

```
SQL Shell (psql) x + 
Server [localhost]: Database [postgres]: Port [5432]: Username [postgres]: Password for user postgres:

psql (17.4)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \l
                                         List of databases
   Name    | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
---+-----+-----+-----+-----+-----+-----+-----+-----+
postgres | postgres | UTF8 | libc | en-US | en-US | | |
template0 | postgres | UTF8 | libc | en-US | en-US | | |
template1 | postgres | UTF8 | libc | en-US | en-US | | |
(3 rows)

postgres=# create database student;
CREATE DATABASE
postgres=# \l
                                         List of databases
   Name    | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
---+-----+-----+-----+-----+-----+-----+-----+
postgres | postgres | UTF8 | libc | en-US | en-US | | |
student | postgres | UTF8 | libc | en-US | en-US | | |
template0 | postgres | UTF8 | libc | en-US | en-US | | |
=|c/postgres | +
```

```
SQL Shell (psql) +   
WARNING: Console code page (437) differs from Windows code page (1252)  
8-bit characters might not work correctly. See psql reference  
page "Notes for Windows users" for details.  
Type "help" for help.  
  
postgres=# \l  
                                         List of databases  
   Name   | Owner    | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges  
----+-----+-----+-----+-----+-----+-----+-----+-----+  
postgres | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |=c/postgres      +  
template0 | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |postgres=CTc/postgres  
template1 | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |=c/postgres      +  
          |          |         |             |         |       |       |           |postgres=CTc/postgres  
(3 rows)  
  
postgres=# create database student;  
CREATE DATABASE  
postgres=# \l  
                                         List of databases  
   Name   | Owner    | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges  
----+-----+-----+-----+-----+-----+-----+-----+-----+  
postgres | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |=c/postgres      +  
student  | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |postgres=CTc/postgres  
template0 | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |=c/postgres      +  
template1 | postgres | UTF8   | libc        | en-US   | en-US | en-US |           |postgres=CTc/postgres  
(4 rows)  
  
postgres=#
```

```

SQL Shell (psql) + v
template1 | postgres | UTF8 | libc | en-US | en-US | | | | postgres=CTc/postgres
template1 | postgres | UTF8 | libc | en-US | en-US | | | | =c/postgres +
template1 | postgres | UTF8 | libc | en-US | en-US | | | | postgres=CTc/postgres
(3 rows)

postgres=# create database student;
CREATE DATABASE
postgres=# \l
          List of databases
  Name   | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
-----+-----+-----+-----+-----+-----+-----+-----+-----+
postgres | postgres | UTF8 | libc | en-US | en-US | | | |
student  | postgres | UTF8 | libc | en-US | en-US | | | |
template0 | postgres | UTF8 | libc | en-US | en-US | | | |
template1 | postgres | UTF8 | libc | en-US | en-US | | | |
(4 rows)

postgres=# \c student;
You are now connected to database "student" as user "postgres".
student=# create table studdata(Name TEXT,Rollno int,Age int);
CREATE TABLE
student=# \d
          List of relations
 Schema | Name | Type | Owner
-----+-----+-----+-----+
public | studdata | table | postgres
(1 row)


```

```

West of Chord R.. Closed road Search 16:08 19-05-2025
SQL Shell (psql) + v
student=# \d
          List of relations
 Schema | Name | Type | Owner
-----+-----+-----+-----+
public | studdata | table | postgres
(1 row)

student=# insert into studdata(Name,Rollno,Age) Values('Vasanth',2,28);
INSERT 0 1
student=# insert into studdata(Name,Rollno,Age) Values('Kumar',4,30);
INSERT 0 1
student=# select * from studdata;
 name | rollno | age
-----+-----+-----+
Vasanth | 2 | 28
Kumar | 4 | 30
(2 rows)

student=# select * from studdata where age>28;
 name | rollno | age
-----+-----+-----+
Kumar | 4 | 30
(1 row)

student=# TRUNCATE table studdata;
TRUNCATE TABLE
student=# \d
          List of relations
 Schema | Name | Type | Owner
-----+-----+-----+-----+

```

```
SQL Shell (psql) x + v
Kumar |     4 | 30
(1 row)

student=# TRUNCATE table studdata;
TRUNCATE TABLE
student=# \d
      List of relations
 Schema |   Name   | Type  | Owner
-----+-----+-----+-----+
 public | studdata | table | postgres
(1 row)

student=# \d
      List of relations
 Schema |   Name   | Type  | Owner
-----+-----+-----+-----+
 public | studdata | table | postgres
(1 row)

student=# select * from studdata;
 name | rollno | age
-----+-----+-----+
(0 rows)

student=# drop table studdata;
DROP TABLE
student=# \d
Did not find any relations.
student=#

```

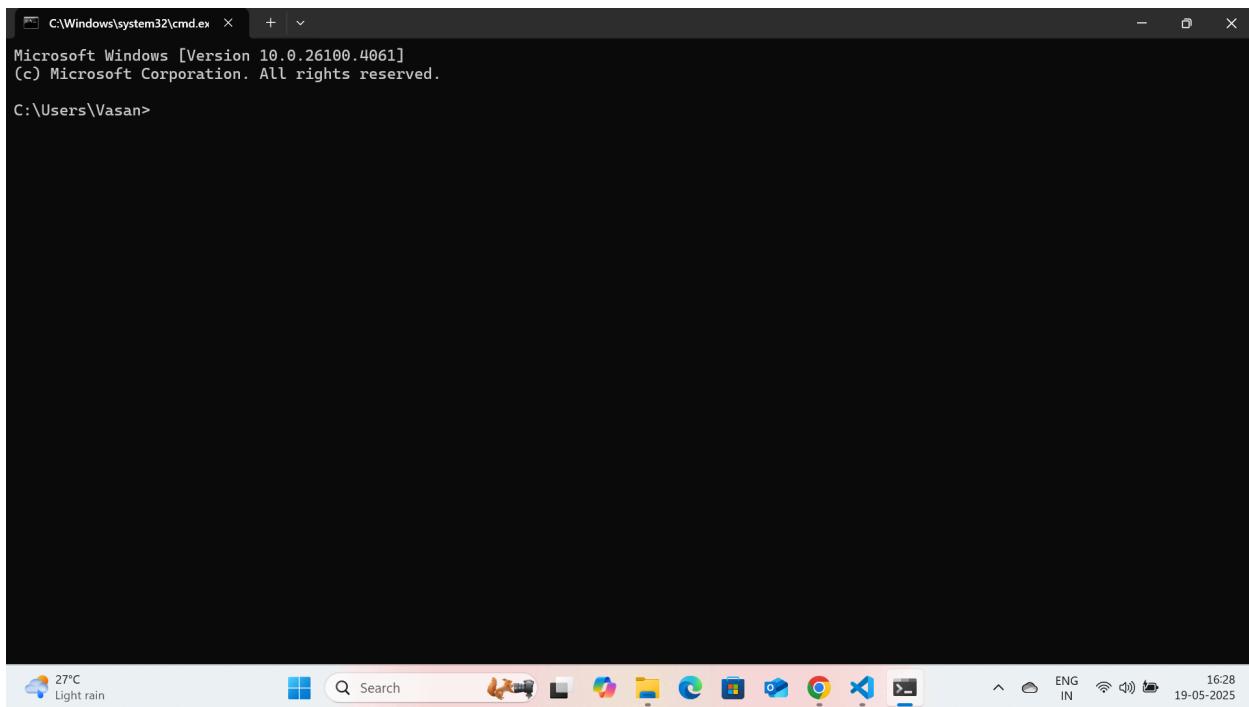
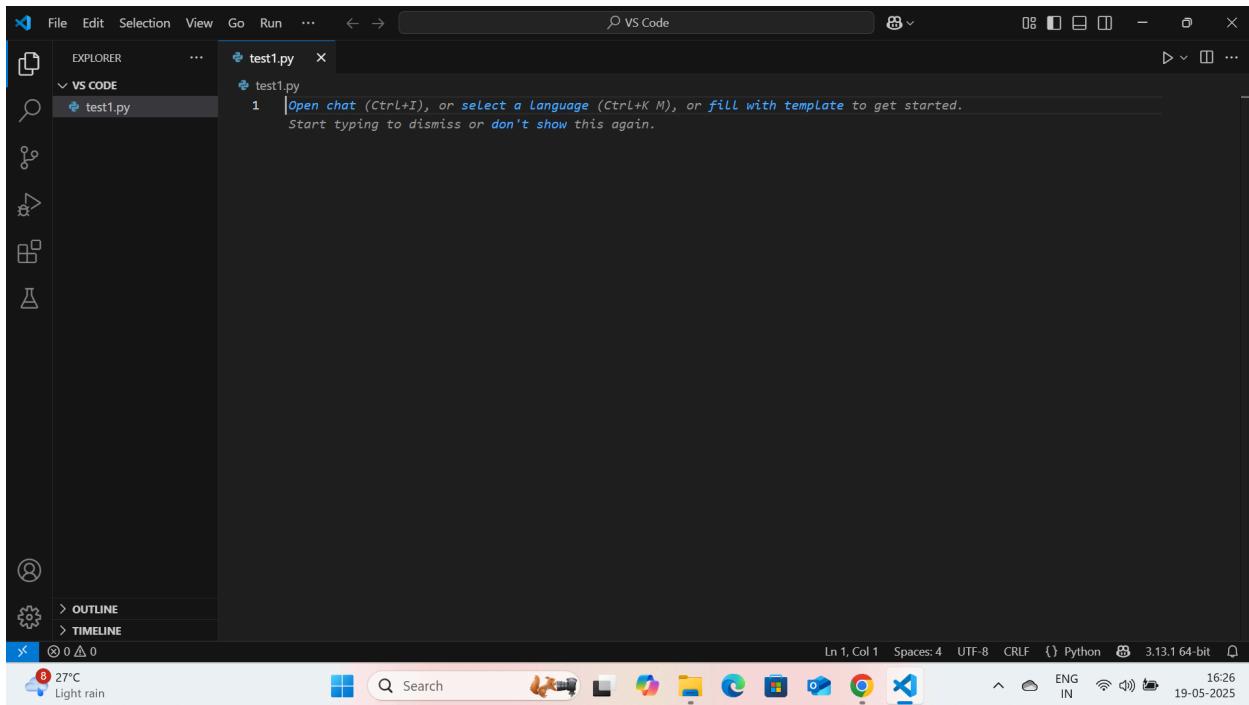
```
8 27°C Light rain Search ENG IN 16:13 19-05-2025
SQL Shell (psql) x + v
postgres=# \l
      List of databases
 Name | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
-----+-----+-----+-----+-----+-----+-----+-----+-----+
 postgres | postgres | UTF8 | libc | en-US | en-US | | |
 student | postgres | UTF8 | libc | en-US | en-US | | |
 template0 | postgres | UTF8 | libc | en-US | en-US | | |
 template1 | postgres | UTF8 | libc | en-US | en-US | | |
(4 rows)

postgres=# DROP database student;
DROP DATABASE
postgres=# \l
      List of databases
 Name | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
-----+-----+-----+-----+-----+-----+-----+-----+-----+
 postgres | postgres | UTF8 | libc | en-US | en-US | | |
 template0 | postgres | UTF8 | libc | en-US | en-US | | |
 template1 | postgres | UTF8 | libc | en-US | en-US | | |
(3 rows)

postgres=#

```

Visual code and environment



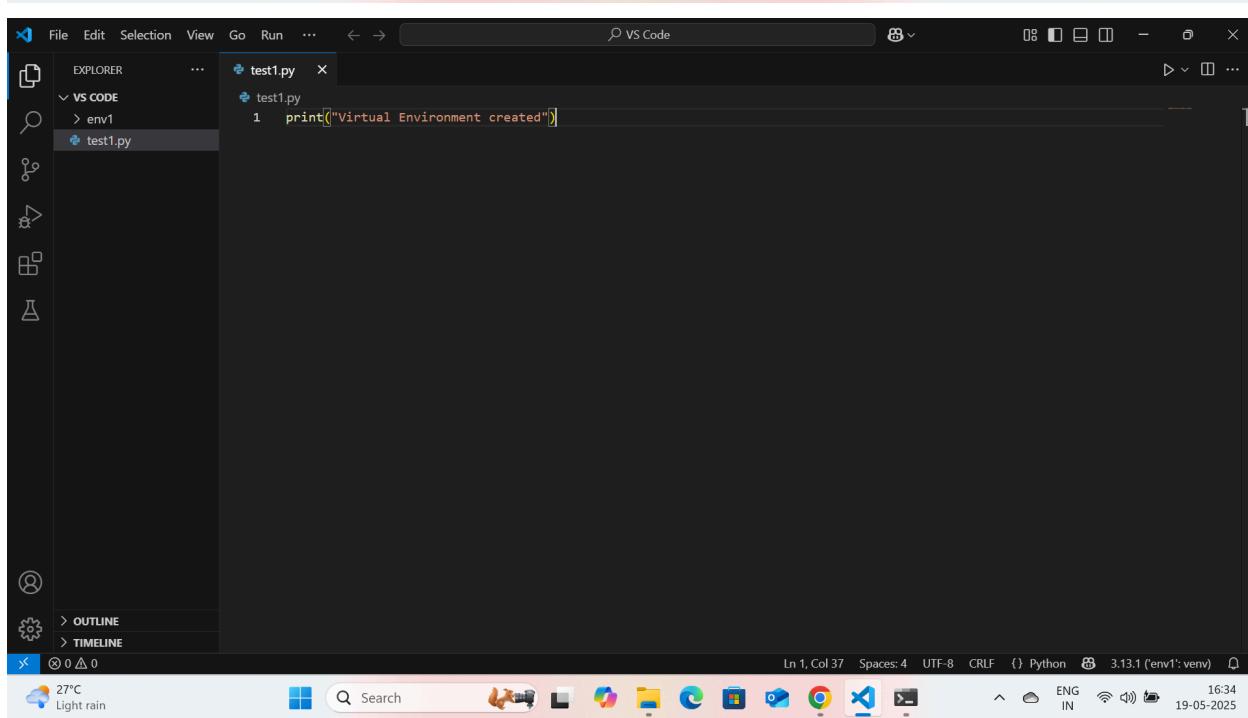
```
Command Prompt
Microsoft Windows [Version 10.0.26100.4061]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Vasan>cd Onedrive
C:\Users\Vasan\OneDrive>cd Desktop
C:\Users\Vasan\OneDrive\Desktop>cd "VS Code"

C:\Users\Vasan\OneDrive\Desktop\VS Code>pip install virtualenv
Requirement already satisfied: virtualenv in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (20.31.2)
Requirement already satisfied: distlib<1,>=0.3.7 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (from vi
rtualenv) (0.3.9)
Requirement already satisfied: filelock<4,>=3.12.2 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (from
virtualenv) (3.18.0)
Requirement already satisfied: platformdirs<5,>=3.9.1 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (fr
om virtualenv) (4.3.8)

C:\Users\Vasan\OneDrive\Desktop\VS Code>virtualenv env1
created virtual environment CPython3.13.1.final.0-64 in 23546ms
  creator CPython3Windows(dest=C:\Users\Vasan\OneDrive\Desktop\VS Code\env1, clear=False, no_vcs_ignore=False, global=False)
    seeder FromAppData(download=False, pip=bundle, via=copy, app_data_dir=C:\Users\Vasan\AppData\Local\pypa\virtualenv)
      added seed packages: pip==25.1.1
  activators BashActivator,BatchActivator,FishActivator,NushellActivator,PowerShellActivator,PythonActivator

C:\Users\Vasan\OneDrive\Desktop\VS Code>cd env1
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1>cd Scripts
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts>
```

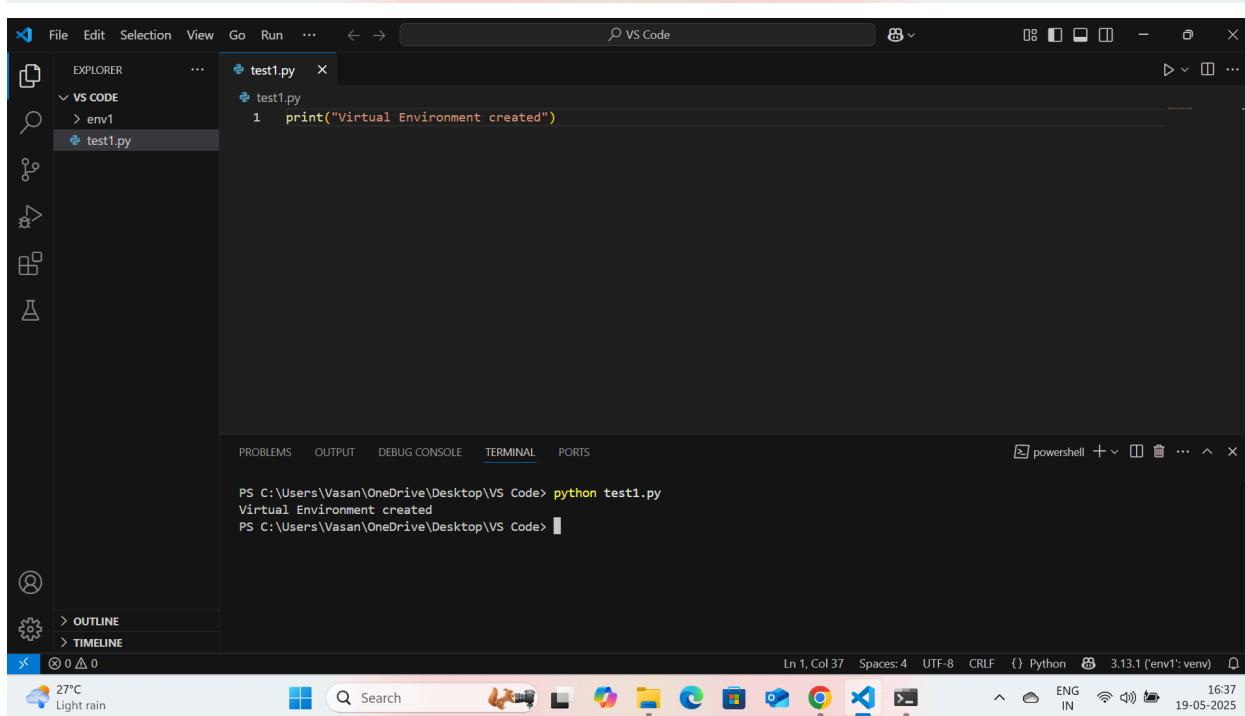


```
Command Prompt
C:\Users\Vasan\OneDrive\Desktop>cd "VS Code"
C:\Users\Vasan\OneDrive\Desktop\VS Code>pip install virtualenv
Requirement already satisfied: virtualenv in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (20.31.2)
Requirement already satisfied: distlib<1,>=0.3.7 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (from vi
rtualenv) (0.3.9)
Requirement already satisfied: filelock<4,>=3.12.2 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (from
virtualenv) (3.18.0)
Requirement already satisfied: platformdirs<5,>=3.9.1 in c:\users\vasan\appdata\local\programs\python\python313\lib\site-packages (fr
om virtualenv) (4.3.8)

C:\Users\Vasan\OneDrive\Desktop\VS Code>virtualenv env1
created virtual environment CPython3.13.1.final.0-64 in 23546ms
  creator CPython3Windows(dest=C:\Users\Vasan\OneDrive\Desktop\VS Code\env1, clear=False, no_vcs_ignore=False, global=False)
    seeder FromAppData(download=False, pip=bundle, via=copy, app_data_dir=C:\Users\Vasan\AppData\Local\pypa\virtualenv)
      added seed packages: pip==25.1.1
    activators BashActivator,BatchActivator,FishActivator,NushellActivator,PowerShellActivator,PythonActivator

C:\Users\Vasan\OneDrive\Desktop\VS Code>cd env1
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1>cd Scripts
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts>activate
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts>cd..
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1>cd..
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Virtual Environment created

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>deactivate
C:\Users\Vasan\OneDrive\Desktop\VS Code>
```



Psycopg2 and connecting to virtual environment

```
Command Prompt + ▾
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Virtual Environment created

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>deactivate
C:\Users\Vasan\OneDrive\Desktop\VS Code>cd env1
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1>cd Scripts
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts>activate
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts>cd..
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1>cd..

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>pip install --upgrade pip setuptools wheel
Requirement already satisfied: pip in c:\users\vasan\onedrive\desktop\vs code\env1\lib\site-packages (25.1.1)
Collecting setuptools
  Using cached setuptools-80.7.1-py3-none-any.whl.metadata (6.6 kB)
Collecting wheel
  Using cached wheel-0.45.1-py3-none-any.whl.metadata (2.3 kB)
Using cached setuptools-80.7.1-py3-none-any.whl (1.2 MB)
Using cached wheel-0.45.1-py3-none-any.whl (72 kB)
Installing collected packages: wheel, setuptools
Successfully installed setuptools-80.7.1 wheel-0.45.1

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>pip install psycopg2
Collecting psycopg2
  Using cached psycopg2-2.9.10-cp313-cp313-win_amd64.whl.metadata (4.8 kB)
Using cached psycopg2-2.9.10-cp313-cp313-win_amd64.whl (2.6 MB)
Installing collected packages: psycopg2
Successfully installed psycopg2-2.9.10

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>
```



```
SQL Shell (psql) + ▾
Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
Password for user postgres:

psql (17.4)
WARNING: Console code page (437) differs from Windows code page (1252)
          8-bit characters might not work correctly. See psql reference
          page "Notes for Windows users" for details.
Type "help" for help.

postgres=# |
```



VS Code interface showing a Python script named `test1.py` in the Explorer panel. The script contains:

```
1 import psycopg2
2 connect=psycopg2.connect(dbname='postgres',user='postgres',password='1234',host='localhost',port='5432')
3 print("Virtual Environment connected successfully")
```

The terminal tab shows the output of running the script:

```
PS C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py
Virtual Environment created
PS C:\Users\Vasan\OneDrive\Desktop\VS Code> []
```

Bottom status bar: Ln 3, Col 51 Spaces: 4 UTF-8 CRLF {} Python 3.13.1 ('env1': venv) 17:17 19-05-2025

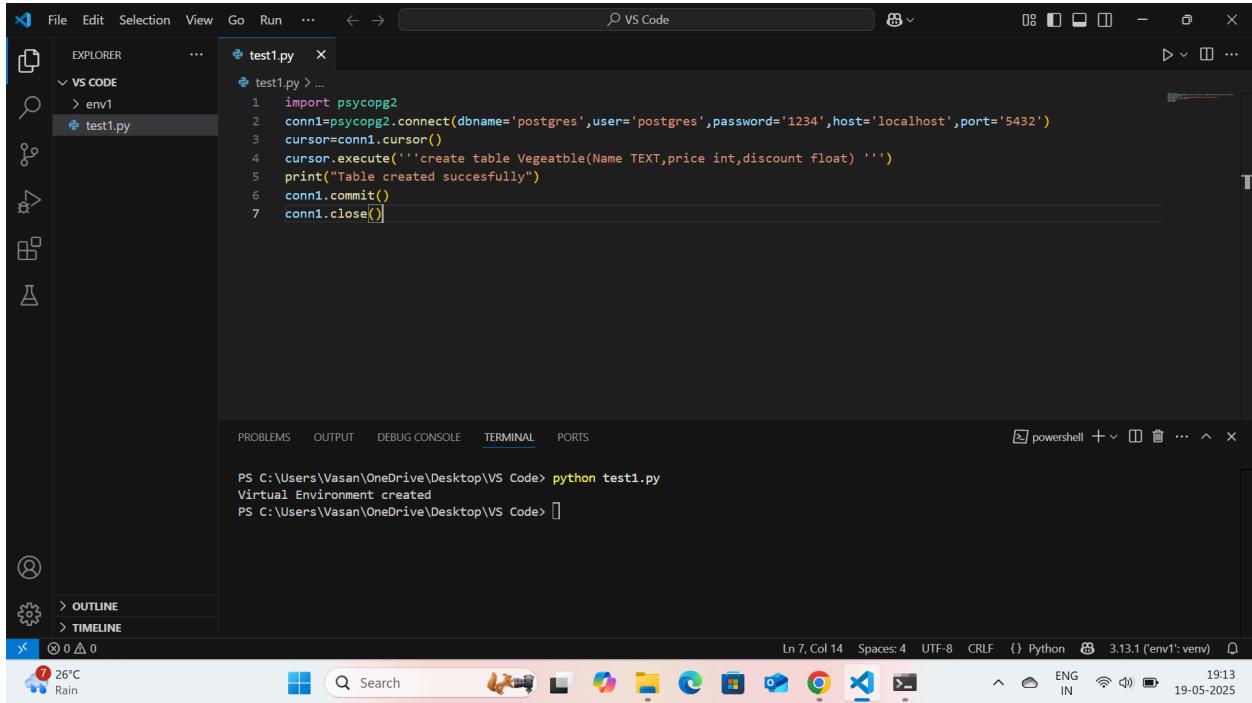
```
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code> deactivate
C:\Users\Vasan\OneDrive\Desktop\VS Code> cd env1
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1> cd Scripts
C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts> activate
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1\Scripts> cd..
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code\env1> cd..
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code> pip install --upgrade pip setuptools wheel
Requirement already satisfied: pip in c:\users\vasan\onedrive\desktop\vs code\env1\lib\site-packages (25.1.1)
Collecting setuptools
  Using cached setuptools-80.7.1-py3-none-any.whl.metadata (6.6 kB)
Collecting wheel
  Using cached wheel-0.45.1-py3-none-any.whl.metadata (2.3 kB)
Using cached setuptools-80.7.1-py3-none-any.whl (1.2 MB)
Using cached wheel-0.45.1-py3-none-any.whl (72 kB)
Installing collected packages: wheel, setuptools
Successfully installed setuptools-80.7.1 wheel-0.45.1

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code> pip install psycopg2
Collecting psycopg2
  Using cached psycopg2-2.9.10-cp313-cp313-win_amd64.whl.metadata (4.8 kB)
Using cached psycopg2-2.9.10-cp313-cp313-win_amd64.whl (2.6 MB)
Installing collected packages: psycopg2
Successfully installed psycopg2-2.9.10

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py
Virtual Environment connected successfully
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>
```

Bottom status bar: 26°C Rain 17:18 19-05-2025

After connected database creating table,insert and extract using Python



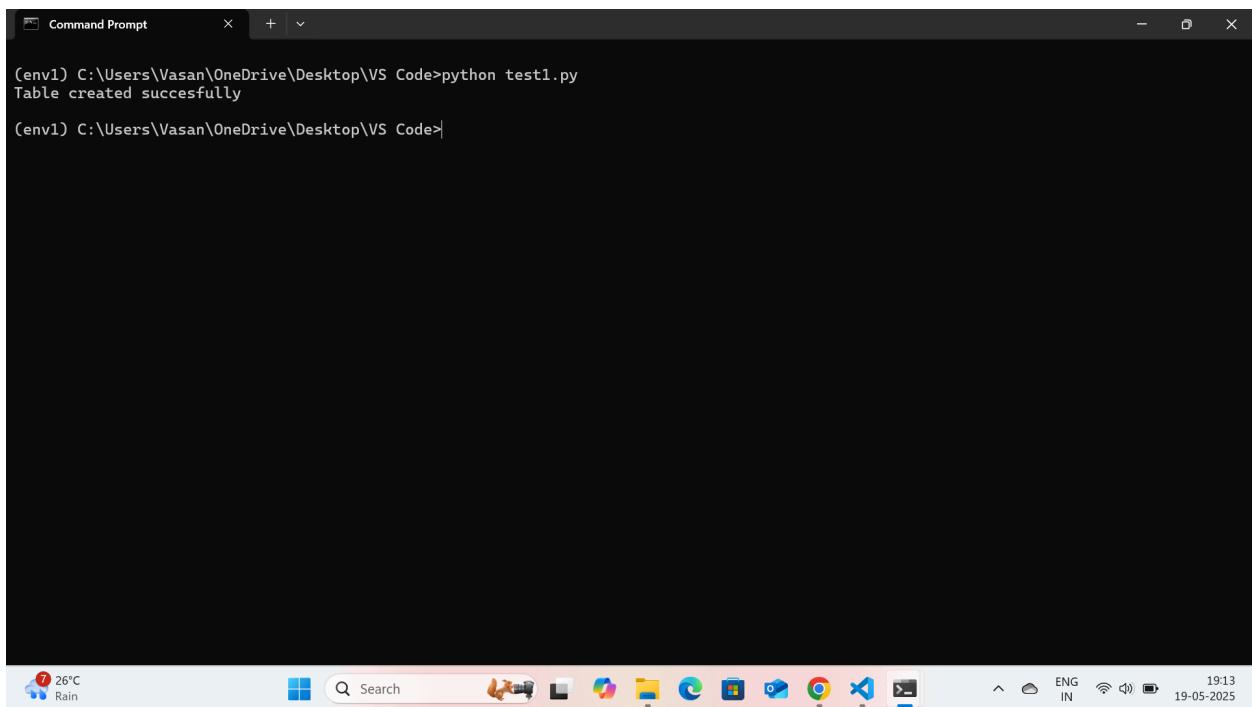
The screenshot shows the Visual Studio Code interface. The left sidebar has a tree view with 'VS CODE' expanded, showing 'env1' and 'test1.py'. The main editor area contains the following Python code:

```
1 import psycopg2
2 conn1=psycopg2.connect(dbname='postgres',user='postgres',password='1234',host='localhost',port='5432')
3 cursor=conn1.cursor()
4 cursor.execute('''create table Vegeatable(Name TEXT,price int,discount float) ''')
5 print("Table created successfully")
6 conn1.commit()
7 conn1.close()
```

The bottom status bar shows the terminal output:

```
PS C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py
Virtual Environment created
PS C:\Users\Vasan\OneDrive\Desktop\VS Code>
```

The taskbar at the bottom includes icons for various Windows applications like File Explorer, Task View, and Start.



The screenshot shows a Command Prompt window titled 'Command Prompt'. The command 'python test1.py' was run, and the output was:

```
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Table created successfully
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>
```

The taskbar at the bottom includes icons for various Windows applications like File Explorer, Task View, and Start.

SQL Shell (psql)

```
Server [localhost]:  
Database [postgres]:  
Port [5432]:  
Username [postgres]:  
Password for user postgres:  
  
psql (17.4)  
WARNING: Console code page (437) differs from Windows code page (1252)  
8-bit characters might not work correctly. See psql reference  
page "Notes for Windows users" for details.  
Type "help" for help.  
  
postgres=# \d  
      List of relations  
 Schema |   Name    | Type  | Owner  
-----+-----+-----+-----  
 public | vegetable | table | postgres  
(1 row)  
  
postgres=# |
```

26°C Rain Search ENG IN 19:14 19-05-2025

Table created using python

Inserting data using python

File Edit Selection View Go Run ...

VS Code

test1.py

```
1 import psycopg2  
2 def vegetable():  
3     conn1=psycopg2.connect(dbname='postgres',user='postgres',password='1234',host='localhost',port='5432')  
4     cursor=conn1.cursor()  
5     cursor.execute(''':create table Vegetable(Name TEXT,price int,discount float)'''')  
6     print("Table created successfully")  
7     conn1.commit()  
8     conn1.close()  
9  
10 def vegdata():  
11     conn1=psycopg2.connect(dbname='postgres',user='postgres',password='1234',host='localhost',port='5432')  
12     cursor=conn1.cursor()  
13     cursor.execute(''':insert into Vegetable(Name,price,discount) Values('Carrot',60,2)'''')  
14     print("Data added successfully")  
15     conn1.commit()  
16     conn1.close()  
17  
18     vegetable()  
19     vegdata()
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py
Virtual Environment created
PS C:\Users\Vasan\OneDrive\Desktop\VS Code>

powershell +

26°C Rain Search ENG IN 19:25 19-05-2025

```
Command Prompt + - X

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Table created successfully

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
  File "C:\Users\Vasan\OneDrive\Desktop\VS Code\test1.py", line 2
    def
      ^
SyntaxError: invalid syntax

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Table created successfully
Data added successfully

(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>
```

```
SQL Shell (psql) + - X

Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
Password for user postgres:

psql (17.4)
WARNING: Console code page (437) differs from Windows code page (1252)
          8-bit characters might not work correctly. See psql reference
          page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \d
           List of relations
 Schema |   Name    | Type  | Owner
-----+-----+-----+
 public | vegetable | table | postgres
(1 row)

postgres=# select * from Vegetable;
     name  | price | discount
-----+-----+-----+
 Carrot |    60 |        2
(1 row)

postgres=#
```

Extract the data from the database:

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows a folder named "VS CODE" containing "env1" and "test1.py".
- Code Editor:** Displays the content of "test1.py". The code uses psycopg2 to connect to a PostgreSQL database named "postgres" on "localhost" with user "postgres", password "1234", and port "5432". It contains two functions: "vegdata()" which inserts a row for "Carrot" with price 60 and discount 2, and "vegdataextract()" which selects all data from the "Vegetable" table.
- Terminal:** Shows the command "PS C:\Users\Vasan\OneDrive\Desktop\VS Code>".
- Status Bar:** Shows the file path "C:\Users\Vasan\OneDrive\Desktop\VS Code\test1.py", line 25, column 1, and other system information like weather (26°C Rain) and date/time (19-05-2025).

The screenshot shows the VS Code interface after running the script:

- Terminal:** Shows the command "PS C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py" followed by the output "('Carrot', 60, 2.0)".
- Status Bar:** Shows the file path "C:\Users\Vasan\OneDrive\Desktop\VS Code\test1.py", line 25, column 1, and other system information like weather (26°C Rain) and date/time (19-05-2025).

Adding the input from the user:

The screenshot shows the Visual Studio Code interface. The left sidebar has icons for Explorer, Search, Problems, Outline, and Timeline. The main area displays a Python file named `test1.py` with the following code:

```
28  ...
29  def vegdatainsert():
30      conn=psycopg2.connect(dbname='postgres',user='postgres',password='1234',host='localhost',port='5432')
31      cursor=conn.cursor()
32      name=input("Enter the vegetable name")
33      price=input("Enter the per kg price")
34      Discount=input("Enter the discount in Rs")
35      query="""insert to vegetable(Name,price,discount) values(%s,%s,%s)"""
36      cursor.execute(query,(name,price,Discount))
37      print("Data has updated sucessfully")
38      conn.commit()
39      conn.close()
40
41  vegdatainsert()
```

The bottom right corner of the code editor shows the status bar with "Ln 41, Col 16". Below the code editor is the terminal window:

```
PROBLEMS 15 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Vasan\OneDrive\Desktop\VS Code> python test1.py
('Carrot', 60, 2.0)
PS C:\Users\Vasan\OneDrive\Desktop\VS Code> []
```

The bottom of the screen shows the taskbar with various icons and system status.

The screenshot shows a Command Prompt window titled "Command Prompt". The user runs the command `python test1.py`. The output is:

```
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>python test1.py
Enter the vegetable nameBeans
Enter the per kg price40
Enter the discount in Rs4
Data has updated sucessfully
(env1) C:\Users\Vasan\OneDrive\Desktop\VS Code>
```

The bottom of the screen shows the taskbar with various icons and system status.

```
SQL Shell (psql) + X
Username [postgres]:
Password for user postgres:

psql (17.4)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \d
           List of relations
 Schema |   Name    | Type  | Owner
-----+-----+-----+
 public | vegetable | table | postgres
(1 row)

postgres=# select * from Vegetable;
      name   | price | discount
-----+-----+-----+
 Carrot |    60 |        2
(1 row)

postgres=# select * from Vegetable;
      name   | price | discount
-----+-----+-----+
 Carrot |    60 |        2
 Beans  |    40 |        4
(2 rows)

postgres=#

```

