

Topic	Output
<p><b>1. Data Types</b></p> <p><i>The code defines and prints an integer, float, string, and boolean along with their data types.</i></p>	<pre> C:\&gt; Users &gt; 202312728 &gt; Data Types.py &gt; ... 1 integer_var = 10 # integer 2 float_var = 10.3 # float 3 string_var = "aoibhe" # string 4 bool_var = True # boolean 5 6 print("Integer: ", integer_var, "Type:", type(integer_var)) 7 print("Float: ", float_var, "Type:", type(float_var)) 8 print("String: ", string_var, "Type:", type(string_var)) 9 print("Boolean: ", bool_var, "Type:", type(bool_var)) 10 </pre> <p>PROBLEMS OUTPUT DEBUG CONSOLE <b>TERMINAL</b> PORTS Python</p> <p>trinsics)</p> <p>-----</p> <p>PS C:\Users\202312728&gt; &amp; "C:/Program Files/Python312/python.exe" "c:/Users/202312728/Data Types.py"</p> <p>Integer: 10 Type: &lt;class 'int'&gt;  Float: 10.3 Type: &lt;class 'float'&gt;  String: aoibhe Type: &lt;class 'str'&gt;  Boolean: True Type: &lt;class 'bool'&gt;  PS C:\Users\202312728&gt;</p>
<p><b>2. Operators and Expressions</b></p> <p><i>The code takes two float inputs and performs basic arithmetic operations. It prints the sum, difference, product, and quotient, handling division by zero. A shorthand conditional ensures "Undefined" is shown if division by zero occurs.</i></p>	<pre> C:\&gt; Users &gt; 202312728 &gt; Operators and Expressions.py &gt; ... 1 a = float(input("Enter first number: ")) 2 b = float(input("Enter first number: ")) 3 4 print("Addition: ", a + b) 5 print("Subtraction: ", a - b) 6 print("Multiplication: ", a * b) 7 print("Division: ", a / b if b != 0 else "Undefined") </pre> <p>PROBLEMS OUTPUT DEBUG CONSOLE <b>TERMINAL</b> PORTS Python</p> <p>Parameter name: left  Actual value was -2.  at System.Console.SetCursorPosition(Int32 left, Int32 top)  at Microsoft.PowerShell.Internal.VirtualTerminal.set_CursorLeft(Int32 left, Int32 top)  at Microsoft.PowerShell.PSConsoleReadLine.ReallyRender(RenderData renderData, IConsoleHost host, ConsoleColor defaultColor)  at Microsoft.PowerShell.PSConsoleReadLine.ForceRender()  at Microsoft.PowerShell.PSConsoleReadLine.Insert(Char c)  at Microsoft.PowerShell.PSConsoleReadLine.SelfInsert(Nullable`1 key, Object arg)  at Microsoft.PowerShell.PSConsoleReadLine.ProcessOneKey(ConsoleKeyInfo key, Dictionary`2 dispatchTable, Boolean ignoreIfNoAction, Object arg)  at Microsoft.PowerShell.PSConsoleReadLine.InputLoop()  at Microsoft.PowerShell.PSConsoleReadLine.ReadLine(Runspace runspace, PSReadLine engineIntrinsics)</p> <p>-----</p> <p>PS C:\Users\202312728&gt; &amp; "C:/Program Files/Python312/python.exe" "c:/Users/202312728/Operators and Expressions.py"</p> <p>Enter first number: 20  Enter first number: 10  Addition: 30.0  Subtraction: 10.0  Multiplication: 200.0  Division: 2.0  PS C:\Users\202312728&gt;</p>

### 3. String

Takes a user-input string and reverses it using slicing (`[::-1]`). This method starts from the end (-1 step) and moves backward to the beginning.

```
C: > Users > 202312728 > String.py > ...
1 text = input("Enter a string: ")
2
3 print("Reversed string: ", text[::-1])
```

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the console's buffer size in that dimension.  
Parameter name: left  
Actual value was -2.  
at System.Console.SetCursorPosition(Int32 left  
at Microsoft.PowerShell.Internal.VirtualTerminal  
at Microsoft.PowerShell.PSConsoleReadLine.Reall  
g defaultColor)  
at Microsoft.PowerShell.PSConsoleReadLine.Forc  
at Microsoft.PowerShell.PSConsoleReadLine.Insert  
at Microsoft.PowerShell.PSConsoleReadLine.Self  
at Microsoft.PowerShell.PSConsoleReadLine.Process  
ary`2 dispatchTable, Boolean ignoreIfNoAction, Obj  
at Microsoft.PowerShell.PSConsoleReadLine.Input  
at Microsoft.PowerShell.PSConsoleReadLine.Read  
ics engineIntrinsics)

-----  
PS C:\Users\202312728> & "C:/Program Files/Python  
ring.py  
Enter a string: aoibhe  
Reversed string: ehbioa  
PS C:\Users\202312728> |

### 4. File Handling: Write and Read Names

The code writes five names to **"names.txt"** and then reads and prints them. It opens the file in **write mode ("w")**, writes names line by line, then reopens it in **read mode ("r")** to display the contents. The original code had syntax errors, including an invalid file mode ("**p**") and incorrect write syntax.

```
C: > Users > 202312728 > File Handling.py > ...
1 with open("names.txt", "w") as file:
2     file.write["Aoibhe\nEyva\nMasha\nLian\nAlat\n"]
3
4 with open("names.txt", "r") as file:
5     print("Names from file: ")
6     print(file.read())
```

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Parameter name: left  
Actual value was -2.  
at System.Console.SetCursorPosition(Int32 left, Int32 top)  
at Microsoft.PowerShell.Internal.VirtualTerminal.set\_CursorLeft  
)  
at Microsoft.PowerShell.PSConsoleReadLine.ReallyRender(RenderD  
a, String defaultColor)  
at Microsoft.PowerShell.PSConsoleReadLine.ForceRender()  
at Microsoft.PowerShell.PSConsoleReadLine.Insert(Char c)  
at Microsoft.PowerShell.PSConsoleReadLine.SelfInsert(Nullable`  
arg)  
at Microsoft.PowerShell.PSConsoleReadLine.ProcessOneKey(Console  
Dictionary`2 dispatchTable, Boolean ignoreIfNoAction, Object arg  
at Microsoft.PowerShell.PSConsoleReadLine.InputLoop()  
at Microsoft.PowerShell.PSConsoleReadLine.ReadLine(Runspace ru  
eIntrinsics engineIntrinsics)

-----  
PS C:\Users\202312728> & "C:/Program Files/Python312/python.exe"  
312728/File Handling.py"  
Names from file:  
Aoibhe  
Eyva  
Masha  
Lian  
Alat

## 5. List

*Calculates the sum and average of a list of numbers. It uses `sum()` to get the total and divides it by `len(numbers)` for the average then prints the result.*

```
C: > Users > 202312728 > List.py > ...
1  numbers = [10, 20, 30 ,40 ,50]
2
3  total = sum(numbers)
4  average = total / len(numbers)
5
6  print("Sum:", total)
7  print("Average:", average)
```

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```
PS C:\Users\202312728>
& "C:/Program Files/Python312/python.exe"
Sum: 150
Average: 30.0
PS C:\Users\202312728>
```

## 6. Tuple

*Defines a tuple named `my_tuple` containing five numbers. Since tuples use zero-based indexing, the second element is at index 1, and the fourth element is at index 3. The `print` statements access and display these elements.*

```
Tuple.py X
C: > Users > 202312728 > Tuple.py > ...
1  my_tuple = (1, 2, 3, 4, 5)
2
3  print("Second element: ", my_tuple[1])
4  print("Fourth element: ", my_tuple[3])
```


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```
PS C:\Users\202312728>
& "C:/Program Files/Python312/python.exe" c:/Users
Second element: 2
Fourth element: 4
PS C:\Users\202312728> |
```

## 7. Sets

The code defines two sets and performs set operations. It prints the union, intersection, and differences between set1 and set2.

```
C: > Users > 202312728 > Sets.py > ...
1  set1 = {1, 2, 3, 4, 5}
2  set2 = {4, 5, 6, 7, 8}
3
4  print("Union:", set1 | set2)
5  print("Intersection:", set1 & set2)
6  print("Difference: (set1 - set2)", set1 - set2)
7  print("Difference: (set2 - set1)", set2 - set1)]
```

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```
PS C:\Users\202312728>
& "C:/Program Files/Python312/python.exe" c:/Users/202312728/
Union: {1, 2, 3, 4, 5, 6, 7, 8}
Intersection: {4, 5}
Difference: (set1 - set2) {1, 2, 3}
Difference: (set2 - set1) {8, 6, 7}
PS C:\Users\202312728>
```

## 8. Dictionaries

*Defines a dictionary called person that stores information about an individual, including their name, age, and city. The for loop iterates through the dictionary using the .items() method, which returns both the keys and values. Inside the loop, each key-value pair is printed in the format Key: Value*

```
C:\> Users > 202312728 > Dictionary.py > ...
```

```
1 person = {}  
2     "Name": "Aoibhe",  
3     "Age": 21,  
4     "City": "Los Santos"  
5 }  
6  
7 for key, value in person.items():  
8     print(key + ":", value)
```

```
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```

Exception:  
System.ArgumentOutOfRangeException: The value must  
be greater than or equal to zero and less than the console's buffer size.  
Parameter name: left  
Actual value was -2.  
at System.Console.SetCursorPosition(Int32 left, Int32 top)  
at Microsoft.PowerShell.Internal.VirtualTerminal.set\_CursorPosition()  
at Microsoft.PowerShell.PSConsoleReadLine.ReadLine(PowerShell ps, Boolean isInteractive, String defaultColor)  
at Microsoft.PowerShell.PSConsoleReadLine.FinishCommand()  
at Microsoft.PowerShell.PSConsoleReadLine.InputLoop() at Microsoft.PowerShell.PSConsoleReadLine.ReadLine(PowerShell ps, Boolean isInteractive, String defaultColor)  
at Microsoft.PowerShell.PSConsoleReadLine.ReadLine(PowerShell ps, Boolean isInteractive, String defaultColor)  
-----  
PS C:\Users\202312728> & "C:/Program Files/Python39/python.exe" "C:/Users/202312728/Desktop/Dictionaries.py"  
Name: Aoibhe  
Age: 21  
City: Los Santos  
PS C:\Users\202312728>