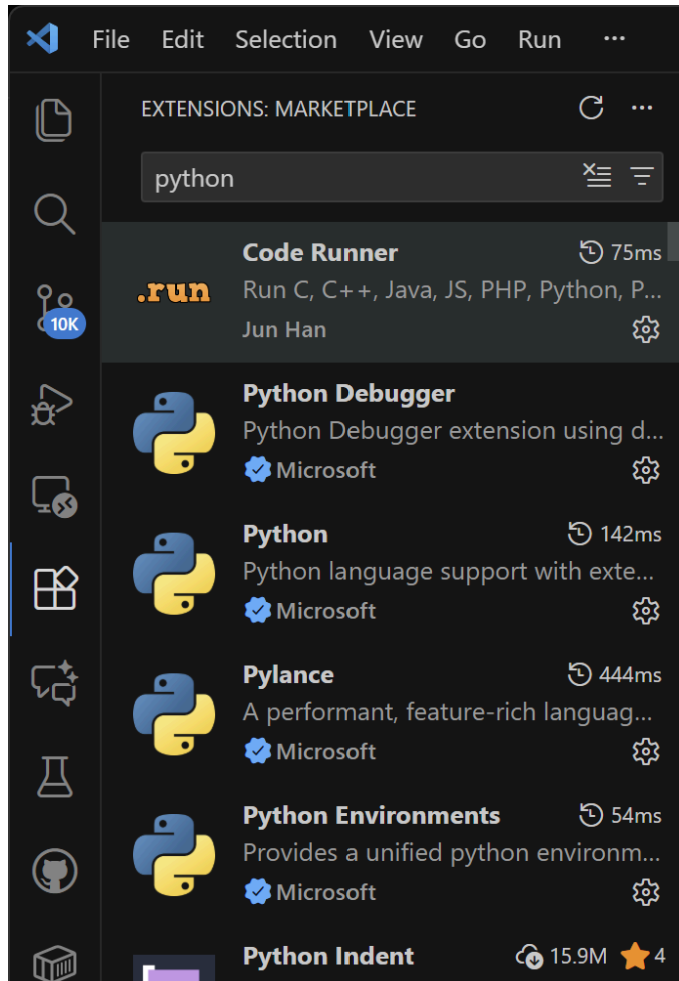
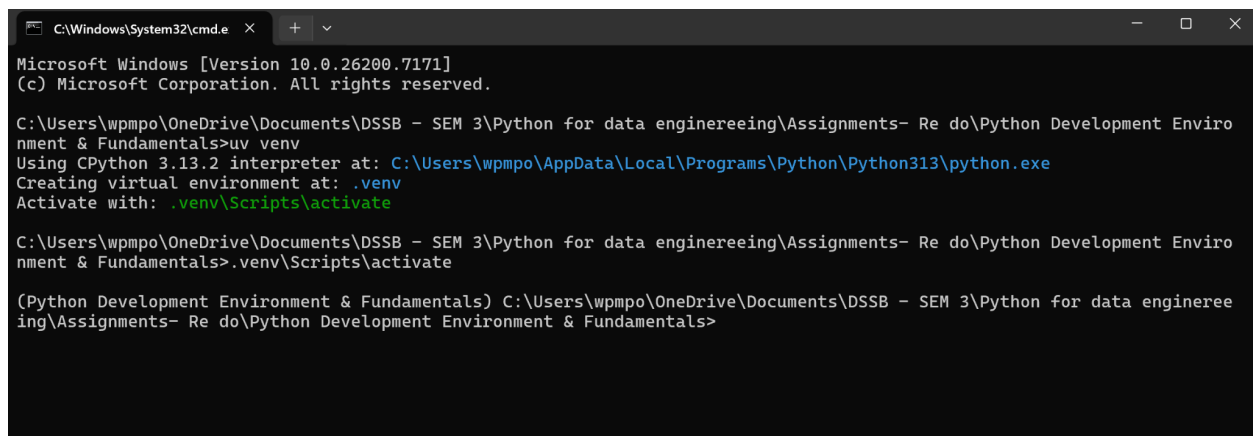


Environment Setup (25pts):

- VS Code screenshot with Python extension and virtual environment configured
- Virtual environment activation screenshot showing successful package installation
- requirements.txt with: pandas==2.3.2, requests==2.31.0, matplotlib==3.7.2



Installed Python Extensions.



Creating and activating the Virtual environment.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS powershell + v [ ] [ ] ... | [ ] [ ] X

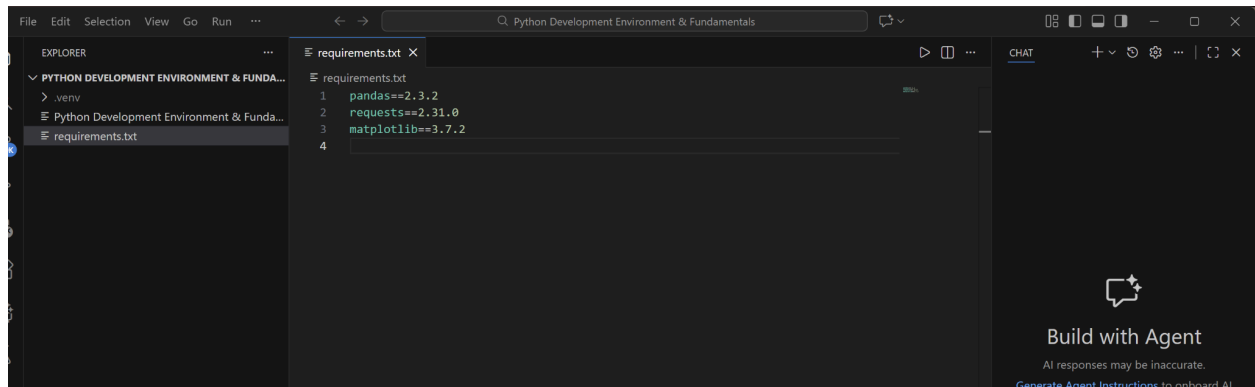
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> python --version
Python 3.13.2
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> uv --version
uv 0.9.11 (8d8aabb88 2025-11-20)
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> uv venv --python 3.11
Using CPython 3.11.9 interpreter at: C:\Users\wpmo\AppData\Local\Programs\Python\Python311\python.exe
Creating virtual environment at: .venv
Activate with: .venv\Scripts\activate
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> .venv\Scripts\activate
(Python Development Environment & Fundamentals) PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Pyt
● hon for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> |
```

(Initially had an error due to the incompatibility of the python version and the package versions.  
So needed to install python version 3.11 )

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS powershell + v [ ] [ ] ... | [ ] [ ] X

PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> python --version
Python 3.13.2
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> uv --version
uv 0.9.11 (8d8aabb88 2025-11-20)
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> uv venv --python 3.11
Using CPython 3.11.9 interpreter at: C:\Users\wpmo\AppData\Local\Programs\Python\Python311\python.exe
Creating virtual environment at: .venv
Activate with: .venv\Scripts\activate
PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Pyt
● hon Development Environment & Fundamentals> .venv\Scripts\activate
(Python Development Environment & Fundamentals) PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Pyt
● hon for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> ^C
(Python Development Environment & Fundamentals) PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Pyt
● hon for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> uv pip sy
nc requirements.txt
Resolved 3 packages in 127ms
Prepared 2 packages in 3.27s
Installed 3 packages in 471ms
+ matplotlib==3.7.2
+ pandas==2.3.2
+ requests==2.31.0
(Python Development Environment & Fundamentals) PS C:\Users\wpmo\OneDrive\Documents\DSSB - SEM 3\Pyt
● hon for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> |
```

Packages installed



## Requirements.txt file

=====

```
Python Script (50pts):
Create `data_analyzer.py` demonstrating:
- Variables (strings, integers, lists, dictionaries)
- Conditionals (if/elif/else)
- Loops (both while and for)
- Data structures (lists, tuples, dictionaries)
- Built-in functions: enumerate, range, id
- String to int casting
- Import from separate `utils.py` module
- if __name__ == "__main__" construct
```

```
requirements.txt × data_analyzer.py × utils.py
data_analyzer.py > main
1  from utils import greet_user
2
3
4  #demonstration of variables
5  def main():
6      name = "Pasindu"
7      age = "26"
8      hobbies = ["Reading", "Trading", "Traveling"]
9      birth_date = "1999-11-04"
10
11     profile = {
12         "Name": name,
13         "Age": age,
14         "Hobbies": hobbies,
15         "Birth Date": birth_date
16     }
17
18     age_int = int(age)
19     profile["Age"] = age_int
20
21     print(id(profile))
22
23     #demonstration of conditional statements
24     print("Am I an adult?")
25     if age_int < 30:
26         print("You are a young adult.")
27     elif age_int < 18:
28         print("You are a minor.")
29     else:
30         print("You are an adult.")
31
32
33     #demonstration of loops
34     print("\nHobbies:")
35     for hobby in hobbies:
36         print(f"Hobby: {hobby}")
37
38     count = 0
39     while count < len(hobbies):
40         print(f"Hobby {count + 1}: {hobbies[count]}")
41         count += 1
```

```
← → Python Development Environment & Fundamentals
requirements.txt × data_analyzer.py × utils.py ×
utils.py > greet_user
1  def greet_user(name: str) -> str :
2      return f"Hello I am, {name}!"
```

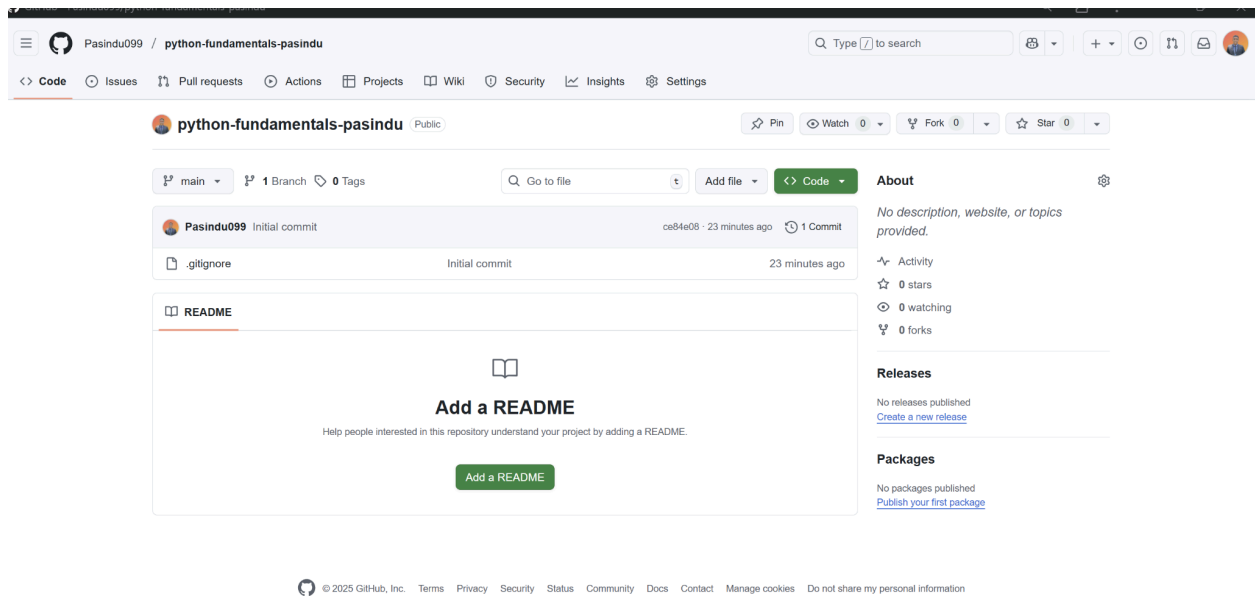
```
(Python Development Environment & Fundamentals) PS C:\Users\wpmpo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> python data_analyzer.py
2152443443904
Am I an adult?
You are a young adult.

Hobbies:
Hobby: Reading
Hobby: Trading
Hobby: Traveling
Hobby 1: Reading
Hobby 2: Trading
Hobby 3: Traveling

Using enumerate and range:
Hobby 1: Reading
Hobby 2: Trading
Hobby 3: Traveling
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
Hello I am, Pasindu!
(Python Development Environment & Fundamentals) PS C:\Users\wpmpo\OneDrive\Documents\DSSB - SEM 3\Python for data engineering\Assignments- Re do\Python Development Environment & Fundamentals> 
```

Repository (15pts):

- Public GitHub repository: `python-fundamentals-[yourname]`
- Proper .gitignore (no virtual environment files)
- Clean commit history



Repository link: <https://github.com/Pasindu099/python-fundamentals-pasindu.git>

Chatgpt support: <https://chatgpt.com/share/692250e0-1dd0-8005-aae3-9a7958091fa0>