

SE Lab Task-2

1. Implement weather modeling* using the quadratic solution in stages: hard-coding variables keyboard input, read from a file, for a single set of input, multiple sets of inputs.
2. Save all versions, debug, fix problems, create a Github account

1. Hardcoding variables

```
[2] def Temperature_modeling(a, b, c, time):
    temperature = a*time**2 + b*time + c
    return temperature

[6] #Hardcoded variables
a, b, c=0.1, 2, 10
time=5

[7] #display results
print("Hard-coded variables for weather modeling")
print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))
```

Hard-coded variables for weather modeling
Temperature for hardcoded coefficients at time 5 hours: 22.5

2. Accepting variables via Keyboard input

```
[9] a=float(input("Enter coefficient a: "))
    b=float(input("Enter coefficient b: "))
    c=float(input("Enter coefficient c: "))
    time=float(input("Enter time: "))

Enter coefficient a: 0.1
Enter coefficient b: 3
Enter coefficient c: 10
Enter time: 4

[10] #variables read from keyboard
print("Hard-coded variables for weather modeling")
print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))
```

Hard-coded variables for weather modeling
Temperature for hardcoded coefficients at time 4.0 hours: 23.6

3. Reading variables from the uploaded file

```
#Read coefficients from a file
def read_from_file(filename):
    with open(filename, 'r') as file:
        lines = file.readlines()
        coefficients = [tuple(map(float, line.strip().split(','))) for line in lines]
    return coefficients
```

4. A single set of inputs

```
# Example: Processing a single set of inputs.
coefficients = read_from_file('/content/coefficients.txt')
a, b, c, time = coefficients[0]
temperature = Temperature_modeling(a, b, c, time)
print("read from a file for weather modeling")
print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))
```

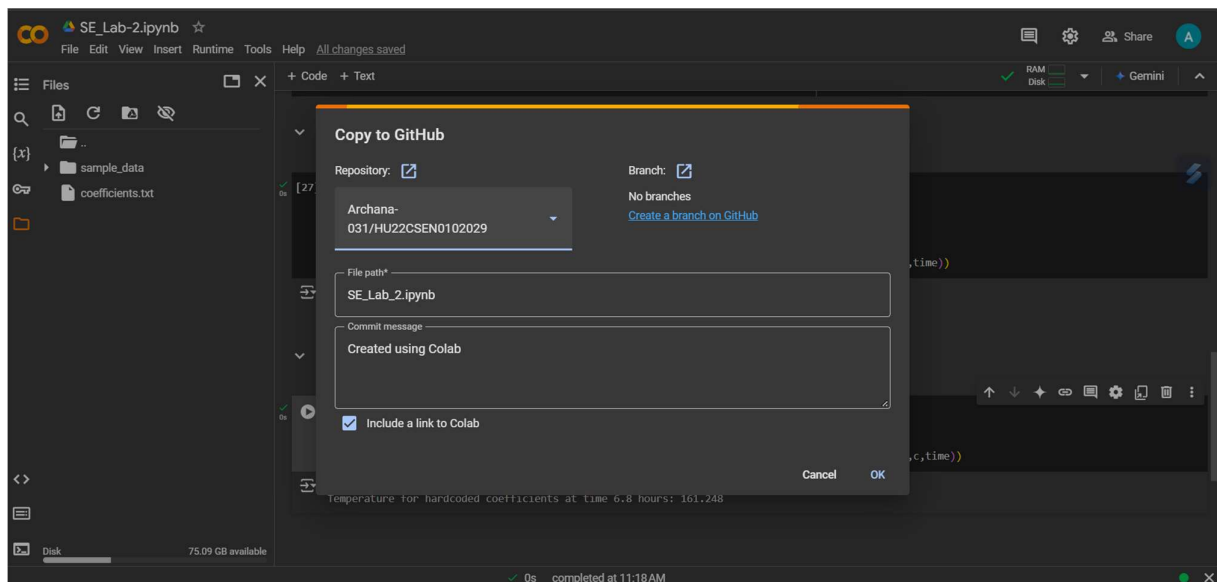
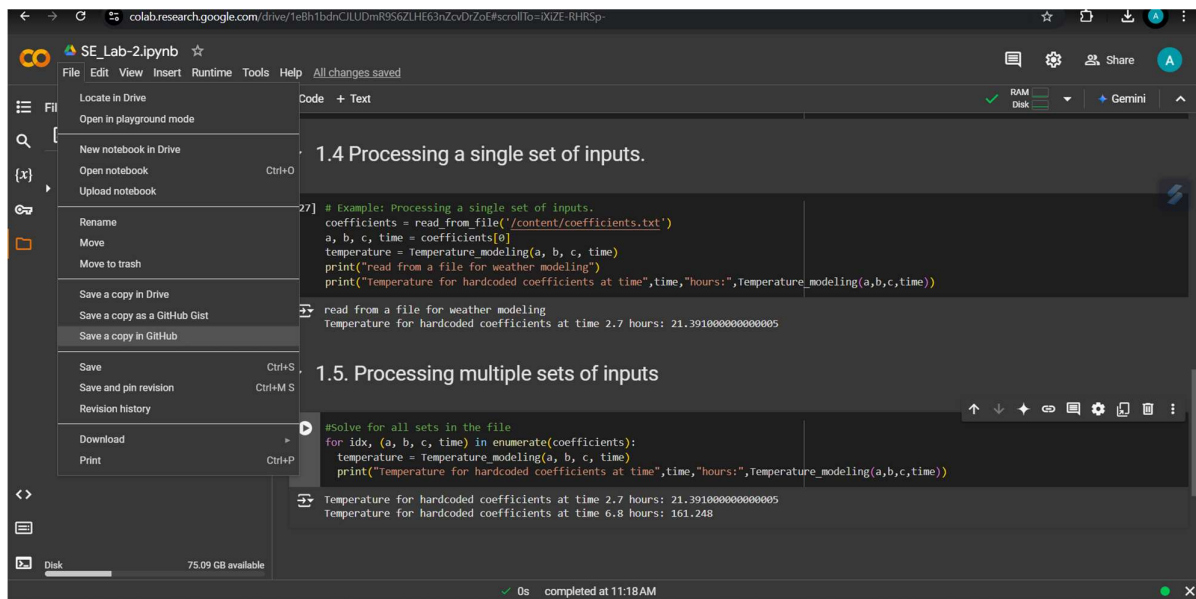
read from a file for weather modeling
Temperature for hardcoded coefficients at time 2.7 hours: 21.391000000000005

5. Multiple set of inputs

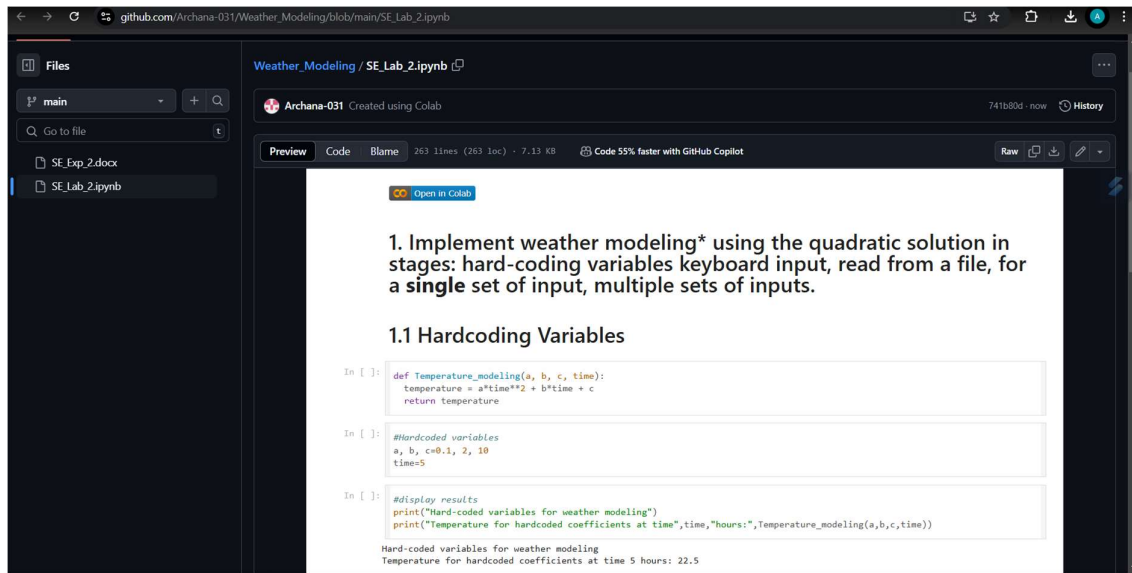
```
#Solve for all sets in the file
for idx, (a, b, c, time) in enumerate(coefficients):
    temperature = Temperature_modeling(a, b, c, time)
    print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))
```

Temperature for hardcoded coefficients at time 2.7 hours: 21.391000000000005
Temperature for hardcoded coefficients at time 6.8 hours: 161.248

6. Saving the code in Github Repository



7. Pushed into Github



The screenshot displays a GitHub repository page for a user named Archana-031. The repository is titled "Weather_Modeling" and the specific file being viewed is "SE_Lab_2.ipynb". The file is a Jupyter Notebook, and its content is shown in a preview mode. The notebook includes a task description, a subheading, and three code blocks with Python code for weather modeling.

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1.1 Hardcoding Variables

```
In [ ]: def Temperature_modeling(a, b, c, time):
        temperature = a*time**2 + b*time + c
        return temperature

In [ ]: #Hardcoded variables
        a, b, c=0.1, 2, 10
        time=5

In [ ]: #display results
        print("Hard-coded variables for weather modeling")
        print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))
```

Hard-coded variables for weather modeling
Temperature for hardcoded coefficients at time 5 hours: 22.5