

SOFTWARE ENGINEERING LAB TASK 2

04-12-2024

HU22CSEN0100287

SAI GANESH ESWARAPRASAD

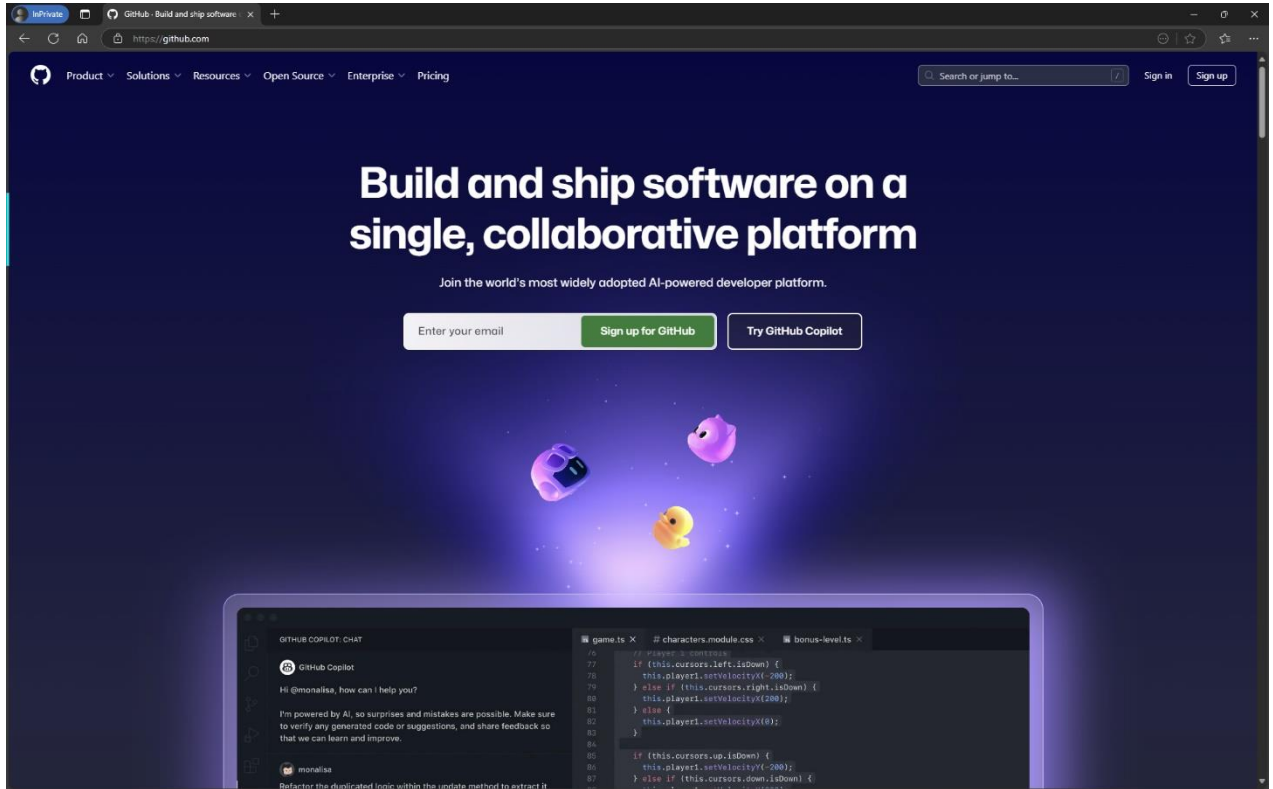
Write any program in google colab using hard coding variables, keyboard input, read from a file single input and read from a file multiple set of inputs and save all the versions, debug and fix any errors, push all the versions into your git hub account.

Steps:

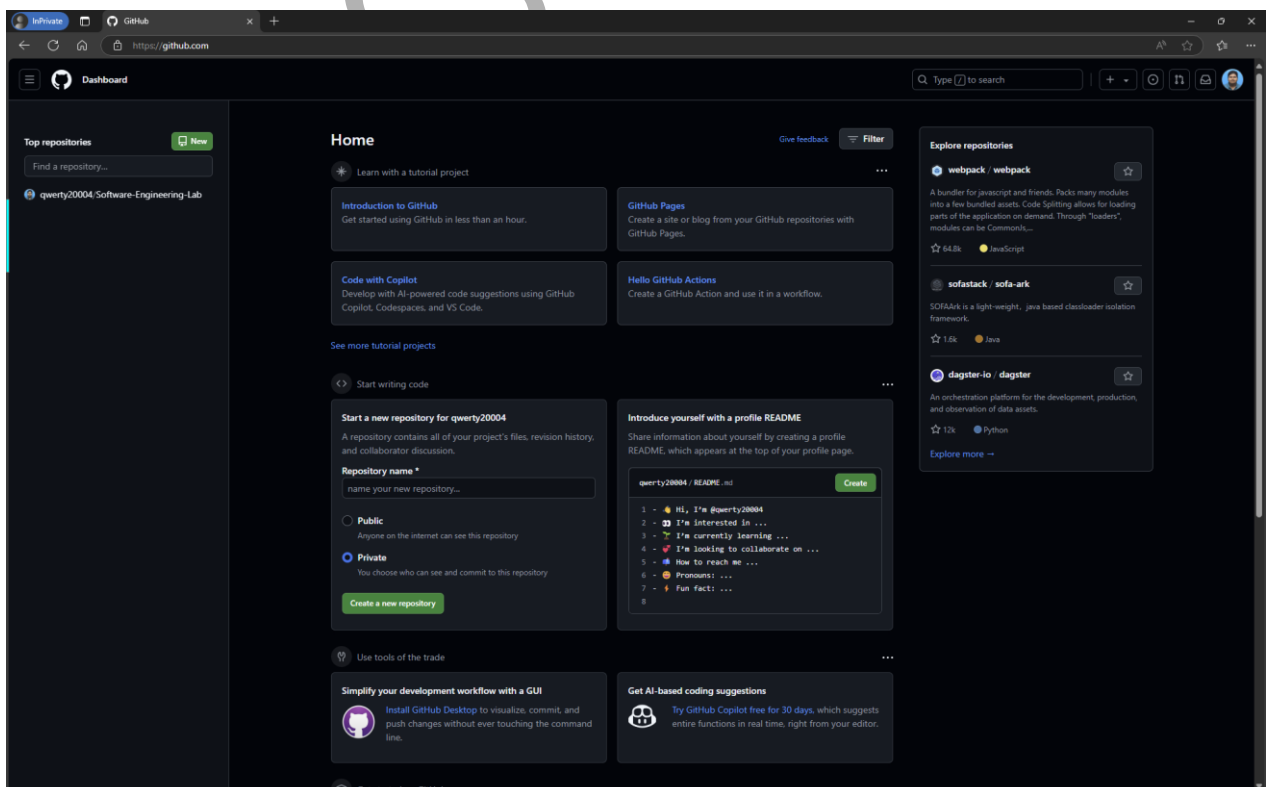
- 1. Hardcoding Variables:** Demonstrate by using predefined values.
- 2. Keyboard Input:** Use Python's `input()` to accept data from the user.
- 3. Read From File (Single Input):** Read a single input from a file.
- 4. Read From File (Multiple Inputs):** Read multiple inputs from a file and process them.
- 5. Save All Versions:** Save each version of the program in different cells/files.
- 6. Debug and Fix Errors:** Handle errors like missing files, incorrect input, etc.
- 7. Push Versions to GitHub:** You can use git commands within Colab (assuming the repository is already initialized).

1) Set Up GitHub Repository

1) Go to GitHub

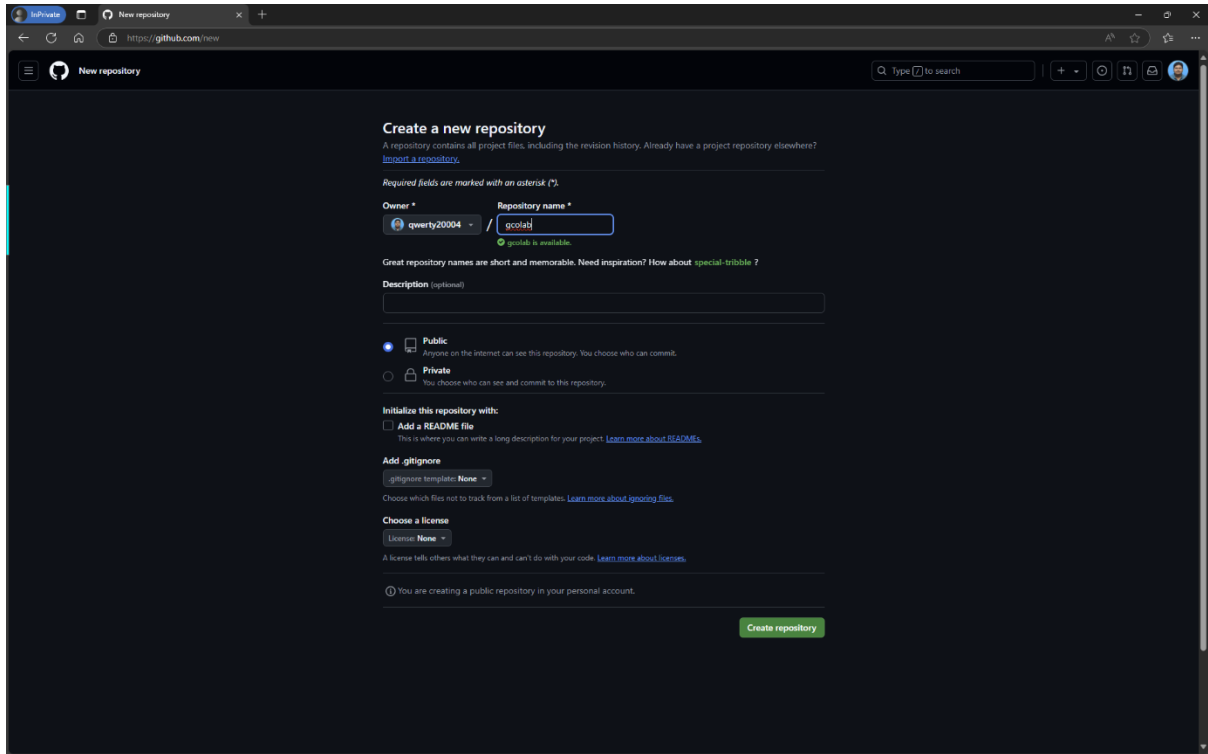


2) Log into your GitHub account.



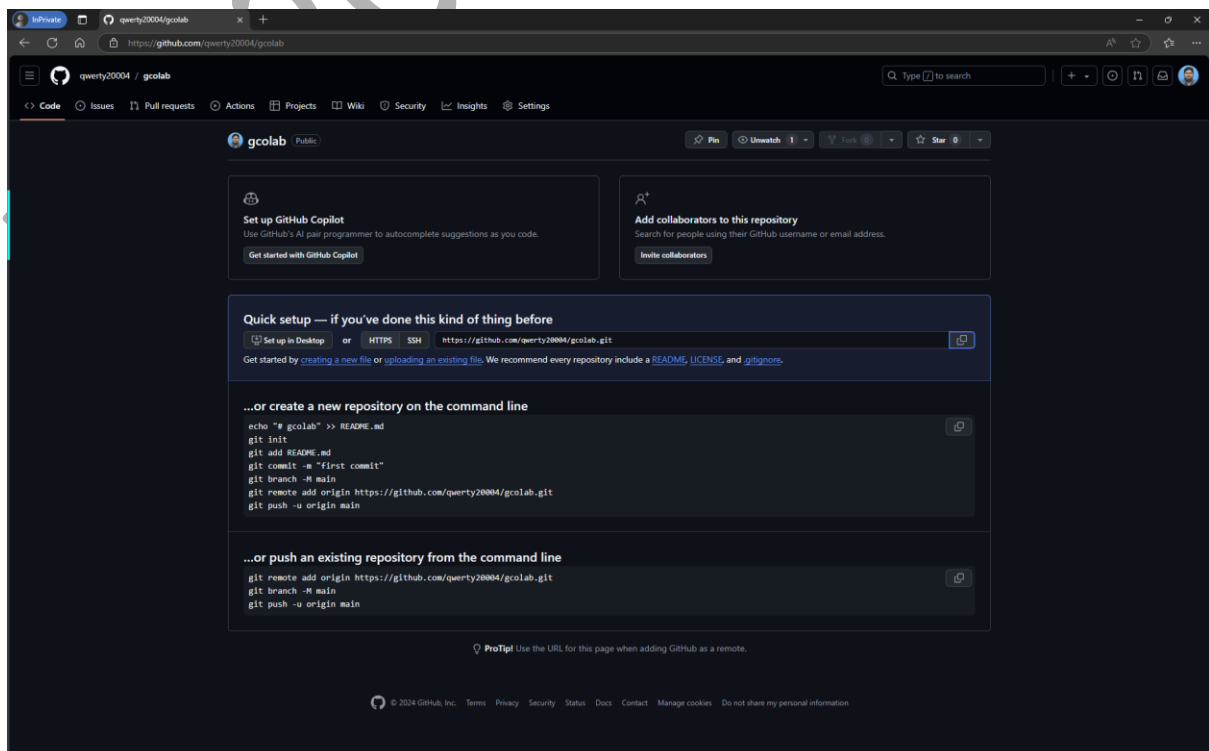
3) Create a New Repository by clicking on “New” Button on left panel and fill necessary details

Do **not** initialize the repository with a README.



The screenshot shows the GitHub 'Create a new repository' page. The 'Owner' is 'qwerty20004' and the 'Repository name' is 'gcolab', which is marked as available. The 'Description' field is empty. The 'Public' option is selected under 'Initialize this repository with:'. The 'Add a README file' checkbox is unchecked. The 'Add .gitignore' dropdown is set to 'None'. The 'Choose a license' dropdown is also set to 'None'. A green 'Create repository' button is at the bottom right.

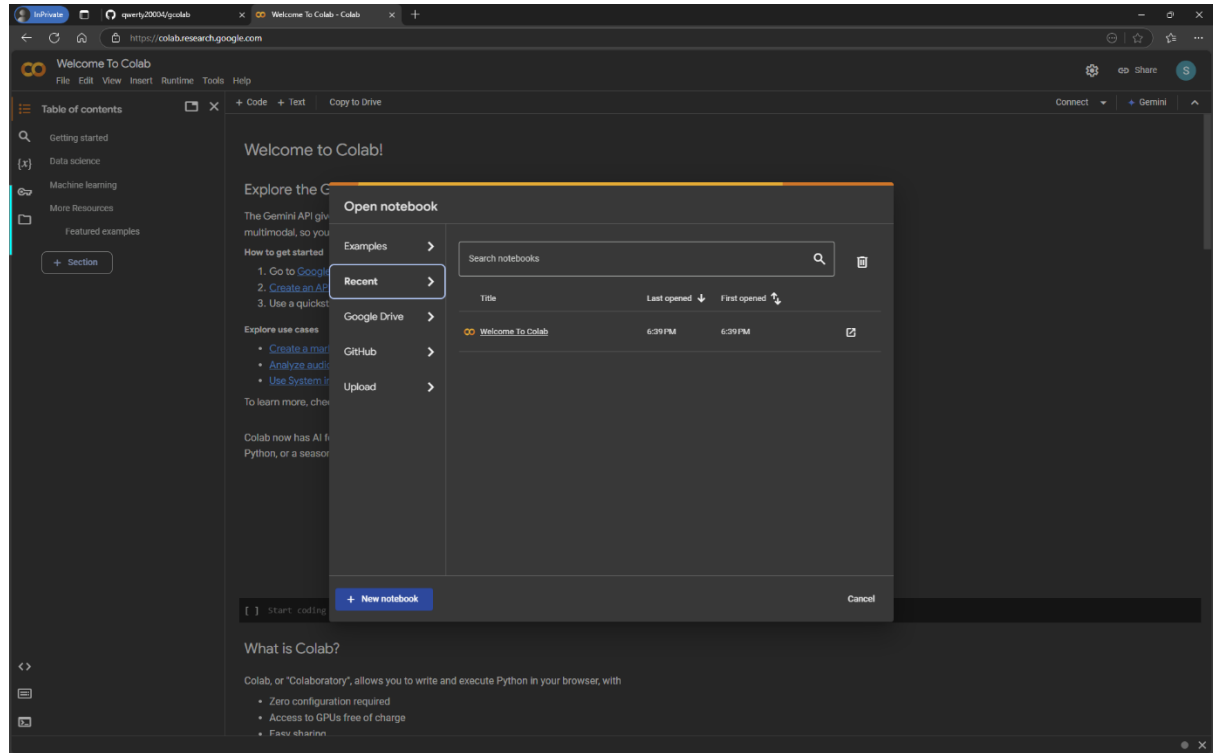
4) Copy Repository URL



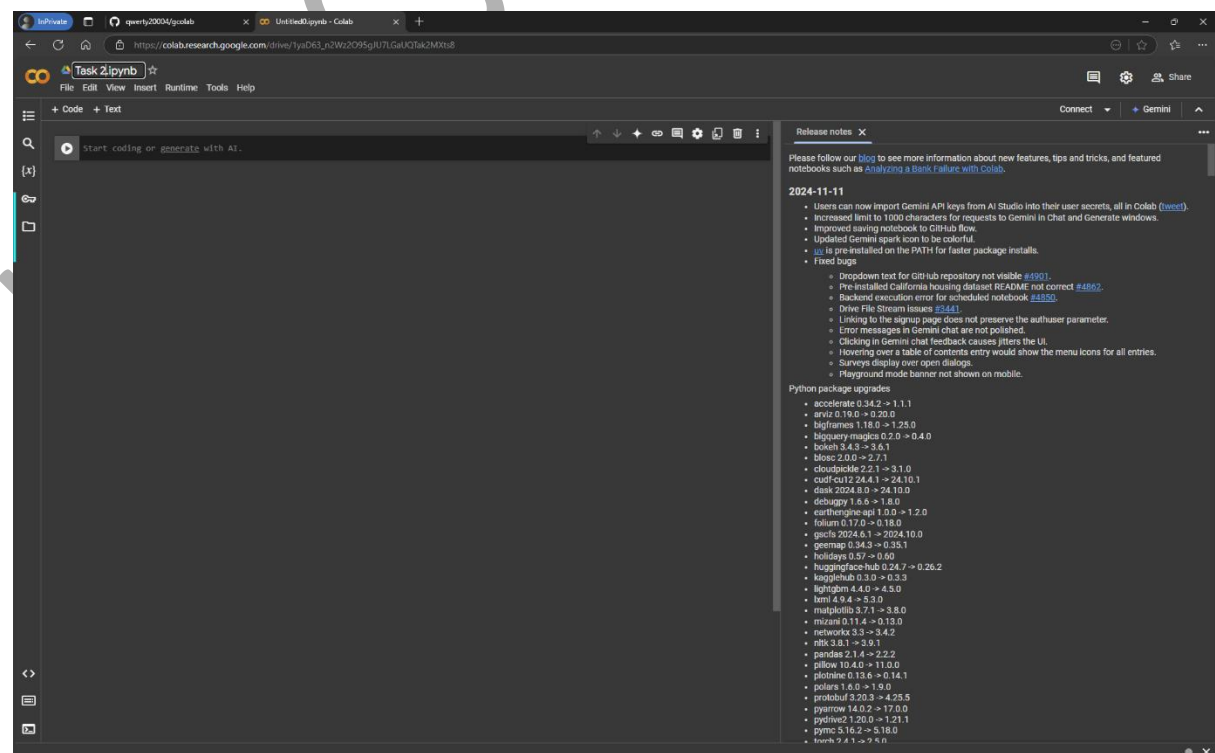
The screenshot shows the GitHub repository page for 'gcolab'. The repository is public. The page includes sections for 'Set up GitHub Copilot', 'Add collaborators to this repository', and 'Quick setup — if you've done this kind of thing before'. The 'Quick setup' section provides instructions for cloning the repository using git commands. The repository URL is displayed as 'https://github.com/qwerty20004/gcolab.git'.

2) Connect Google Colab to Google Drive

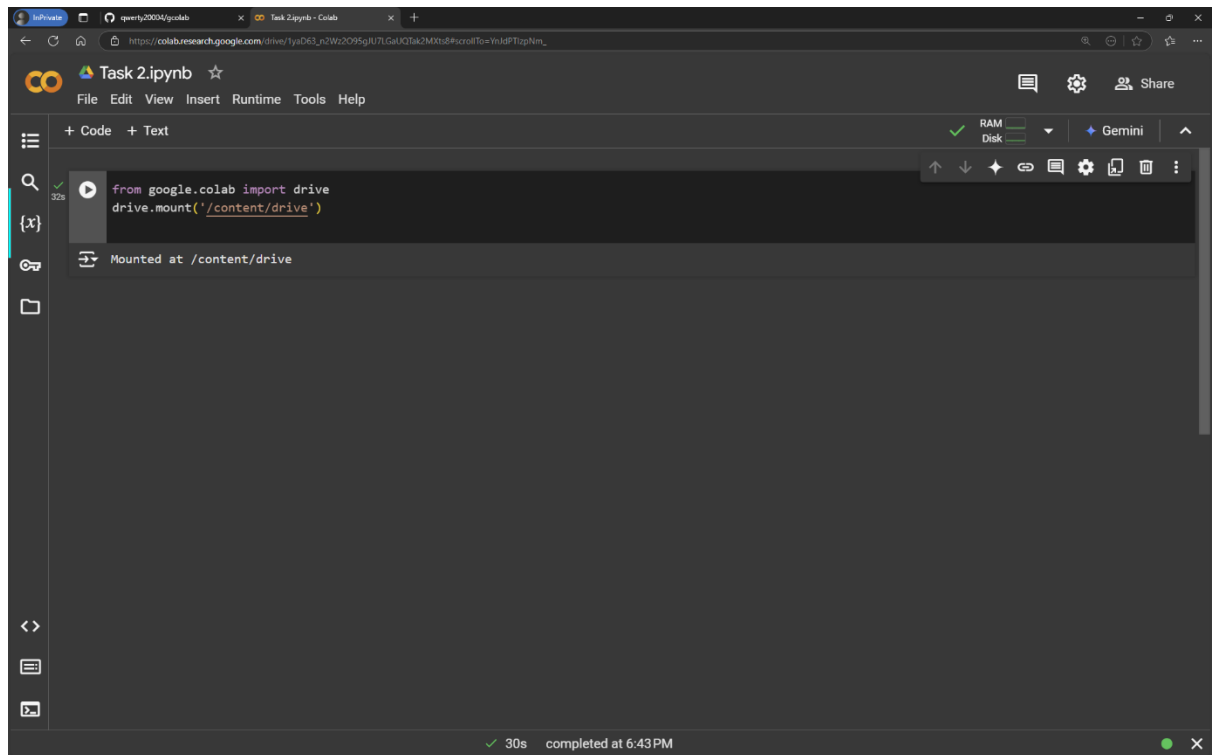
1) Login to Google Colab using Google Account



2) Create New Notebook and rename Notebook name



3) Run the following code to mount your Google Drive



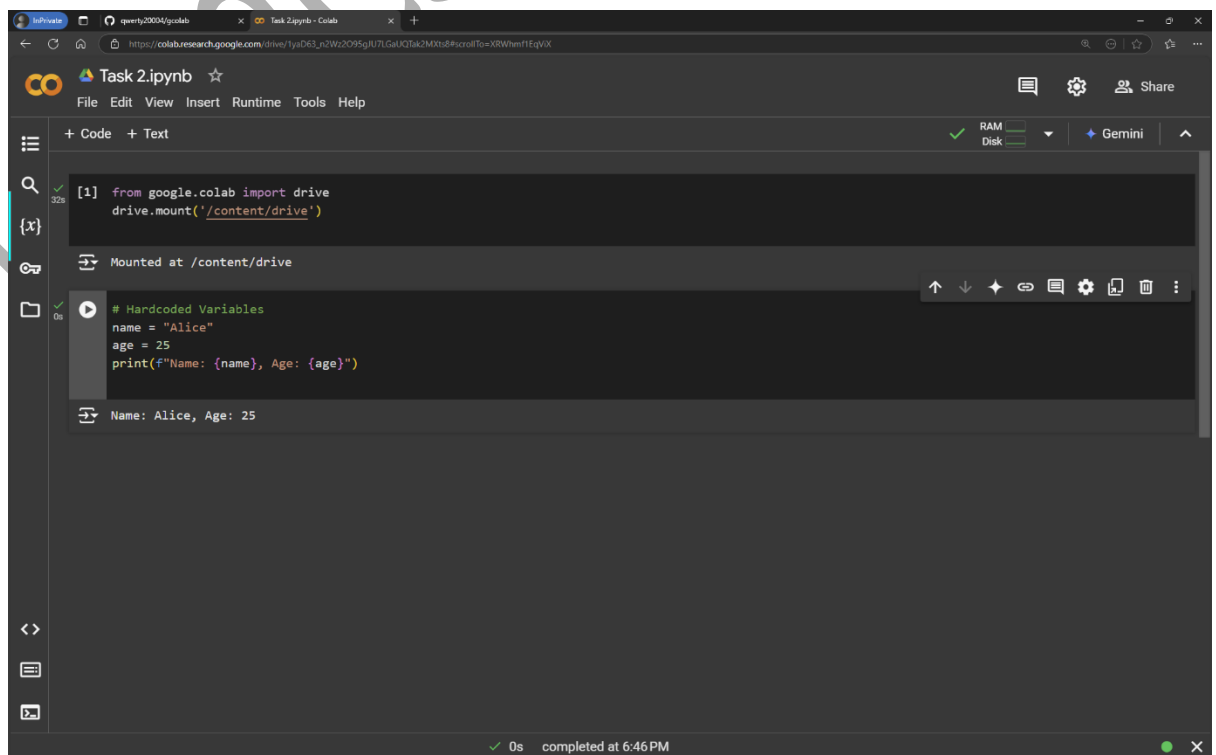
The screenshot shows a Google Colab notebook titled "Task 2.ipynb". The first code cell contains the following Python code:

```
from google.colab import drive
drive.mount('/content/drive')
```

The output of the code cell is "Mounted at /content/drive". The status bar at the bottom indicates the code was executed successfully in 30 seconds at 6:43 PM.

3) Create the Program

1) Step 1: Hardcoding Variables (Click '+ Code')



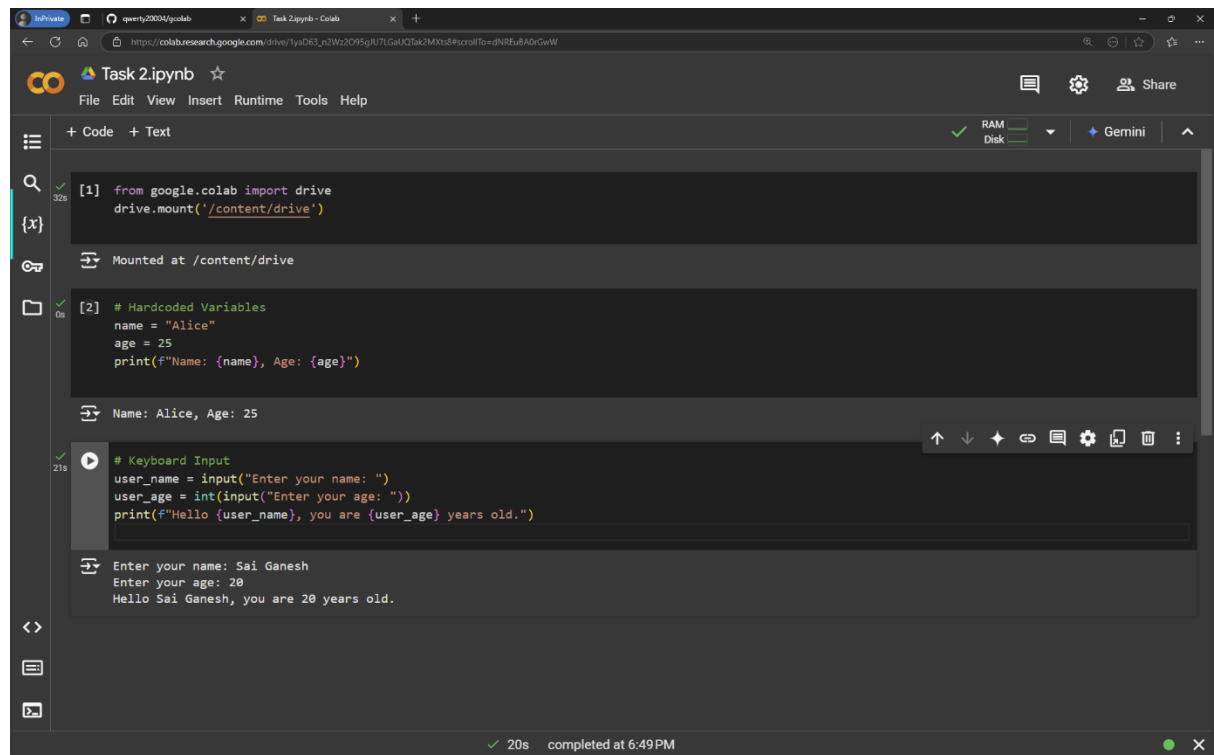
The screenshot shows the same Google Colab notebook with a second code cell added. The first cell remains the same. The second code cell contains the following Python code:

```
# Hardcoded Variables
name = "Alice"
age = 25
print(f"Name: {name}, Age: {age}")
```

The output of the second code cell is "Name: Alice, Age: 25". The status bar at the bottom indicates the code was executed successfully in 0 seconds at 6:46 PM.

2) Step 2: Keyboard Input

Accept data using input() function



```
[1] from google.colab import drive
drive.mount('/content/drive')

Mounted at /content/drive

[2] # Hardcoded Variables
name = "Alice"
age = 25
print(f"Name: {name}, Age: {age}")

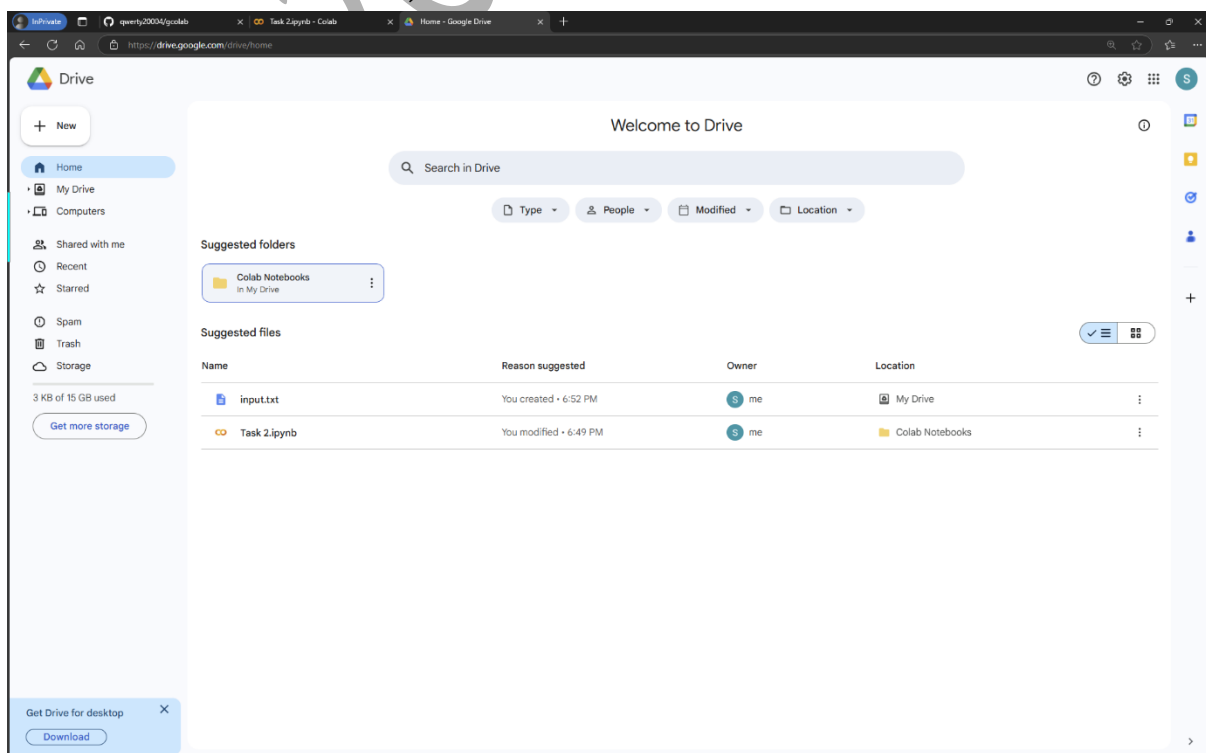
Name: Alice, Age: 25

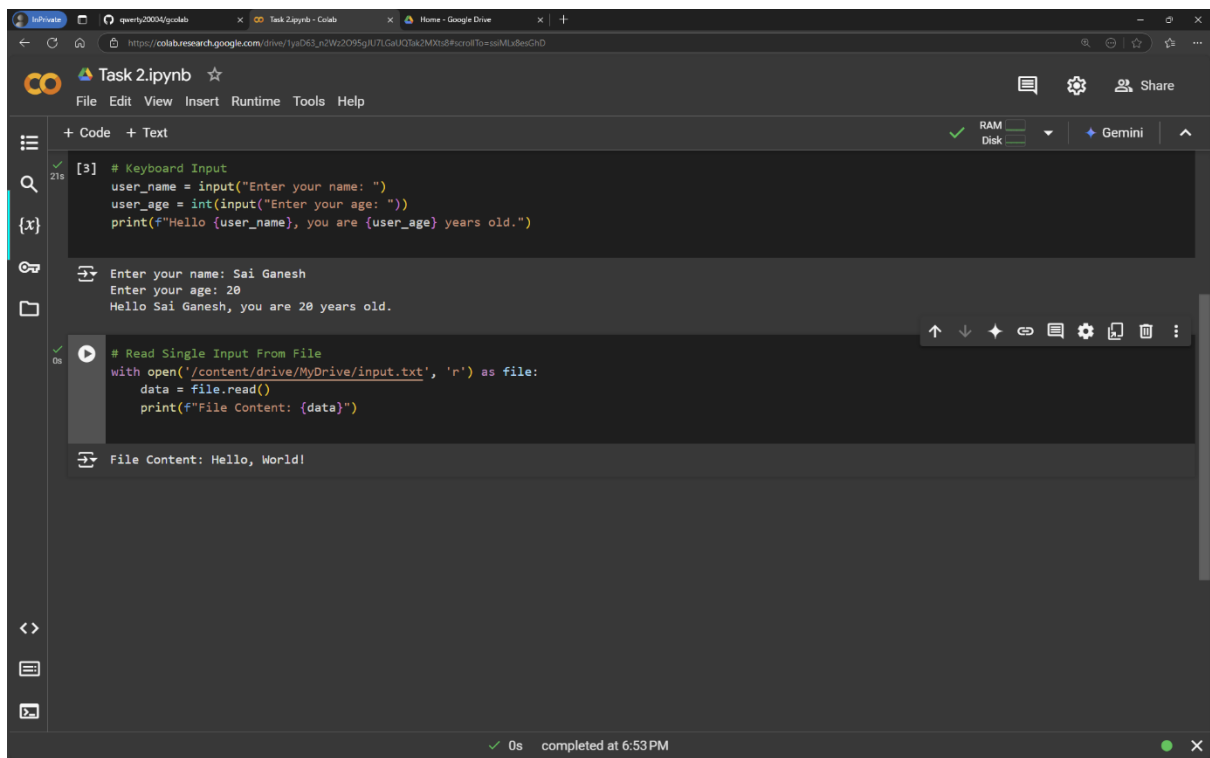
# Keyboard Input
user_name = input("Enter your name: ")
user_age = int(input("Enter your age: "))
print(f"Hello {user_name}, you are {user_age} years old.")

Enter your name: Sai Ganesh
Enter your age: 20
Hello Sai Ganesh, you are 20 years old.
```

3) Step 3: Read From File (Single Input)

Save a file (input.txt) in your Drive or upload it. Example content: Hello, World!.





```
[3] # Keyboard Input
user_name = input("Enter your name: ")
user_age = int(input("Enter your age: "))
print(f"Hello {user_name}, you are {user_age} years old.")

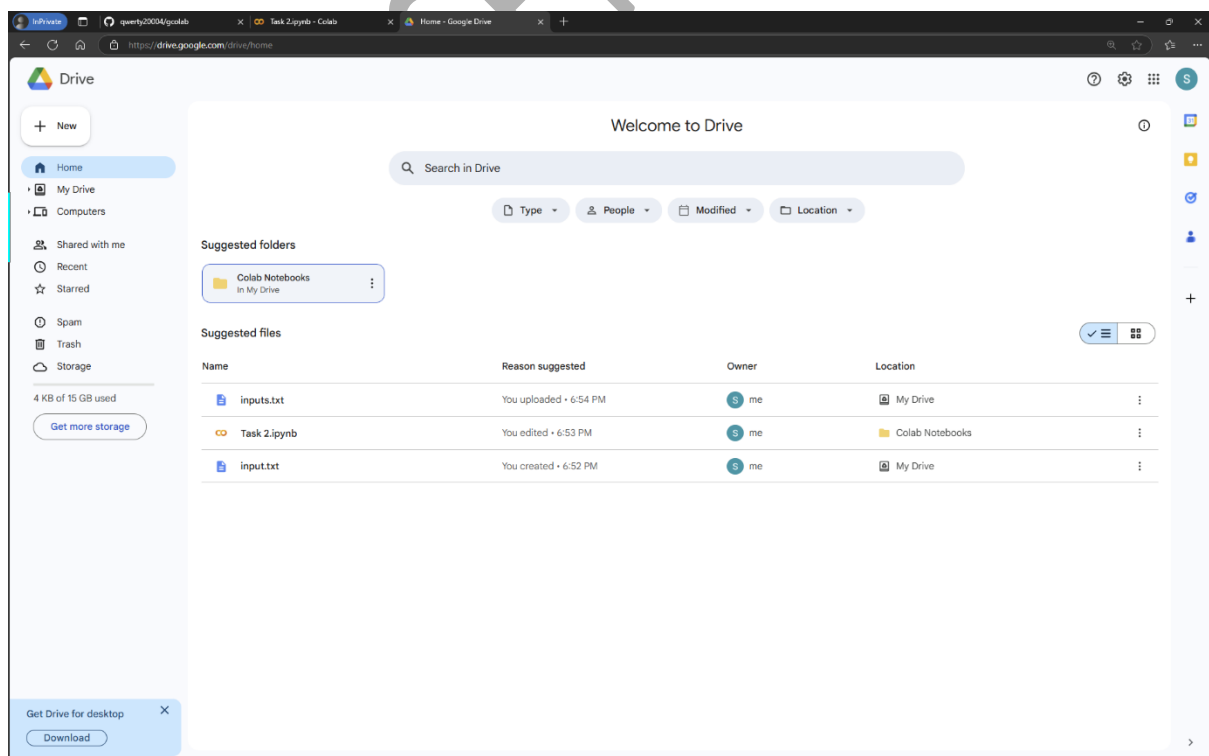
Enter your name: Sai Ganesh
Enter your age: 20
Hello Sai Ganesh, you are 20 years old.

# Read Single Input From File
with open('/content/drive/MyDrive/input.txt', 'r') as file:
    data = file.read()
    print(f"File Content: {data}")

File Content: Hello, World!
```

4) Read From File (Multiple Inputs)

Save a file (inputs.txt) in your Drive with multiple lines of data.



```
21a Enter your age: 20
Hello Sai Ganesh, you are 20 years old.

[4] # Read Single Input From File
with open('/content/drive/MyDrive/input.txt', 'r') as file:
    data = file.read()
    print(f"File Content: {data}")

File Content: Hello, World!

1a # Read Multiple Inputs From File
with open('/content/drive/MyDrive/inputs.txt', 'r') as file:
    for line in file:
        name, age = line.strip().split(',')
        print(f"Name: {name}, Age: {age}")

Name: Alice, Age: 25
Name: Bob, Age: 30
Name: Charlie, Age: 35
```

5) Step 5: Save All Versions

Save different versions of the code by creating new cells for each variation in the notebook.

6) Step 6: Debug and Fix Errors

Add error handling for missing files or incorrect inputs

```
[6] # Debugging and Error Handling
try:
    with open('/content/drive/MyDrive/input.txt', 'r') as file:
        data = file.read()
        print(data)
except FileNotFoundError:
    print("Error: File not found.")
except ValueError:
    print("Error: Incorrect input format.")

Hello, World!

# Debugging and Error Handling
try:
    with open('/content/drive/MyDrive/inputs.txt', 'r') as file:
        data = file.read()
        print(data)
except FileNotFoundError:
    print("Error: File not found.")
except ValueError:
    print("Error: Incorrect input format.")

Alice,25
Bob,30
Charlie,35
```


4) Push Versions to GitHub:

Uses git commands within Colab to push changes.

