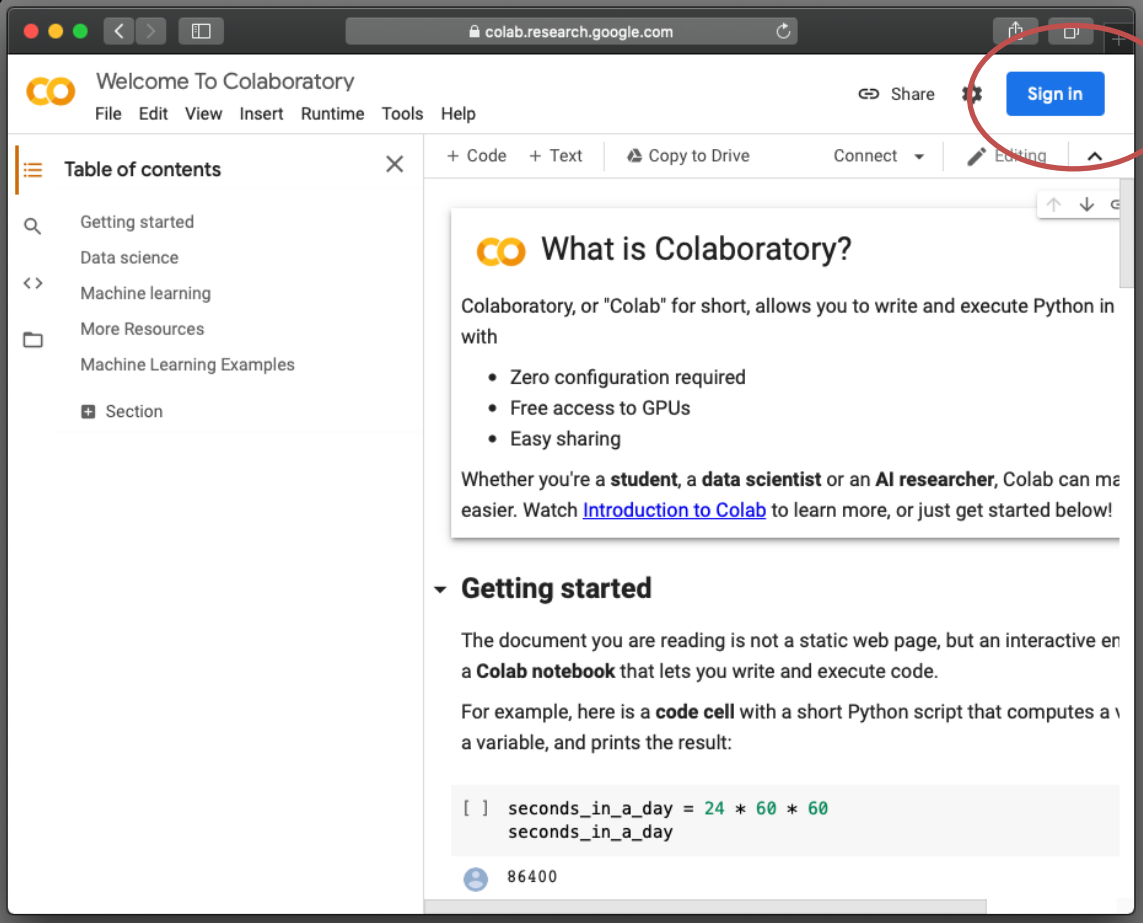
Coding Environment – Google Colab

- Google Colab helps you program in Python by:
  - Creating code sections
  - Auto coloring code, so it looks pretty
  - auto-indenting (adds extra space in the beginning of your lines)



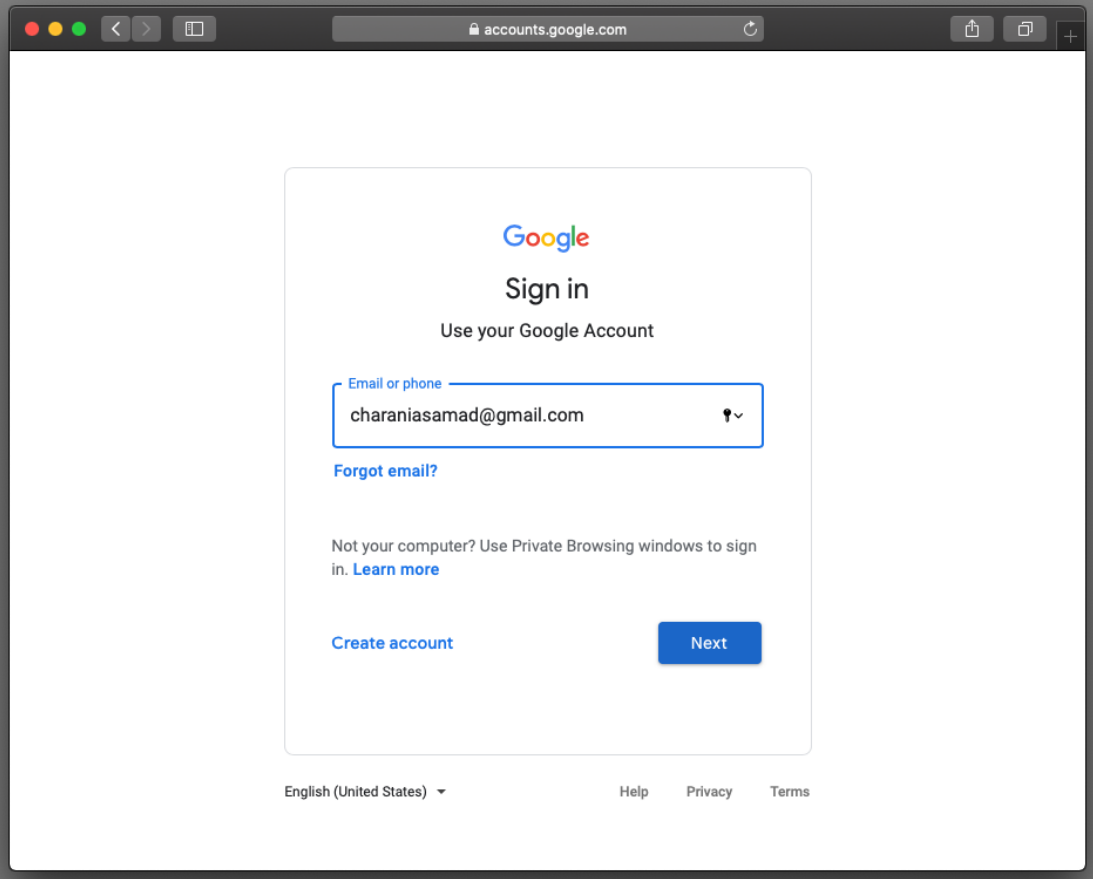
Google Colab – How to setup?

- Step 1: Go to colab.research.google.com and click on “sign-in”



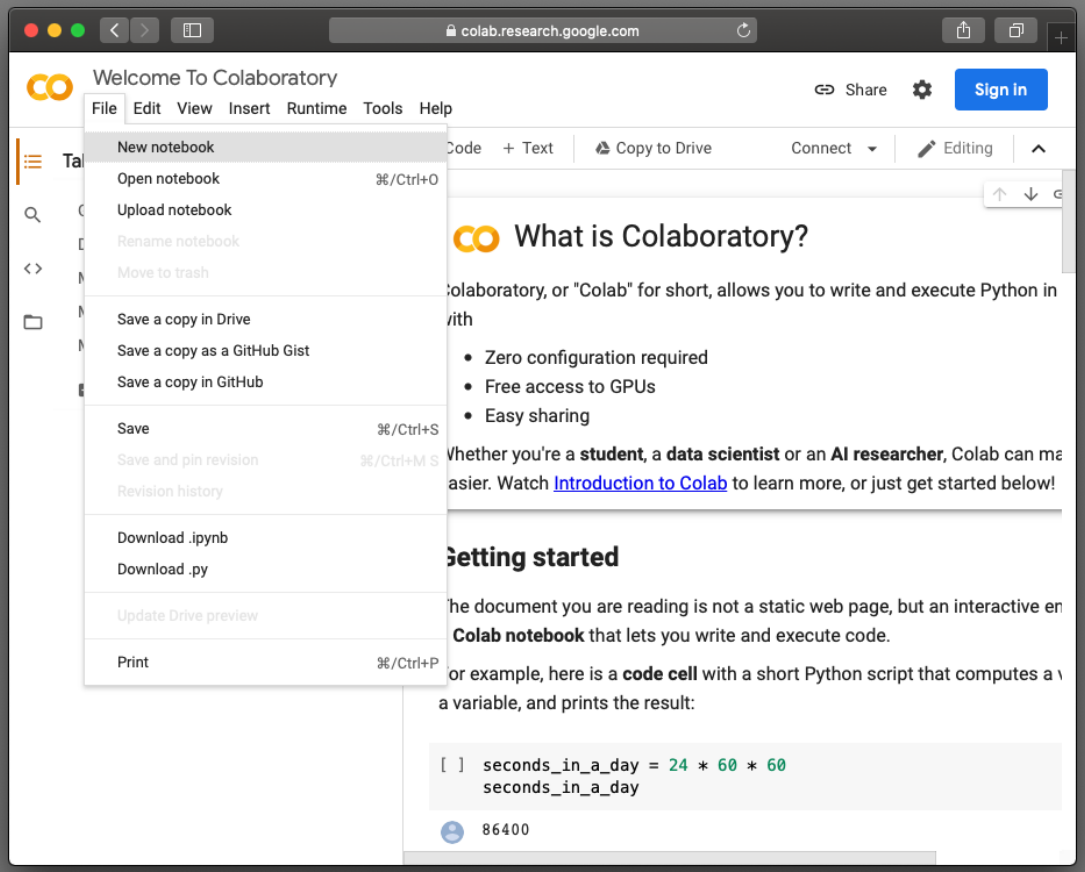
Google Colab – How to setup?

- Step 2: Click on “sign-in” and then use your Gmail account to sign in



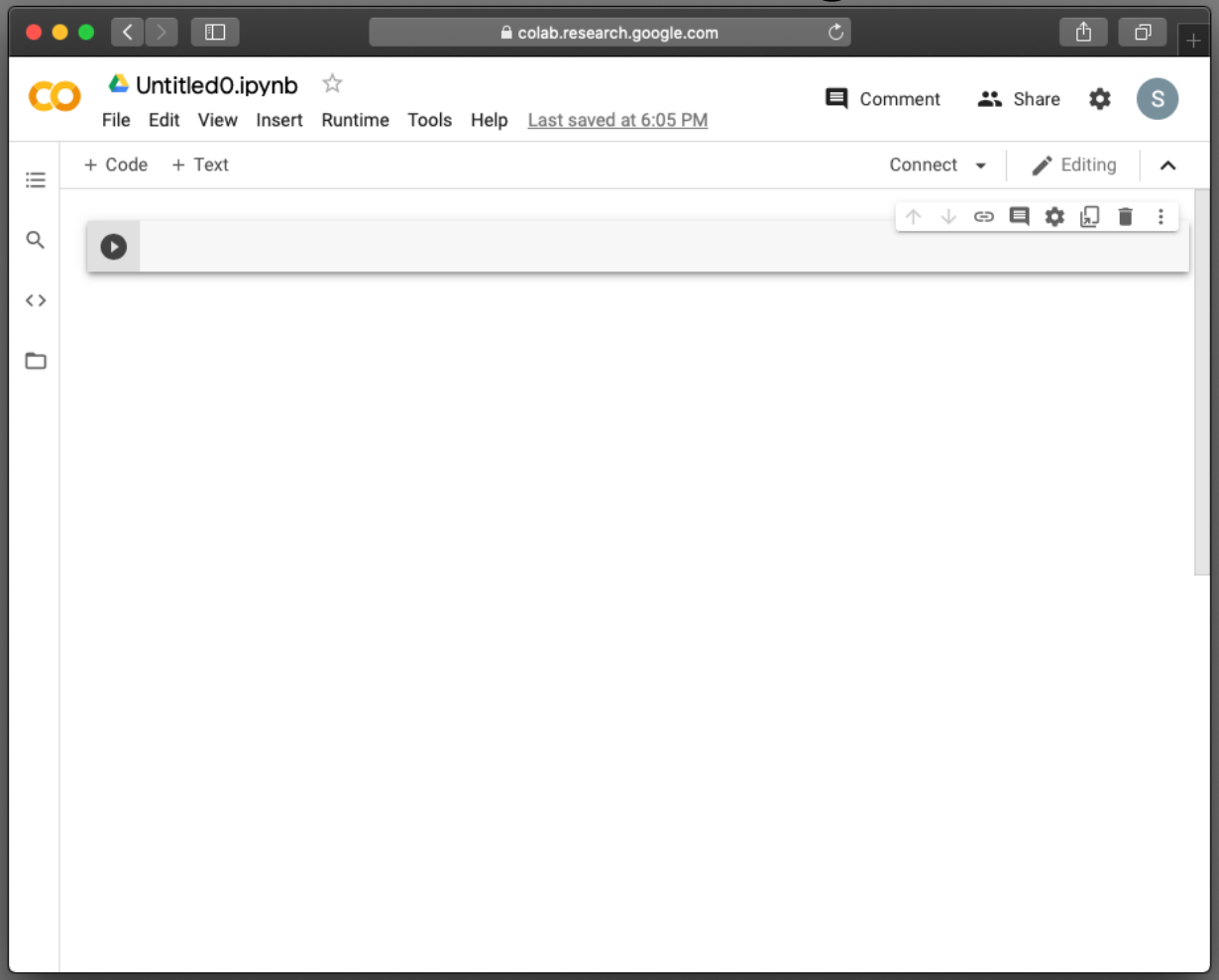
Google Colab – How to setup?

- Step 3: Click on “File” and then on “New notebook”



Google Colab – How to setup?

- Step 3: You should see something like this…



Additional Python Resources

- Python Homepage
  http://www.python.org/
- Python 3 Documentation
  https://docs.python.org/3/