

BRIDGE COURSE – DAY 1

SECTION 1: DATA

1. Input and output practice

Problem statement: write a program that takes your name and age as input and prints a greeting like: “Hello John, you are 20 years old.”

Algorithm:

- Take input (name and age) from the user
- Check for error like age can't be in negative or zero
- Print the output

Code:

```
data1.py > ...
1  name= input("enter your name: ")
2  age= int(input("enter your age: "))
3  if(age<=0):
4      print("age cant be in negative or zero")
5  else:
6      print("Hello",name, ",you are ",age," years old")
```

Output:

```
win32-x64\bundled\libs\debugpy\launcher 54743 -- "C:\Users\HP\Desktop\bridge course\data1.py" "
enter your name: shree
enter your age: 0
age cant be in negative

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 54759 -- "C:\Users\HP\Desktop\bridge course\data1.py" "
enter your name: vishnu
enter your age: 22
Hello vishnu ,you are 22 years old

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 54779 -- "C:\Users\HP\Desktop\bridge course\data1.py" "
enter your name: priya
enter your age: -45
age cant be in negative or zero
```

2. Type conversion challenge

Problem statement: take two numbers as input (strings), convert them to integers, and print their sum, difference, and product.

Algorithm:

- Take input (2 numbers) from the user
- Converting them into integer type
- Print the sum, difference and product as output

Code:

```
data2.py > ...
1  first= (input("enter the first number: "))
2  sec= (input("enter the second number: "))
3  a=int(first)
4  b=int(sec)
5  print("sum of ",a ,"and",b,"is",a+b)
6  print("difference of ",a ,"and",b,"is",a-b)
7  print("product of ",a ,"and",b,"is",a*b)
```

Output:

```
c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64047 -- "C:\Users\HP\Desktop\bridge course\data2.py" "
enter the first number: 22
enter the second number: 21
sum of  22 and 21 is 43
difference of  22 and 21 is 1
product of  22 and 21 is 462

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64053 -- "C:\Users\HP\Desktop\bridge course\data2.py" "
enter the first number: -24
enter the second number: 34
sum of  -24 and 34 is 10
difference of  -24 and 34 is -58
product of  -24 and 34 is -816

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64058 -- "C:\Users\HP\Desktop\bridge course\data2.py" "
enter the first number: 0
enter the second number: 23
sum of  0 and 23 is 23
difference of  0 and 23 is -23
product of  0 and 23 is 0
```

3. Data type classification:

Problem statement: identify the data type of the following inputs in your language of choice:
"123", 123, 123.45, True, "Hello"

Code:

```
Print(type("123"))
```

Output:

"123" is a string

123 is an integer

123.45 is a float or double

True is a Boolean

"Hello" is a string

SECTION 2: VARIABLES

1. Temperature converter

Problem statement: write a program that converts Celsius to Fahrenheit using a variable and formula:

$$F=(C*9/5)+32$$

Algorithm:

- Take input (Celsius) from the user
- Apply the formula
- Print the output

Code:

```
variables1.py > ...
1 cel=int(input("enter the celsius value:"))
2 fah=(cel*(9/5))+32
3 print(fah)
```

Output:

```
c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64078 -- "C:\Users\HP\Desktop\bridge course\variables1.py" "
enter the celsius value:0
32.0

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64083 -- "C:\Users\HP\Desktop\bridge course\variables1.py" "
enter the celsius value:100
212.0

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 64088 -- "C:\Users\HP\Desktop\bridge course\variables1.py" "
enter the celsius value:23
73.4
```

2. Simple calculator:

Problem statement: create a basic calculator that performs +,-,*,and / between two user provided numbers

Algorithm:

- Take input from the user and convert it into the integer
- Take the operator from the user
- Using the input perform the necessary operation using if else statements
- Print the output

Code:

```
variables2.py > ...
1  a=int(input("enter the first: "))
2  b=int(input("enter the second: "))
3  op=input("enter the operator")
4  if op=='+':
5      print (a+b)
6  elif op=='-':
7      print (a-b)
8  elif op=='*':
9      print (a*b)
10 elif op=='/':
11     if b==0:
12         print("zero divisible error")
13     else:
14         print (a/b)
15 else:
16     print("operator not found")
```

Output:

```
enter the first: 43
enter the second: 2
enter the operator/
21.5

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundle\libs\debugpy\launcher 53704 -- "C:\Users\HP\Desktop\bridge course\variables2.py" "
enter the first: 67
enter the second: 21
enter the operator-
46

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundle\libs\debugpy\launcher 53717 -- "C:\Users\HP\Desktop\bridge course\variables2.py" "
enter the first: 32
enter the second: 2
enter the operator*
64
```

SECTION 3: FLOW CONTROL

1. Even or odd checker:

Problem statement: accept a number from the user and print whether the number is even or odd using if else

Algorithm:

- Take input (number) from the user
- Using if else for finding even or odd number
- Print the output

Code:

```
flow1.py > ...
1  num =int(input("enter the number: "))
2  if(num%2 == 0):
3      print("even")
4  else:
5      print("odd")
```

Output:

```
enter the number: 45
odd

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 54517 -- "C:\Users\HP\Desktop\bridge course\flow1.py" "
enter the number: 123
odd

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 54582 -- "C:\Users\HP\Desktop\bridge course\flow1.py" "
enter the number: 342
even
```

2. Grade calculator

Problem statement: based on marks(0-100), print grade using: A:90+ ,80-89:B, 70-79:C,60-69:D, 60-:E

Algorithm:

- Take input (marks) from the user
- Using if else for classification of marks for a scale 10 units and labelling them with grade for the unit respectively
- Print the output

Code:

```

flow2.py > ...
1 gr=int(input("enter the marks"))
2 if(gr>=0 and gr<=100):
3     if(gr>=90):
4         print("A")
5     elif(gr>80):
6         print("B")
7     elif(gr>70):
8         print("C")
9     elif(gr>60):
10        print("D")
11    else:
12        print("E")
13 else:
14    print("marks cant be greater than 100 or less than 0")

```

Output:

```

enter the marks78
C

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 56390 -- "C:\Users\HP\Desktop\bridge course\flow2.py" "
enter the marks103
marks cant be greater than 100 or less than 0

c:\Users\HP\Desktop\bridge course>

c:\Users\HP\Desktop\bridge course>
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundled\libs\debugpy\launcher 56431 -- "C:\Users\HP\Desktop\bridge course\flow2.py" "
enter the marks3
E

```

3. Number comparison

Problem statement: Accept two numbers and print which is greater, or if they are equal

Algorithm:

- Take input (2 numbers) from the user
- Comparing 2 numbers and finding greater number
- Checking whether the 2 numbers are equal or not
- Print the output

Code:

```

flow3.py > ...
1 a=int(input("enter a number"))
2 b=int(input("enter other number"))
3 if(a>b):
4     print(a," is the greater")
5 elif(a==b):
6     print(a," And ",b," are equal")
7 else:
8     print(b," is the greater")

```

Output:

```
-- "C:\Users\HP\Desktop\bridge course\flow3.py" "  
enter a number23  
enter other number45  
45 is the greater  
  
c:\Users\HP\Desktop\bridge course>  
  
c:\Users\HP\Desktop\bridge course>  
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundle\libs\debugpy\launcher 56561  
-- "C:\Users\HP\Desktop\bridge course\flow3.py" "  
enter a number25  
enter other number25  
25 And 25 are equal  
  
c:\Users\HP\Desktop\bridge course>  
  
c:\Users\HP\Desktop\bridge course>  
c:\Users\HP\Desktop\bridge course> c: && cd "c:\Users\HP\Desktop\bridge course" && cmd /C "c:\Users\HP\AppData\Local\Programs\Python\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundle\libs\debugpy\launcher 56626  
-- "C:\Users\HP\Desktop\bridge course\flow3.py" "  
enter a number57  
enter other number32  
57 is the greater  
c:\Users\HP\Desktop\bridge course>
```

4. Countdown time

Problem statement: using a while loop, print numbers from 10 down to 1

Algorithm:

- Take input (10) from the user
- Using while loop for printing
- And also for reducing the input value by one
- Print the output

Code:

```
flow4.py > ...  
1 x=10  
2 while(x>0):  
3     print(x)  
4     x=x-1
```

Output:

```
hon\Python312\python.exe c:\Users\HP\.vscode\extensions\ms-python.debug  
-- "C:\Users\HP\Desktop\bridge course\flow4.py" "  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1
```

5. Multiplication table generator:

Problem statement: Accept a number from the user and print its multiplication table up to 10 using a for loop

Algorithm:

- Take input (number) from the user
- Using for loop to generate the multiplication table of the number
- Print the output

Code:

```
flow5.py > ...  
1  x=int(input("enter the number "))  
2  for i in range(1,11):  
3      print(i*x)
```

Output:

```
-- "C:\Users\HP\Desktop\bridge course\flow5.py" "  
enter the number 9  
9  
18  
27  
36  
45  
54  
63  
72  
81  
90
```