1. Variables

```
pi = 22 / 7
print("Value of pi:", pi)
print("Data type of pi:", type(pi))

principal = 1000
rate = 5
time = 3

simple_interest = (principal * rate * time) / 100
print("Simple Interest:", simple_interest)
```

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\AppData\Local\Programs\Python\Python312\task1.py
Value of pi: 3.142857142857143
Data type of pi: <class 'float'>
Simple Interest: 150.0
>>>
```

```
for = 4
SyntaxError: invalid syntax
The error occurs because for is a reserved keyword in Python used for loops, so it cannot be used as a variable name.
```

```
principal = 1000  # Principal amount
rate_of_interest = 5  # Rate of interest
time = 3  # Time in years

simple_interest = (principal * rate_of_interest * time) / 100

print(simple_interest)
```

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Lenovo\AppData\Local\Programs\Python\Python312\task1.py
Value of pi: 3.142857142857143
Data type of pi: <class 'float'>
Simple Interest: 150.0
>>>
===== RESTART: C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/intern 3.py =====
150.0
```

2. Numbers

odd.cpp 2 ● intern ×

C: > Users > Lenovo > AppData > Local > Programs > Microsoft VS Code > intern > ...

```
1  def format_value(number, format_spec):
2      return format(number, format_spec)
3
4  result = format_value(145, 'o')
5  print(result)
6
```

OUTPUT DEBUG CONSOLE TERMINAL PORTS Python

```
PS C:\Users\Lenovo> & C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/Lenovo/AppData/Local/Programs/Microsoft VS Code/intern"
221
PS C:\Users\Lenovo>
```

odd.cpp 2 ● intern ×

C: > Users > Lenovo > AppData > Local > Programs > Microsoft VS Code > intern > ...

```
2
3  radius = 84
4  pi = 3.14
5
6
7  area_of_pond = pi * (radius ** 2)
8
```

OUTPUT DEBUG CONSOLE TERMINAL PORTS Python

```
PS C:\Users\Lenovo> & C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/Lenovo/AppData/Local/Programs/Microsoft VS Code/intern"
31018
PS C:\Users\Lenovo>
```

odd.cpp 2 ● intern ×

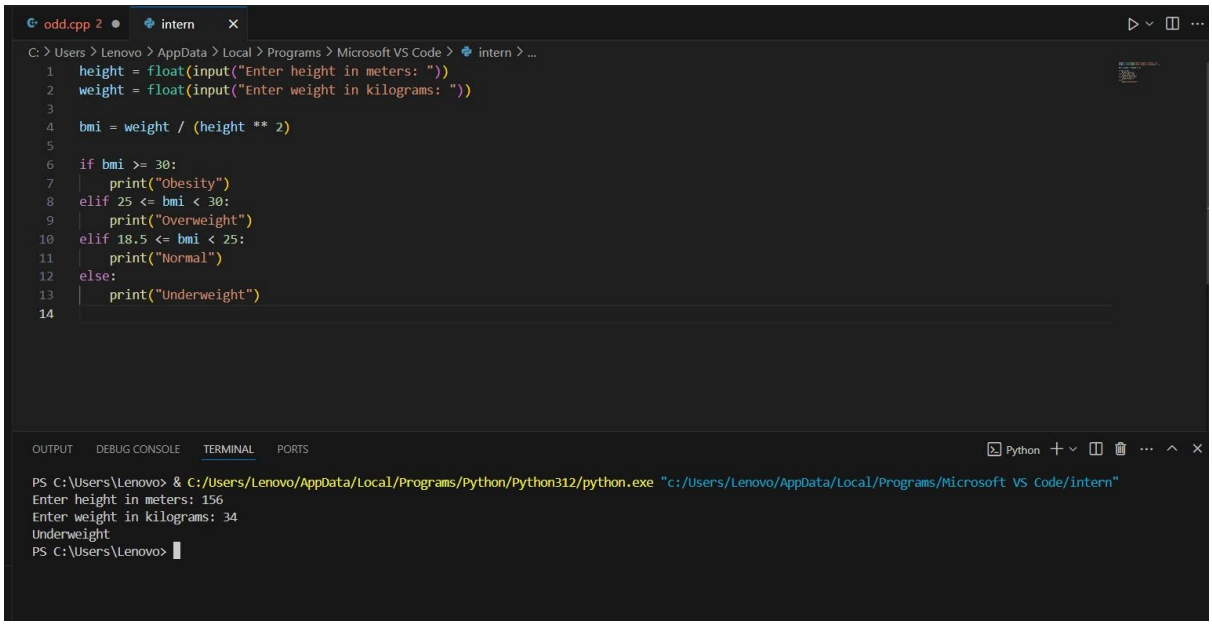
C: > Users > Lenovo > AppData > Local > Programs > Microsoft VS Code > intern > ...

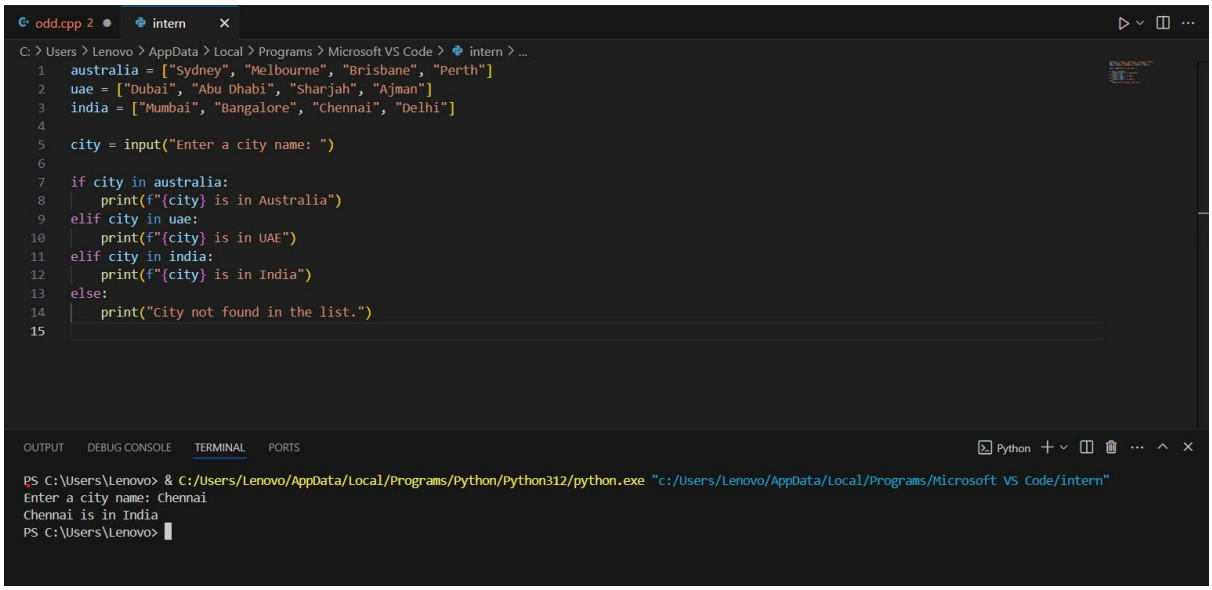
```
1  distance = 490
2  time_in_minutes = 7
3  time_in_seconds = time_in_minutes * 60
4
5  speed = distance / time_in_seconds
6
7  print(int(speed))
```

OUTPUT DEBUG CONSOLE TERMINAL PORTS Python

```
PS C:\Users\Lenovo> & C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/Lenovo/AppData/Local/Programs/Microsoft VS Code/intern"
1
PS C:\Users\Lenovo>
```

3. If Condition





```python
australia = ["Sydney", "Melbourne", "Brisbane", "Perth"]
uae = ["Dubai", "Abu Dhabi", "Sharjah", "Ajman"]
india = ["Mumbai", "Bangalore", "Chennai", "Delhi"]

city1 = input("Enter the first city: ")
city2 = input("Enter the second city: ")

if city1 in australia and city2 in australia:
    print("Both cities are in Australia")
elif city1 in uae and city2 in uae:
    print("Both cities are in UAE")
elif city1 in india and city2 in india:
    print("Both cities are in India")
else:
    print("They don't belong to the same country")
```

```
PS C:\Users\Lenovo> & C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/Lenovo/AppData/Local/Programs/Microsoft VS Code/intern"
Enter the first city: Ajman
Enter the second city: Dubai
Both cities are in UAE
PS C:\Users\Lenovo>
```

4. For Loop:

```python
import random

# Initialize counters
count_6 = 0
count_1 = 0
count_two_6s_in_row = 0
previous_roll = 0
num_rolls = 20  # Number of rolls (you can increase this for more rolls)

# Simulate rolling a die 20 times
for i in range(num_rolls):
    roll = random.randint(1, 6)  # Simulate a die roll (1-6)
    print(f"Roll {i+1}: {roll}")

    # Count how many times 6 is rolled
    if roll == 6:
        count_6 += 1

    # Count how many times 1 is rolled
    if roll == 1:
        count_1 += 1

    # Check for two consecutive 6s
    if roll == 6 and previous_roll == 6:
        count_two_6s_in_row += 1

    # Update the previous roll
    previous_roll = roll

# Print the statistics
print(f"\nStatistics after {num_rolls} rolls:")
print(f"Number of times you rolled a 6: {count_6}")
print(f"Number of times you rolled a 1: {count_1}")
print(f"Number of times you rolled two 6s in a row: {count_two_6s_in_row}")
```

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/intern.py ==
Roll 1: 4
Roll 2: 5
Roll 3: 6
Roll 4: 1
Roll 5: 2
Roll 6: 6
Roll 7: 3
Roll 8: 5
Roll 9: 3
Roll 10: 4
Roll 11: 1
Roll 12: 2
Roll 13: 4
Roll 14: 2
Roll 15: 1
Roll 16: 3
Roll 17: 5
Roll 18: 4
Roll 19: 4
Roll 20: 6

Statistics after 20 rolls:
Number of times you rolled a 6: 3
Number of times you rolled a 1: 3
Number of times you rolled two 6s in a row: 0
>>>
```

```python
total_jumping_jacks = 100
set_size = 10
completed_jumping_jacks = 0


while completed_jumping_jacks < total_jumping_jacks:
    print(f"\nPerform {set_size} jumping jacks.")
    completed_jumping_jacks += set_size
    tired = input("Are you tired? (yes/y or no/n): ").lower()

    if tired == "yes" or tired == "y":

        skip = input("Do you want to skip the remaining sets? (yes/y or no/n): ").lower()
        if skip == "yes" or skip == "y":
            break
        else:
            print(f"{total_jumping_jacks - completed_jumping_jacks} jumping jacks remaining."
    else:

        print(f"{total_jumping_jacks - completed_jumping_jacks} jumping jacks remaining.")

if completed_jumping_jacks >= total_jumping_jacks:
    print("Congratulations! You completed the workout.")
else:
    print(f"You completed a total of {completed_jumping_jacks} jumping jacks.")
```

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/intern1.py =

Perform 10 jumping jacks.
Are you tired? (yes/y or no/n): yes
Do you want to skip the remaining sets? (yes/y or no/n): yes
You completed a total of 10 jumping jacks.
>>>
```

5. Dictionary

C: > Users > Lenovo > AppData > Local > Programs > Microsoft VS Code > intern > ...

```python
friends = ['Alice', 'Bob', 'Catherine', 'David', 'Eleanor']
name_length_tuples = [(friend, len(friend)) for friend in friends]
print(name_length_tuples)
```

OUTPUT DEBUG CONSOLE TERMINAL PORTS

Python

```
PS C:\Users\Lenovo> & C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/Lenovo/AppData/Local/Programs/Microsoft VS Code/intern"
[('Alice', 5), ('Bob', 3), ('Catherine', 9), ('David', 5), ('Eleanor', 7)]
PS C:\Users\Lenovo>
```

```python
your_expenses = {
    "Hotel": 1200,
    "Food": 800,
    "Transportation": 500,
    "Attractions": 300,
    "Miscellaneous": 200
}

partner_expenses = {
    "Hotel": 1000,
    "Food": 900,
    "Transportation": 600,
    "Attractions": 400,
    "Miscellaneous": 150
}
your_total = sum(your_expenses.values())
partner_total = sum(partner_expenses.values())

print(f"Your total expenses: ${your_total}")
print(f"Your partner's total expenses: ${partner_total}")

if your_total > partner_total:
    print("You spent more money overall.")
elif partner_total > your_total:
    print("Your partner spent more money overall.")
else:
    print("You and your partner spent the same amount.")
max_diff_category = None
max_diff_amount = 0

for category in your_expenses:
    difference = abs(your_expenses[category] - partner_expenses[category])
    if difference > max_diff_amount:
        max_diff_amount = difference
        max_diff_category = category
print(f"The largest difference in spending is in the '{max_diff_category}' category with a d
```

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Lenovo/AppData/Local/Programs/Python/Python312/intern2.py
Your total expenses: $3000
Your partner's total expenses: $3050
Your partner spent more money overall.
The largest difference in spending is in the 'Hotel' category with a difference of $200.
>>>
```