



**GEO115 PROGRAMMING IN GIS**

**Topic: Week 3**

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## TASK 1

The screenshot shows the Visual Studio Code interface with a project named 'Geo115'. The Explorer sidebar on the left shows the file structure: 'Week\_2' containing 'hello\_world.py' and 'Week\_3' containing 'lab\_task\_1.py', 'lab\_task\_2.py', 'lab\_task\_3.py', 'lab\_task\_4.py', '.gitattributes', and '.gitignore'. The 'lab\_task\_1.py' file is selected and its content is displayed in the main editor. The code performs arithmetic operations and prints the results. Below the editor, the TERMINAL panel shows the command used to run the script and its output.

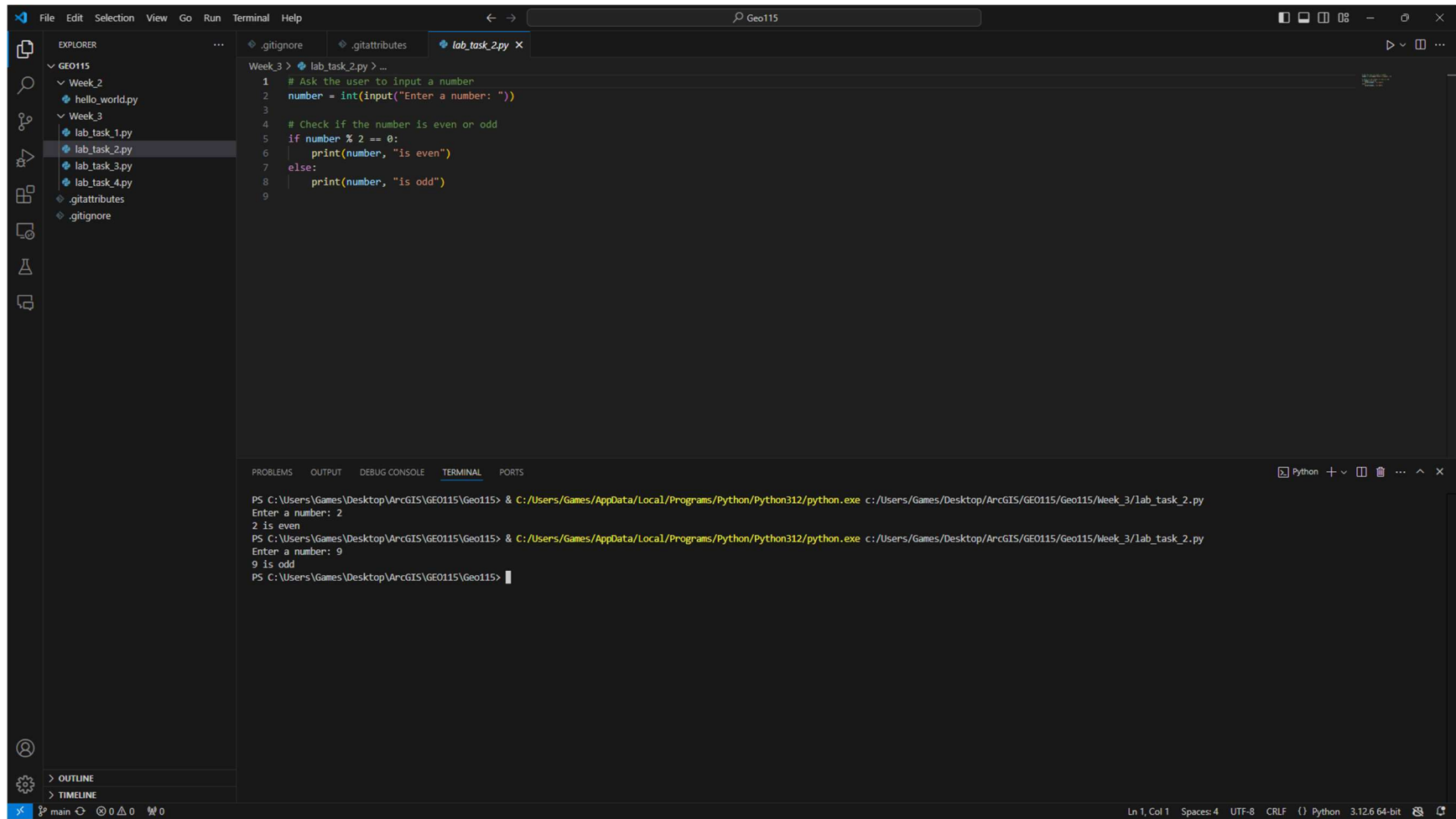
```
File Edit Selection View Go Run Terminal Help
Geo115
lab_task_1.py x
Week_3 > lab_task_1.py > ...
7 # Perform arithmetic operations
8 sum_value = age + 10
9 product_value = price * 2
10
11 # Print results
12 print("Age:", age)
13 print("Price:", price)
14 print("Name:", name)
15 print("Is student:", is_student)
16 print("Sum value:", sum_value)
17 print("Product value:", product_value)
18
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Games\Desktop\ArcGIS\Geo115\Geo115> & C:/Users/Games/AppData/Local/Programs/Python/Python312/python.exe c:/Users/Games/Desktop/ArcGIS/Geo115/Geo115/Week_3/lab_task_1.py
Age: 30
Price: 9.99
Name: Alice
Is student: True
Sum value: 40
Product value: 19.98
PS C:\Users\Games\Desktop\ArcGIS\Geo115\Geo115>
```

Ln 17, Col 39 Spaces: 4 UTF-8 CRLF Python 3.12.6 64-bit

## TASK 2



The screenshot shows a Visual Studio Code editor window with a dark theme. The Explorer sidebar on the left displays a file tree for a project named 'Geo115'. Under 'Week\_3', the file 'lab\_task\_2.py' is selected. The main editor area shows the code for 'lab\_task\_2.py', which is a Python script that prompts the user for a number and checks if it is even or odd. The script is as follows:

```
1 # Ask the user to input a number
2 number = int(input("Enter a number: "))
3
4 # Check if the number is even or odd
5 if number % 2 == 0:
6     print(number, "is even")
7 else:
8     print(number, "is odd")
9
```

Below the editor, the TERMINAL panel is active, showing the command prompt output of running the script twice. The first run shows the input '2' and the output '2 is even'. The second run shows the input '9' and the output '9 is odd'.

```
PS C:\Users\Games\Desktop\ArcGIS\Geo115> & C:/Users/Games/AppData/Local/Programs/Python/Python312/python.exe c:/Users/Games/Desktop/ArcGIS/Geo115/Week_3/lab_task_2.py
Enter a number: 2
2 is even
PS C:\Users\Games\Desktop\ArcGIS\Geo115> & C:/Users/Games/AppData/Local/Programs/Python/Python312/python.exe c:/Users/Games/Desktop/ArcGIS/Geo115/Week_3/lab_task_2.py
Enter a number: 9
9 is odd
PS C:\Users\Games\Desktop\ArcGIS\Geo115>
```

The status bar at the bottom of the window indicates the current file is 'main', the encoding is 'UTF-8', and the Python interpreter is '3.12.6 64-bit'.

### TASK 3

The screenshot displays the Visual Studio Code interface with a dark theme. The Explorer sidebar on the left shows a project structure with folders 'GEO115', 'Week\_2', and 'Week\_3'. Under 'Week\_3', there are four Python files: 'lab\_task\_1.py', 'lab\_task\_2.py' (selected), 'lab\_task\_3.py', and 'lab\_task\_4.py'. The main editor area shows the content of 'lab\_task\_2.py', which is a Python script for checking if a number is even or odd. The script prompts the user to enter a number and prints the result. The output window at the bottom shows the execution of the script, with the command prompt running the Python interpreter and the script file. The output shows the program running twice: first with input '2' resulting in '2 is even', and then with input '9' resulting in '9 is odd'.

```
File Edit Selection View Go Run Terminal Help
EXPLORER
GEO115
Week_2
  hello_world.py
Week_3
  lab_task_1.py
  lab_task_2.py
  lab_task_3.py
  lab_task_4.py
.gitattributes
.gitignore

lab_task_2.py x
Week_3 > lab_task_2.py > ...
1 # Ask the user to input a number
2 number = int(input("Enter a number: "))
3
4 # Check if the number is even or odd
5 if number % 2 == 0:
6     print(number, "is even")
7 else:
8     print(number, "is odd")
9

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Python + -
P5 C:\Users\Games\Desktop\ArcGIS\GEO115\GEO115> & C:\Users\Games\AppData\Local\Programs\Python\Python312\python.exe c:/Users/Games/Desktop/ArcGIS/GEO115/Geo115/Week_3/lab_task_2.py
Enter a number: 2
2 is even
P5 C:\Users\Games\Desktop\ArcGIS\GEO115\GEO115> & C:\Users\Games\AppData\Local\Programs\Python\Python312\python.exe c:/Users/Games/Desktop/ArcGIS/GEO115/Geo115/Week_3/lab_task_2.py
Enter a number: 9
9 is odd
P5 C:\Users\Games\Desktop\ArcGIS\GEO115\GEO115>

main 0 0 0 0 0 0
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF Python 3.12.6 64-bit
```

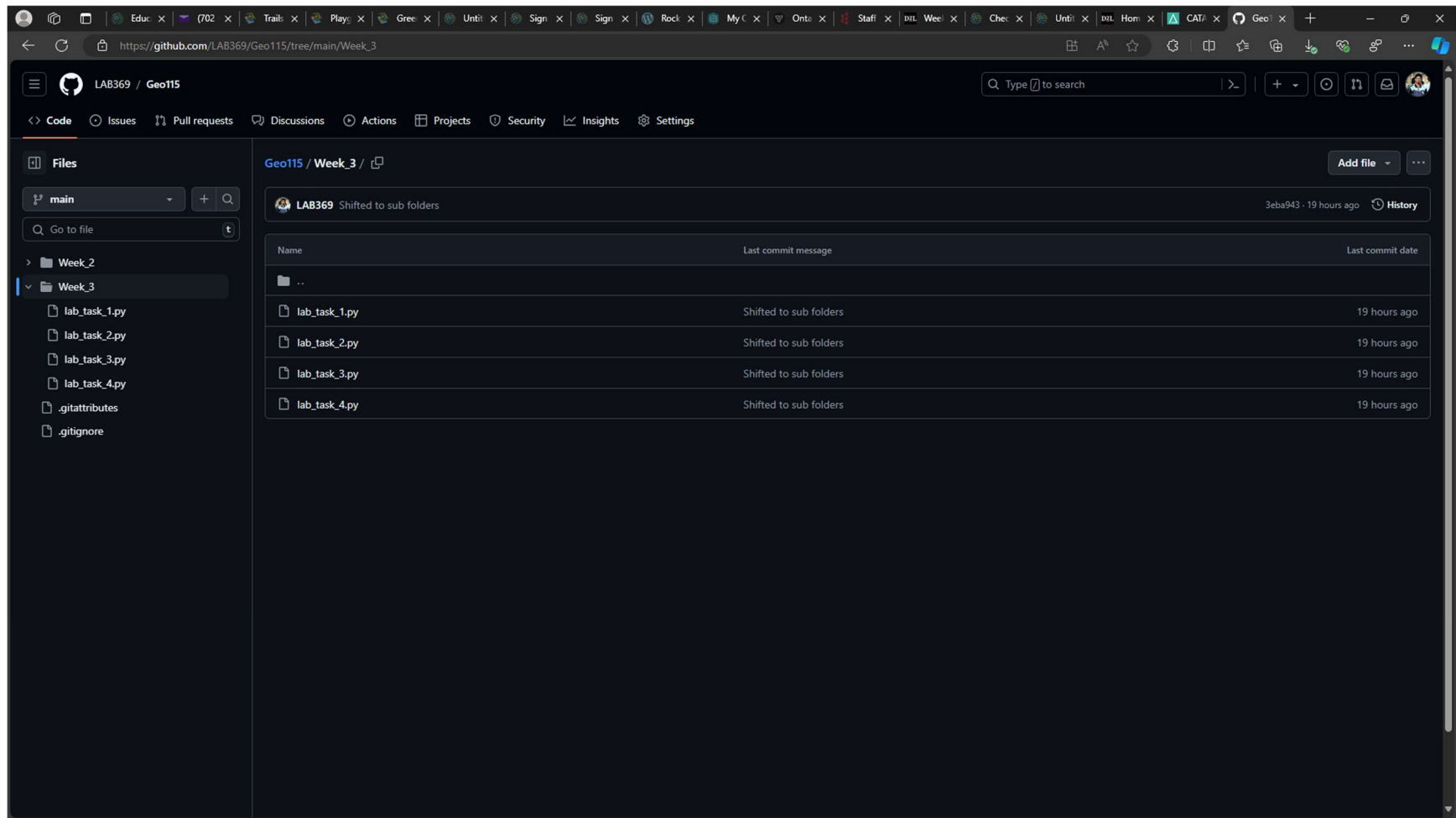
## TASK 4

The screenshot displays the Visual Studio Code interface with the following components:

- EXPLORER:** Shows the file structure with 'lab\_task\_4.py' selected under 'Week\_3'.
- EDITOR:** Contains the Python code for 'lab\_task\_4.py'.

```
1 # Nested If-Else Statements Example: Age Category
2 def age_category():
3     age = int(input("Enter your age: "))
4     if age < 13:
5         print("You are a child.")
6     elif 13 <= age < 20:
7         print("You are a teenager.")
8     elif 20 <= age < 65:
9         print("You are an adult.")
10    else:
11        print("You are a senior.")
12
13 # Multiple Conditions Example: Positive, Negative, or Zero
14 def number_check():
15     number = int(input("Enter a number: "))
16     if number > 0:
17         print("Positive number")
18     elif number == 0:
19         print("Zero")
20     else:
21         print("Negative number")
22
23 # Boolean Operations Example: Valid Email
24 def email_validation():
25     email = input("Enter your email: ")
26     if "@" in email and "." in email:
27         print("Valid email address")
```
- TERMINAL:** Shows the execution of the program. The user selects option 1 (Age Category), enters age 6, and receives the output "You are a child." The prompt is now "PS C:\Users\Games\Desktop\ArcGIS\Geo115\Geo115>".
- STATUS BAR:** Indicates the current file is 'main', line 1, column 1, with 4 spaces, UTF-8 encoding, CRLF line endings, and Python 3.12.6 64-bit.

## GitHub Push



The screenshot shows a GitHub repository page for user LAB369, specifically the 'Week\_3' directory. The interface is in dark mode. The left sidebar shows the file tree with 'Week\_3' selected. The main area displays a commit history table for 'Week\_3'.

Repository: LAB369 / Geo115

Navigation: Code, Issues, Pull requests, Discussions, Actions, Projects, Security, Insights, Settings

Files sidebar: main, Week\_2, Week\_3 (selected), lab\_task\_1.py, lab\_task\_2.py, lab\_task\_3.py, lab\_task\_4.py, .gitattributes, .gitignore

Commit history for Week\_3:

Name	Last commit message	Last commit date
..		
lab_task_1.py	Shifted to sub folders	19 hours ago
lab_task_2.py	Shifted to sub folders	19 hours ago
lab_task_3.py	Shifted to sub folders	19 hours ago
lab_task_4.py	Shifted to sub folders	19 hours ago