Archana Ray

HU22CSEN0102029

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

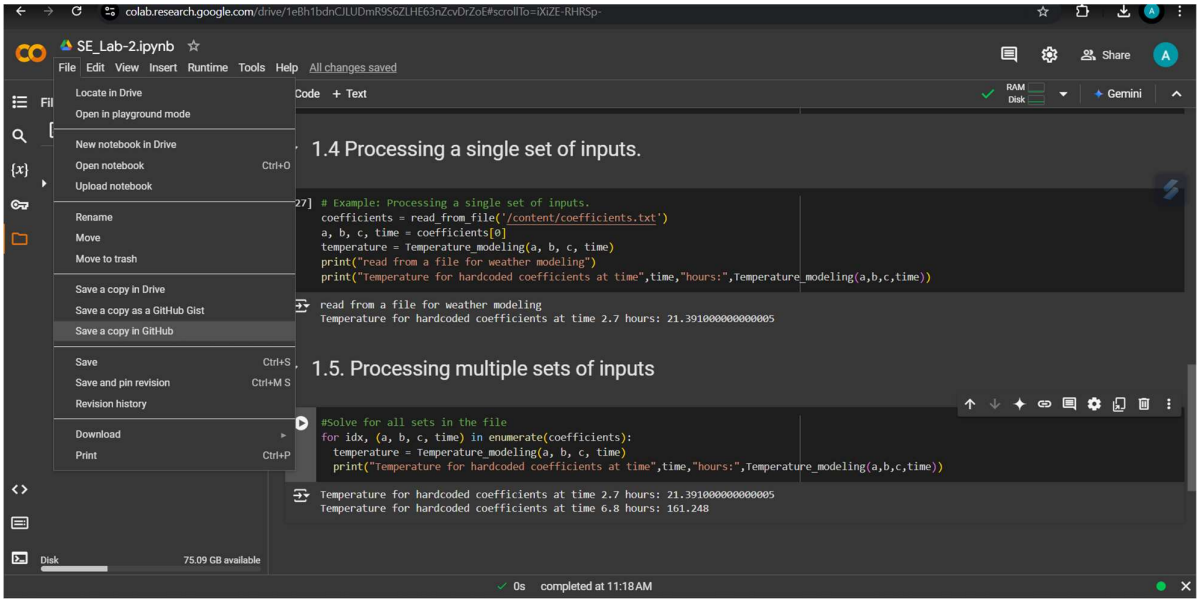
```
# Example: Processing a single set of inputs.
coefficients = read_from_file('/content/coefficients.txt')
a, b, c, time = coefficients[0]
temperature = Temperature_modeling(a, b, c, time)
print("read from a file for weather modeling")
print("Temperature for hardcoded coefficients at time",time,"hours:",Temperature_modeling(a,b,c,time))

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

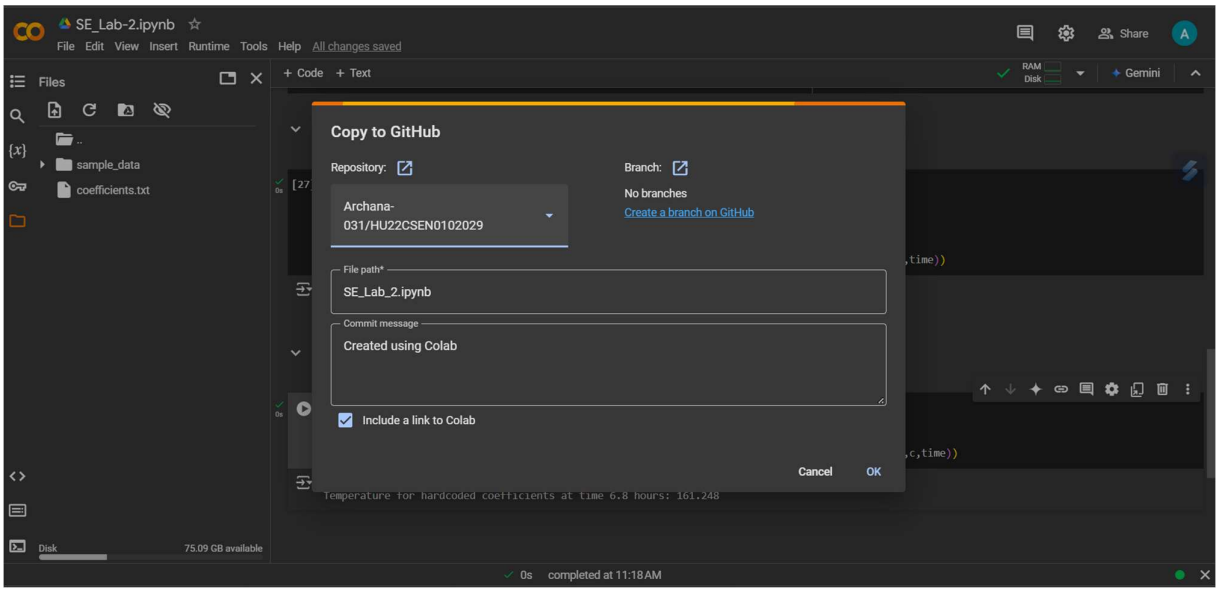
5. Multiple set of inputs

```
#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