

01 - Introduction to Python-Variables-Datatypes

Input/Output-Formatting



Converting Input Strings

Write a program to convert strings to an integer and float and display its type.

Sample Input:

10

10.9

Sample Output:

10,<class 'int'>

10.9,<class 'float'>

For example:

| Input | Result |
|-------|----------------------|
| 10 | 10,<class 'int'> |
| 10.9 | 10.9,<class 'float'> |

Program:

```
a=int(input())
```

```
print(a,end=",")
```

```
print(type(a)) b=float(input())
```

```
print(round(b,1),end=",")
```

```
print(type(b))
```

| | Input | Expected | Got | |
|---|------------------|--|--|---|
| ✓ | 10 10.9 | 10,<class 'int'> 10.9,<class 'float'> | 10,<class 'int'> 10.9,<class 'float'> | ✓ |
| ✓ | 12 12.5 | 12,<class 'int'> 12.5,<class 'float'> | 12,<class 'int'> 12.5,<class 'float'> | ✓ |
| ✓ | 89 7.56 | 89,<class 'int'> 7.6,<class 'float'> | 89,<class 'int'> 7.6,<class 'float'> | ✓ |
| ✓ | 55000 56.2 | 55000,<class 'int'> 56.2,<class 'float'> | 55000,<class 'int'> 56.2,<class 'float'> | ✓ |
| ✓ | 2541 2541.679 | 2541,<class 'int'> 2541.7,<class 'float'> | 2541,<class 'int'> 2541.7,<class 'float'> | ✓ |

Ex. No: 1.2

Date: 12.03.24



Gross Salary

Ramesh's basic salary is input through the keyboard. His dearness allowance is 40% of his basic salary, and his house rent allowance is 20% of his basic salary. Write a program to calculate his gross salary.

Sample Input:

10000

Sample Output:

16000

For example:

| Input | Result |
|-------|--------|
| 10000 | 16000 |

Program:

```
a=int(input()) b=a*0.6
```

```
print(round(a+b))
```

| | Input | Expected | Got | |
|---|-------|----------|-------|---|
| ✓ | 10000 | 16000 | 16000 | ✓ |
| ✓ | 20000 | 32000 | 32000 | ✓ |
| ✓ | 28000 | 44800 | 44800 | ✓ |
| ✓ | 5000 | 8000 | 8000 | ✓ |

Ex. No. :1.3

Date: 12.03.24



Square Root

Write a simple python program to find the square root of a given floating point number. The output should be displayed with 3 decimal places.

Sample Input:

8.00

Sample Output:

2.828

For example:

| Input | Result |
|-------|--------|
| 14.00 | 3.742 |

Program:

```
import math a=float(input())
```

```
b=math.sqrt(a)
```

```
print(format(b,".3f"))
```

| | Input | Expected | Got | |
|---|-------|----------|--------|---|
| ✓ | 8.00 | 2.828 | 2.828 | ✓ |
| ✓ | 14.00 | 3.742 | 3.742 | ✓ |
| ✓ | 4.00 | 2.000 | 2.000 | ✓ |
| ✓ | 487 | 22.068 | 22.068 | ✓ |

Gain percent

Alfred buys an old scooter for Rs. X and spends Rs. Y on its repairs. If he sells the scooter for Rs. Z ($Z > X + Y$). Write a program to help Alfred to find his gain percent. Get all the above-mentioned values through the keyboard and find the gain percent.

Input Format:

The first line contains the Rs X

The second line contains Rs Y

The third line contains Rs Z Sample

Input:

10000

250

15000

Sample Output:

46.34 is the gain percent.

For example:

| Input | Result |
|-----------------------|----------------------------|
| 45500 500 60000 | 30.43 is the gain percent. |

Program:



```

a=int(input()) b=int(input())
c=int(input()) d=a+b e=c-d f=(e/d)*100
print(format(f, ".2f"), "is the gain percent.")

```

| | Input | Expected | Got | |
|---|------------------------|----------------------------|----------------------------|---|
| ✓ | 10000 250 15000 | 46.34 is the gain percent. | 46.34 is the gain percent. | ✓ |
| ✓ | 45500 500 60000 | 30.43 is the gain percent. | 30.43 is the gain percent. | ✓ |
| ✓ | 5000 0 7000 | 40.00 is the gain percent. | 40.00 is the gain percent. | ✓ |
| ✓ | 12500 5000 18000 | 2.86 is the gain percent. | 2.86 is the gain percent. | ✓ |

Ex. No.: 1.5

Date: 12.03.24

Register No.: 230701390

Name: TANISHA C A



Deposits

In many jurisdictions, a small deposit is added to drink containers to encourage people to recycle them. In one particular jurisdiction, drink containers holding one liter or less have a \$0.10 deposit and drink containers holding more than one liter have a \$0.25 deposit. Write a program that reads the number of containers of each size (less and more) from the user. Your program should continue by computing and displaying the refund that will be received for returning those containers. Format the output so that it includes a dollar sign and always displays exactly two decimal places.

Sample Input

10

20

Sample Output

Your total refund will be \$6.00.

For example:

| Input | Result |
|----------|-----------------------------------|
| 20 20 | Your total refund will be \$7.00. |

Program:

```
a=int(input()) b=int(input())
c=a*0.1+b*0.25
print("Your total refund
will be
$",format(c,".2f"),".",sep="
")
```



| | Input | Expected | Got | |
|---|------------|------------------------------------|------------------------------------|---|
| ✓ | 20 20 | Your total refund will be \$7.00. | Your total refund will be \$7.00. | ✓ |
| ✓ | 11 22 | Your total refund will be \$6.60. | Your total refund will be \$6.60. | ✓ |
| ✓ | 123 200 | Your total refund will be \$62.30. | Your total refund will be \$62.30. | ✓ |
| ✓ | 76 38 | Your total refund will be \$17.10. | Your total refund will be \$17.10. | ✓ |

Ex. No.: 1.6

Date: 12.03.24

Register No.: 230701390

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Carpenter

Justin is a carpenter who works on an hourly basis. He works in a company where he is paid Rs 50 for an hour on weekdays and Rs 80 for an hour on weekends. He works 10 hrs more on weekdays than weekends. If the salary paid for him is given, write a program to find the number of hours he has worked on weekdays and weekends.

Hint:

If the final result(hrs) are in -ve convert that to +ve using abs() function

The abs() function returns the absolute value of the given number.

```
number = -20
absolute_number = abs(number)
print(absolute_number)
# Output: 20
```

Sample Input:

450

Sample Output:

weekdays 10.38

weekend 0.38

For example:

| Input | Result |
|-------|--------------------------------|
| 450 | weekdays 10.38 weekend 0.38 |

Program:



```

a=int(input()) b=((500-a)/130)
b=abs(b) c=b+10
print("weekdays",format(c,".2f"))
)
print("weekend",format(b,".2f"))

```

| | Input | Expected | Got | |
|---|-------|---------------------------------|---------------------------------|---|
| ✓ | 450 | weekdays 10.38 weekend 0.38 | weekdays 10.38 weekend 0.38 | ✓ |
| ✓ | 500 | weekdays 10.00 weekend 0.00 | weekdays 10.00 weekend 0.00 | ✓ |
| ✓ | 10000 | weekdays 83.08 weekend 73.08 | weekdays 83.08 weekend 73.08 | ✓ |
| ✓ | 6789 | weekdays 58.38 weekend 48.38 | weekdays 58.38 weekend 48.38 | ✓ |