

Algorithm

Basic of Python

Section(1)

```
1 print("Hello, World!")
```

PROBLEMS 8

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

JUPYTER

```
/test/test.py  
Hello, World!
```

```
▷ # تعريف متغير نصي  
name = "Ahmed"  
  
# تعريف متغير رقمي  
age = 25  
  
# طباعة المتغيرات  
print(name) # يطبع: Ahmed  
print(age) # يطبع: 25  
  
# تغيير قيمة المتغير  
age = age + 1  
print(age) # يطبع: 26
```

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Python

```
... Ahmed  
25  
26
```

```
1 num1 = float(input("Enter first number: "))
2 num2 = float(input("Enter second number: "))
3 sum = num1 + num2
4 print("Sum:", sum)
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Enter first number: 3
Enter second number: 2
Sum: 5.0
```

```
# نوع نصي (String)
text = "Hello, Python!"
print(type(text)) # يطبع: <class 'str'>

# نوع رقمي صحيح (Integer)
number = 10
print(type(number)) # يطبع: <class 'int'>

# نوع رقمي عائلي (Float)
decimal = 3.14
print(type(decimal)) # يطبع: <class 'float'>

# نوع منطقي (Boolean)
is_true = True
print(type(is_true)) # يطبع: <class 'bool'>

# نوع قائمة (List)
my_list = [1, 2, 3, "apple"]
print(type(my_list)) # يطبع: <class 'list'>
```

[5]

Python

```
... <class 'str'>
    <class 'int'>
    <class 'float'>
    <class 'bool'>
    <class 'list'>
```

```
1 number = int(input("Enter a number: "))
2 if number > 0:
3     print("Number is positive")
4 else:
5     print("Number is not positive")
```

PROBLEMS OUTPUT

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Enter a number: 7

Number is positive

PS C:\Users\leyth\OneDrive\Desktop\test> & C:/Users/leyth/AppData/Local/Microsoft/WindowsApps/python3.11.exe c:/Users/leyth/OneDrive/Desktop/test/test.py

Enter a number: -3

Number is not positive

Task

```
test.py > ...
1  num = int(input("Enter a number: "))
2  if num % 2 == 0:
3      print(num, "is even")
4  else:
5      print(num, "is odd")
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Enter a number: 5
5 is odd
```

```
✓  
# مثال مع elif  
score = 75  
if score >= 90:  
    print("Excellent")  
elif score >= 70:  
    print("Good") # يطبع: Good  
else:  
    print("Needs improvement")
```

Python

Good

Task

```
1 num1 = float(input("Enter first number: "))
2 op = input("Enter operation (+, -, *, /): ")
3 num2 = float(input("Enter second number: "))
4
5 if op == '+':
6     print(num1 + num2)
7 elif op == '-':
8     print(num1 - num2)
9 elif op == '*':
10    print(num1 * num2)
11 elif op == '/':
12    print("Error: Division by zero!" if num2 == 0 else num1 / num2)
13 else:
14    print("Invalid operation!")
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
/test/test.py
Enter first number: 3
Enter operation (+, -, *, /): *
Enter second number: 4
12.0
```


Task

test.py / ...

```
1  fruits = ["apple", "banana", "orange"]  
2  for fruit in fruits:  
3      print("I like", fruit)
```

/test/test.py

I like apple

I like banana

I like orange

```
> v
count = 0
while count < 5:
    print(count) # 0 1 2 3 4 : يطبع
    count = count + 1 # زيادة العداد لتجنب حلقة لا نهائية
10]
```

Python

```
.. 0
   1
   2
   3
   4
```

Task

```
test.py > ...
1 password = ""
2 while password != "Nada":
3     password = input("Enter the password: ")
4     print("Welcome!")
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Enter the password: Nada
Welcome!
>
eDrive\Desktop\test>
```

test.py > ...

```
1 day = input("Enter a day (1-7): ")
2 match day:
3     case "1":
4         print("Monday")
5     case "2":
6         print("Tuesday")
7     case _:
8         print("Invalid or other day")
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Desktop/test/test.py
Enter a day (1-7): 1
Monday
```

Task

```
test.py > ...
1  color = input("Enter a color (red, blue, green): ")
2
3  # match خطوة 2: بنقارن اللون بـ
4  match color:
5      case "red": # لو كتب red
6          print("Red is like an apple!")
7      case "blue": # لو كتب blue
8          print("Blue is like the sky!")
9      case "green": # لو كتب green
10         print("Green is like grass!")
11     case _: # لو كتب حاجة تانية
12         print("I don't know that color!")
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Desktop/test/test.py
Enter a color (red, blue, green): red
Red is like an apple!
```

```
def square(num):  
    return num * num
```

```
number = float(input("Enter a number: "))  
result = square(number)  
print("Square of", number, "is", result)
```

Enter a number: 2

Square of 2.0 is 4.0

Task

```
1 def print_name(name):  
2     print("Your name is:", name)  
3  
4 name = input("Enter your name: ")  
5 print_name(name)
```

PROBLEMS 8 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
esktop/test/test.py  
Enter your name: ahmed  
Your name is: ahmed  
PS C:\Users\leyth\OneDrive\Desktop\test> █
```


test.py

```
1 print("there was a boy called ahmed ")
2 print("he was 32 years old")
3 print("he liked his name ahmed ")
4 print("but wasn't happy about being 32")
```

PROBLEMS 8

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JUPYTER

```
there was a boy called ahmed
he was 32 years old
he liked his name ahmed
but wasn't happy about being 32
```

C:\Users\Juth\OneDrive\Desktop>python test.py

Task



```
#string اي كلام هيبقي متخزن ك نص او حرف هيبقي متخزن جواه
print("Mohamed")
print("sara\nElsay\ned")#\n new line
print("Ahmed\" ")
print("Mona"Ahmed")
print("bbbbbb\tbbbb")#\t 6 tab
```

[3] ✓ 0.0s

Python

```
... Mohamed
sara
Elsay
ed
Ahmed"
MonaAhmed
bbbbbb  bbbb
```

test.py > ...

```
1 x="Omar"
2 print(x+" hello world"+" thank you")
3 print(x.lower())
4 print(x.upper())
5 print(x.islower())#check كل الجملة بتاعي small litter
6 print(x.isupper())#العكس
7 print(x.lower().islower())
8 print(x.upper().isupper())
```

PROBLEMS 8

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JUPYTER

Omar hello world thank you

omar

OMAR

False

False

True

True

Task



```
frist_name="Ahmed"
last_name="Elmetwally"
print(frist_name[0],last_name[0])#ال index هنا بنطلع الحرف بواسطة ال
print(last_name.index("m"))#ال index هنا هنطلع الحرف بتاع ال
#print(last_name.index("x"))#substring not found
print(last_name.index("Elmetwally"))#print 0 لان هو هيبص فقط علي اول حرف من الجملة بتاعي
print(last_name.replace("Elme","k"))
```

[3]

Py

```
... A E
    2
    0
    ktwally
```

Tank You