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|                     |                                 |
|---------------------|---------------------------------|
| <b>Started on</b>   | Tuesday, 12 March 2024, 1:54 PM |
| <b>State</b>        | Finished                        |
| <b>Completed on</b> | Tuesday, 19 March 2024, 2:06 PM |
| <b>Time taken</b>   | 7 days                          |
| <b>Marks</b>        | 6.00/6.00                       |
| <b>Grade</b>        | <b>100.00</b> out of 100.00     |

**Question 1**

Correct

Mark 1.00 out of 1.00

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

Sample Input:

10

10.9

Sample Output:

10,&lt;class 'int'&gt;

10.9,&lt;class 'float'&gt;

**For example:**

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

**Answer:** (penalty regime: 0 %)

```

1 a = input()
2 b = input()
3 x = int(a)
4 y = float(b)
5 print(f"{x},{type(x)}")
6 print(f"{round(y,1)},{type(y)}")
```

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

|   | Input    | Expected               | Got                    |   |
|---|----------|------------------------|------------------------|---|
| ✓ | 2541     | 2541,<class 'int'>     | 2541,<class 'int'>     | ✓ |
|   | 2541.679 | 2541.7,<class 'float'> | 2541.7,<class 'float'> |   |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

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  |

**Answer:** (penalty regime: 0 %)

```

1 x = input()
2 a = int(x)
3 da = a*0.4
4 hra = a*0.2
5 gross = a + da + hra
6 print(gross)
7

```

|   | Input | Expected | Got     |   |
|---|-------|----------|---------|---|
| ✓ | 10000 | 16000    | 16000.0 | ✓ |
| ✓ | 20000 | 32000    | 32000.0 | ✓ |
| ✓ | 28000 | 44800    | 44800.0 | ✓ |
| ✓ | 5000  | 8000     | 8000.0  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

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  |

**Answer:** (penalty regime: 0 %)

```

1 a = input()
2 x = float(a)
3 import math
4 y = math.sqrt(x)
5 output = "{:.3f}".format(y)
6 print(output)

```

|   | 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 | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.



**Question 4**

Correct

Mark 1.00 out of 1.00

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 | 30.43 is the gain percent. |
| 500   |                            |
| 60000 |                            |

**Answer:** (penalty regime: 0 %)

```

1 x = float(input())
2 y = float(input())
3 z = float(input())
4 a = x+y
5 g = z-a
6 gp = (g/a)*100
7 print(f"{gp:.2f} is the gain percent.")
8
9

```

|   | Input                 | Expected                   | Got                        |   |
|---|-----------------------|----------------------------|----------------------------|---|
| ✓ | 10000<br>250<br>15000 | 46.34 is the gain percent. | 46.34 is the gain percent. | ✓ |

|   | <b>Input</b>           | <b>Expected</b>            | <b>Got</b>                 |   |
|---|------------------------|----------------------------|----------------------------|---|
| ✓ | 45500<br>500<br>60000  | 30.43 is the gain percent. | 30.43 is the gain percent. | ✓ |
| ✓ | 5000<br>0<br>7000      | 40.00 is the gain percent. | 40.00 is the gain percent. | ✓ |
| ✓ | 12500<br>5000<br>18000 | 2.86 is the gain percent.  | 2.86 is the gain percent.  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

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    | Your total refund will be \$7.00. |
| 20    |                                   |

**Answer:** (penalty regime: 0 %)

```

1 x = int(input())
2 y = int(input())
3 a = x*0.10
4 b = y*0.25
5 c = a+b
6 d = (round(c,2))
7 print(f"Your total refund will be ${d:.2f}.")
```

|   | Input      | Expected                           | Got                                |   |
|---|------------|------------------------------------|------------------------------------|---|
| ✓ | 20<br>20   | Your total refund will be \$7.00.  | Your total refund will be \$7.00.  | ✓ |
| ✓ | 11<br>22   | Your total refund will be \$6.60.  | Your total refund will be \$6.60.  | ✓ |
| ✓ | 123<br>200 | Your total refund will be \$62.30. | Your total refund will be \$62.30. | ✓ |

|   | Input    | Expected                           | Got                                |   |
|---|----------|------------------------------------|------------------------------------|---|
| ✓ | 76<br>38 | Your total refund will be \$17.10. | Your total refund will be \$17.10. | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

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<br>weekend 0.38 |

**Answer:** (penalty regime: 0 %)

```
1 salary = float(input())
2 end = (salary - 500)/130
3 abs_end = abs(end)
4 days = 10+abs_end
5 print("weekdays %.2f"%(days))
6 print("weekend %.2f"%(abs_end))
```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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|                     |                                  |
|---------------------|----------------------------------|
| <b>Started on</b>   | Tuesday, 2 April 2024, 2:20 PM   |
| <b>State</b>        | Finished                         |
| <b>Completed on</b> | Saturday, 13 April 2024, 9:50 AM |
| <b>Time taken</b>   | 10 days 19 hours                 |
| <b>Overdue</b>      | 8 days 19 hours                  |
| <b>Marks</b>        | 19.00/19.00                      |
| <b>Grade</b>        | <b>100.00</b> out of 100.00      |

**Question 1**

Correct

Mark 1.00 out of 1.00

Pretend that you have just opened a new savings account that earns 4 percent interest per year. The interest that you earn is paid at the end of the year, and is added to the balance of the savings account. Write a program that begins by reading the amount of money deposited into the account from the user. Then your program should compute and display the amount in the savings account after 1, 2, and 3 years. Display each amount so that it is rounded to 2 decimal places. Sample Input: 10000 Sample Output: Balance as of end of Year 1: \$10400.00. Balance as of end of Year 2: \$10816.00. Balance as of end of Year 3: \$11248.64.

**For example:**

| Input | Result   |
|-------|--|
| 10000 | Balance as of end of Year 1: \$10400.00.<br>Balance as of end of Year 2: \$10816.00.<br>Balance as of end of Year 3: \$11248.64. |

**Answer:** (penalty regime: 0 %)

```

1 initial_deposit = float(input())
2 interest_rate = 4/100
3 for year in range(1,4):
4     balance = initial_deposit*(1+interest_rate)**year
5     print(f"Balance as of end of Year {year}: ${balance:.2f}.")
6
7

```

|   | Input | Expected   | Got  |   |
|---|-------|--|--|---|
| ✓ | 10000 | Balance as of end of Year 1: \$10400.00.<br>Balance as of end of Year 2: \$10816.00.<br>Balance as of end of Year 3: \$11248.64. | Balance as of end of Year 1: \$10400.00.<br>Balance as of end of Year 2: \$10816.00.<br>Balance as of end of Year 3: \$11248.64. | ✓ |
| ✓ | 20000 | Balance as of end of Year 1: \$20800.00.<br>Balance as of end of Year 2: \$21632.00.<br>Balance as of end of Year 3: \$22497.28. | Balance as of end of Year 1: \$20800.00.<br>Balance as of end of Year 2: \$21632.00.<br>Balance as of end of Year 3: \$22497.28. | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Note:

Dont use if-else. [Operators](#) alone must be used .

A team from the Rotract club had planned to conduct a rally to create awareness among the Coimbatore people to donate blood. They conducted the rally successfully. Many of the Coimbatore people realized it and came forward to donate their blood to nearby blood banks. The eligibility criteria for donating blood are people should be above or equal to 18 and his/ her weight should be above 40. There was a huge crowd and staff in the blood bank found it difficult to manage the crowd. So they decided to keep a system and ask the people to enter their age and weight in the system. If a person is eligible he/she will be allowed inside.

Write a program and feed it to the system to find whether a person is eligible or not.

**Input Format:**

Input consists of two integers that correspond to the age and weight of a person respectively.

**Output Format:**

Display True(IF ELIGIBLE)

Display False (if not eligible)

**Sample Input**

19

45

**Sample Output**

True

**For example:**

| Input | Result |
|-------|--------|
| 18    | False  |
| 40    |        |

**Answer:** (penalty regime: 0 %)

```

1 a=int(input())
2 b=int(input())
3 if (a>=18):
4     if b>40:
5         print(True)
6     else:
7         print(False)
8 else:
9     print(False)
10

```

|   | Input    | Expected | Got   |   |
|---|----------|----------|-------|---|
| ✓ | 19<br>45 | True     | True  | ✓ |
| ✓ | 18<br>40 | False    | False | ✓ |
| ✓ | 18<br>42 | True     | True  | ✓ |
| ✓ | 16<br>45 | False    | False | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.



**Question 3**

Correct

Mark 10.00 out of 10.00

An online retailer sells two products: widgets and gizmos. Each widget weighs 75 grams. Each gizmo weighs 112 grams. Write a program that reads the number of widgets and the number of gizmos from the user. Then your program should compute and display the total weight of the parts.

[Sample](#) Input:

10

20

[Sample](#) Output:

The total weight of all these widgets and gizmos is 2990 grams.

**Answer:** (penalty regime: 0 %)

```

1 w_p_w = 75
2 w_p_g = 112
3 n_w = int(input(""))
4 n_g = int(input(""))
5 tot_w = (n_w*w_p_w)+(n_g*w_p_g)
6 print("The total weight of all these widgets and gizmos is {} grams.".format(tot_w))

```

|   | <b>Input</b> | <b>Expected</b>  | <b>Got</b>   |   |
|---|--------------|--|--|---|
| ✓ | 10<br>20     | The total weight of all these widgets and gizmos is<br>2990 grams. | The total weight of all these widgets and gizmos is<br>2990 grams. | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 10.00/10.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

In the 1800s, the battle of Troy was led by Hercules. He was a superstitious person. He believed that his crew can win the battle only if the total count of the weapons in hand is in multiple of 3 and the soldiers are in an even number of count. Given the total number of weapons and the soldier's count, Find whether the battle can be won or not according to Hercules's belief. If the battle can be won print True otherwise print False.

**Input format:**

Line 1 has the total number of weapons

Line 2 has the total number of Soldiers.

**Output Format:**

If the battle can be won print True otherwise print False.

Sample Input:

32

43

Sample Output:

False

**For example:**

| Input | Result |
|-------|--------|
| 32    | False  |
| 43    |        |

**Answer:** (penalty regime: 0 %)

```
1 def c_win_b(tot_w,tot_s):
2     if tot_w % 3 == 0 and tot_s % 2 == 0:
3         return True
4     else:
5         return False
6 tot_w = int(input())
7 tot_s = int(input())
8 print(c_win_b(tot_w,tot_s))
```

|   | Input         | Expected | Got   |   |
|---|---------------|----------|-------|---|
| ✓ | 32<br>43      | False    | False | ✓ |
| ✓ | 273<br>7890   | True     | True  | ✓ |
| ✓ | 800<br>4590   | False    | False | ✓ |
| ✓ | 6789<br>32996 | True     | True  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

In London, every year during Dasara there will be a very grand doll show. People try to invent new dolls of different varieties. The best-sold doll's creator will be awarded with a cash prize. So people broke their heads to create dolls innovatively. Knowing this competition, Mr.Lokpaul tried to create a doll that sings only when an even number is pressed and the number should not be zero and greater than 100. IF Lokpaul wins print true, otherwise false.

Sample Input

10

Sample Output

True

Explanation:

Since 10 is an even number and a number between 0 and 100, True is printed

**For example:**

| Input | Result |
|-------|--------|
| 101   | False  |

**Answer:** (penalty regime: 0 %)

```

1 a = int(input())
2 if 0<a<101:
3     print(True)
4 else:
5     print(False)

```

|   | Input | Expected | Got   |   |
|---|-------|----------|-------|---|
| ✓ | 56    | True     | True  | ✓ |
| ✓ | 101   | False    | False | ✓ |
| ✓ | -1    | False    | False | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

Write a python program that takes a integer between 0 and 15 as input and displays the number of '1' s in its binary form.(Hint:use python bitwise operator.)

Sample Input

3

Sample Output:

2

Explanation:

The binary representation of 3 is 011, hence there are 2 ones in it. so the output is 2.

**For example:**

| Input | Result |
|-------|--------|
| 3     | 2      |

**Answer:** (penalty regime: 0 %)

```

1 def c_one(n):
2     c=0
3     while n:
4         c+=n&1
5         n>>=1
6     return c
7 n = int(input())
8 print(c_one(n))
9

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 3     | 2        | 2   | ✓ |
| ✓ | 5     | 2        | 2   | ✓ |
| ✓ | 15    | 4        | 4   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 7**

Correct

Mark 1.00 out of 1.00

Mr.Ram has been given a problem kindly help him to solve it. The input of the program is either 0 or 1. IF 0 is the input he should display "C" if 1 is the input it should display "D".There is a constraint that Mr. Ram should use either logical [operators](#) or arithmetic [operators](#) to solve the problem, not anything else.

Hint:

Use ASCII values of C and D.

**Input Format:**An integer x,  $0 \leq x \leq 1$ .**Output Format:**

output a single character "C" or "D"depending on the value of x.

**Input 1:**

0

**Output 1:**

C

**Input 2:**

1

**Output 1:**

D

**For example:**

| Input | Result |
|-------|--------|
| 0     | C      |

**Answer:** (penalty regime: 0 %)

```
1 def dis_charac(x):
2     return 'C' if x==0 else 'D'
3 x = int(input())
4 print(dis_charac(x))
```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 0     | C        | C   | ✓ |
| ✓ | 1     | D        | D   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 8**

Correct

Mark 1.00 out of 1.00

The program that you create for this exercise will begin by reading the cost of a meal ordered at a restaurant from the user. Then your program will compute the tax and tip for the meal. Use your local tax rate (5 percent) when computing the amount of tax owing. Compute the tip as 18 percent of the meal amount (without the tax). The output from your program should include the tax amount, the tip amount, and the grand total for the meal including both the tax and the tip. Format the output so that all of the values are displayed using two decimal places.

Sample Input

100

Sample Output

The tax is 5.00 and the tip is 18.00, making the total 123.00

**For example:**

| Input | Result  |
|-------|---|
| 100   | The tax is 5.00 and the tip is 18.00, making the total 123.00 |

**Answer:** (penalty regime: 0 %)

```

1 m_c = float(input(""))
2 t_r = 0.05
3 ti_r = 0.18
4 t_am = m_c*t_r
5 ti_am = m_c*ti_r
6 tot_am = m_c+t_am+ti_am
7 op = "The tax is {:.2f} and the tip is {:.2f}, making the total {:.2f}".format(t_am,ti_am,tot_am)
8 print(op)

```

|   | Input | Expected   | Got  |   |
|---|-------|--|--|---|
| ✓ | 100   | The tax is 5.00 and the tip is 18.00, making the total 123.00  | The tax is 5.00 and the tip is 18.00, making the total 123.00  | ✓ |
| ✓ | 250   | The tax is 12.50 and the tip is 45.00, making the total 307.50 | The tax is 12.50 and the tip is 45.00, making the total 307.50 | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 9**

Correct

Mark 1.00 out of 1.00

Write a program that returns the last digit of the given number. Last digit is being referred to the least significant digit i.e. the digit in the ones (units) place in the given number.

The last digit should be returned as a positive number.

For example,

if the given number is 197, the last digit is 7

if the given number is -197, the last digit is 7

**For example:**

| Input | Result |
|-------|--------|
| 197   | 7      |
| -197  | 7      |

**Answer:** (penalty regime: 0 %)

```
1 a = str(input(""))
2 b = int(a[len(a)-1])
3 print(b)
```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 197   | 7        | 7   | ✓ |
| ✓ | -197  | 7        | 7   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 10**

Correct

Mark 1.00 out of 1.00

Mr. X's birthday is in next month. This time he is planning to invite N of his friends. He wants to distribute some chocolates to all of his friends after the party. He went to a shop to buy a packet of chocolates. At the chocolate shop, 4 packets are there with different numbers of chocolates. He wants to buy such a packet which contains a number of chocolates, which can be distributed equally among all of his friends. Help Mr. X to buy such a packet.

Input Given:

N-No of friends

P1,P2,P3 AND P4-No of chocolates

OUTPUT:

"True" if he can buy that packet and "False" if he can't buy that packet.

SAMPLE INPUT AND OUTPUT:

5

25

12

10

9

OUTPUT

True False True False

**For example:**

| Input | Result               |
|-------|----------------------|
| 5     | True False True True |
| 25    |                      |
| 23    |                      |
| 20    |                      |
| 10    |                      |

**Answer:** (penalty regime: 0 %)

```

1 n = int(input())
2 i=0
3 while i<4:
4     a = int(input())
5     if(a%n==0):
6         print(True, end = ' ')
7     else:
8         print(False, end = ' ')
9     i=i+1

```

|   | Input                     | Expected              | Got                   |   |
|---|---------------------------|-----------------------|-----------------------|---|
| ✓ | 5<br>25<br>23<br>20<br>10 | True False True True  | True False True True  | ✓ |
| ✓ | 4<br>23<br>24<br>21<br>12 | False True False True | False True False True | ✓ |
| ✓ | 8<br>64<br>8<br>16<br>32  | True True True True   | True True True True   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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|                     |                                  |
|---------------------|----------------------------------|
| <b>Started on</b>   | Saturday, 13 April 2024, 7:43 PM |
| <b>State</b>        | Finished                         |
| <b>Completed on</b> | Saturday, 13 April 2024, 8:09 PM |
| <b>Time taken</b>   | 26 mins 22 secs                  |
| <b>Marks</b>        | 9.00/10.00                       |
| <b>Grade</b>        | <b>90.00</b> out of 100.00       |

**Question 1**

Correct

Mark 1.00 out of 1.00

The length of a month varies from 28 to 31 days. In this exercise you will create a program that reads the name of a month from the user as a string. Then your program should display the number of days in that month. Display "28 or 29 days" for February so that leap years are addressed.

Sample Input 1

February

Sample Output 1

February has 28 or 29 days in it.

Sample Input 2

March

Sample Output 2

March has 31 days in it.

Sample Input 3

April

Sample Output 3

April has 30 days in it.

**For example:**

| Input    | Result                            |
|----------|-----------------------------------|
| February | February has 28 or 29 days in it. |

**Answer:** (penalty regime: 0 %)

```
1 A = input()
2
3 if A == 'January' or A == 'March' or A == 'May' or A == 'July' or A == 'August' or A == 'October' or A == 'December':
4     print(A , 'has 31 days in it.')
5 elif A == 'February':
6     print(A , 'has 28 or 29 days in it.')
7 else:
8     print(A, 'has 30 days in it.' )
9
```

|   | <b>Input</b> | <b>Expected</b>                   | <b>Got</b>                        |   |
|---|--------------|-----------------------------------|-----------------------------------|---|
| ✓ | February     | February has 28 or 29 days in it. | February has 28 or 29 days in it. | ✓ |
| ✓ | March        | March has 31 days in it.          | March has 31 days in it.          | ✓ |
| ✓ | April        | April has 30 days in it.          | April has 30 days in it.          | ✓ |
| ✓ | May          | May has 31 days in it.            | May has 31 days in it.            | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

IN / OUT

Ms. Sita, the faculty handling programming lab for you is very strict. Your seniors have told you that she will not allow you to enter the week's lab if you have not completed atleast half the number of problems given last week. Many of you didn't understand this statement and so they requested the good programmers from your batch to write a program to find whether a student will be allowed into a week's lab given the number of problems given last week and the number of problems solved by the student in that week.

Input Format:

Input consists of 2 integers.

The first integer corresponds to the number of problems given and the second integer corresponds to the number of problems solved.

Output Format:

Output consists of the string "IN" or "OUT".

Sample Input and Output:

Input

8

3

Output

OUT

**For example:**

| Input | Result |
|-------|--------|
| 8     | OUT    |
| 3     |        |

**Answer:** (penalty regime: 0 %)

```

1 A = int(input())
2 B = int(input())
3 C = A/2
4 if( B>=C ):
```

```
5     print("IN")
6 v else :
7     print("OUT")
```

|   | Input    | Expected | Got |   |
|---|----------|----------|-----|---|
| ✓ | 8<br>3   | OUT      | OUT | ✓ |
| ✓ | 8<br>5   | IN       | IN  | ✓ |
| ✓ | 20<br>9  | OUT      | OUT | ✓ |
| ✓ | 50<br>31 | IN       | IN  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Three numbers form a Pythagorean triple if the sum of squares of two numbers is equal to the square of the third.

For example, 3, 5 and 4 form a Pythagorean triple, since  $3^2 + 4^2 = 25 = 5^2$

You are given three integers, a, b, and c. They need not be given in increasing order. If they form a Pythagorean triple, then print "yes", otherwise, print "no". Please note that the output message is in small letters.

Sample Input

3  
5  
4

Sample Output

yes

Sample Test Cases

Test Case 1

Input

3  
5  
4

Output

yes

Test Case 2

Input

5  
8  
2

Output

no

**Answer:** (penalty regime: 0 %)

```
1 A = int(input())
2 B = int(input())
3 C = int(input())
4 if A>B :
5     A,B = B,A
6 if A>C:
7     A,C = C,A
8 if B>C:
9     B,C = C,B
10 if A**2 + B**2 == C**2 :
11     print("yes")
12 else:
13     print("no")
```

|   | Input       | Expected | Got |   |
|---|-------------|----------|-----|---|
| ✓ | 3<br>5<br>4 | yes      | yes | ✓ |
| ✓ | 5<br>8<br>2 | no       | no  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

In this exercise you will create a program that reads a letter of the alphabet from the user. If the user enters a, e, i, o or u then your program should display a message indicating that the entered letter is a vowel. If the user enters y then your program should display a message indicating that sometimes y is a vowel, and sometimes y is a consonant. Otherwise your program should display a message indicating that the letter is a consonant.

Sample Input 1

i

Sample Output 1

It's a vowel.

Sample Input 2

y

Sample Output 2

Sometimes it's a vowel... Sometimes it's a consonant.

Sample Input3

c

Sample Output 3

It's a consonant.

**For example:**

| Input | Result  |
|-------|---|
| y     | Sometimes it's a vowel... Sometimes it's a consonant. |
| c     | It's a consonant.                                     |

**Answer:** (penalty regime: 0 %)

```

1 A = (input(""))
2 if (A == 'a' or A == 'e' or A == 'i' or A == 'o' or A == 'u'):
3     print("It's a vowel.")
4 elif A == 'y':
5     print("Sometimes it's a vowel... Sometimes it's a consonant.")
6 else:
7     print("It's a consonant.")

```

|   | Input | Expected  | Got   |   |
|---|-------|---|---|---|
| ✓ | i     | It's a vowel.   | It's a vowel.   | ✓ |
| ✓ | y     | Sometimes it's a vowel... Sometimes it's a consonant. | Sometimes it's a vowel... Sometimes it's a consonant. | ✓ |
| ✓ | c     | It's a consonant.                                     | It's a consonant.                                     | ✓ |
| ✓ | e     | It's a vowel.   | It's a vowel.   | ✓ |
| ✓ | r     | It's a consonant.                                     | It's a consonant.                                     | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

A triangle can be classified based on the lengths of its sides as equilateral, isosceles or scalene. All three sides of an equilateral triangle have the same length. An isosceles triangle has two sides that are the same length, and a third side that is a different length. If all of the sides have different lengths then the triangle is scalene.

Write a program that reads the lengths of the three sides of a triangle from the user. Then display a message that states the triangle's type.

Sample Input 1

60  
60  
60

Sample Output 1

That's a equilateral triangle

Sample Input 2

40  
40  
80

Sample Output 2

That's a isosceles triangle

Sample Input 3

50  
60  
70

Sample Output 3

That's a scalene triangle

**For example:**

| Input          | Result                        |
|----------------|-------------------------------|
| 60<br>60<br>60 | That's a equilateral triangle |
| 40<br>40<br>80 | That's a isosceles triangle   |

**Answer:** (penalty regime: 0 %)

```

1 A = int(input())
2 B = int(input())
3 C = int(input())
4
5 if A == B == C:
6     print("That's a equilateral triangle")
7
8 elif A == B or A == C or B == C:
9     print("That's a isosceles triangle")
10
11 else:
12     print("That's a scalene triangle")

```

|   | <b>Input</b>   | <b>Expected</b>               | <b>Got</b>                    |   |
|---|----------------|-------------------------------|-------------------------------|---|
| ✓ | 60<br>60<br>60 | That's a equilateral triangle | That's a equilateral triangle | ✓ |
| ✓ | 40<br>40<br>80 | That's a isosceles triangle   | That's a isosceles triangle   | ✓ |
| ✓ | 50<br>60<br>70 | That's a scalene triangle     | That's a scalene triangle     | ✓ |
| ✓ | 50<br>50<br>80 | That's a isosceles triangle   | That's a isosceles triangle   | ✓ |
| ✓ | 10<br>10<br>10 | That's a equilateral triangle | That's a equilateral triangle | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

Write a program that returns the second last digit of the given number. Second last digit is being referred to the digit in the tens place in the given number.

For example, if the given number is 197, the second last digit is 9.

Note1 - The second last digit should be returned as a positive number. i.e. if the given number is -197, the second last digit is 9.

Note2 - If the given number is a single digit number, then the second last digit does not exist. In such cases, the program should return -1. i.e. if the given number is 5, the second last digit should be returned as -1

**For example:**

| Input | Result |
|-------|--------|
| 197   | 9      |
| 5     | -1     |

**Answer:** (penalty regime: 0 %)

```

1 A = int(input())
2 B = str(A)
3 if len(B) >= 2:
4     C = str(B)[-2]
5     print(C)
6 else:
7     print(-1)

```

|   | Input  | Expected | Got |   |
|---|--------|----------|-----|---|
| ✓ | 197    | 9        | 9   | ✓ |
| ✓ | -197   | 9        | 9   | ✓ |
| ✓ | 5      | -1       | -1  | ✓ |
| ✓ | 123456 | 5        | 5   | ✓ |
| ✓ | 8      | -1       | -1  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 7**

Correct

Mark 1.00 out of 1.00

The Chinese zodiac assigns animals to years in a 12 year cycle. One 12 year cycle is shown in the table below. The pattern repeats from there, with 2012 being another year of the dragon, and 1999 being another year of the hare.

Year Animal

2000 Dragon

2001 Snake

2002 Horse

2003 Sheep

2004 Monkey

2005 Rooster

2006 Dog

2007 Pig

2008 Rat

2009 Ox

2010 Tiger

2011 Hare

Write a program that reads a year from the user and displays the animal associated with that year. Your program should work correctly for any year greater than or equal to zero, not just the ones listed in the table.

Sample Input 1

2010

Sample Output 1

2010 is the year of the Tiger.

Sample Input 2

2020

Sample Output 2

2020 is the year of the Rat.

**Answer:** (penalty regime: 0 %)

```
1 A = int(input())
2 B = A%12
3 C = ["Monkey", "Rooster", "Dog", "Pig", "Rat", "Ox", "Tiger", "Hare", "Dragon", "Snake", "Horse", "Sheep"]
4 print(f'{A} is the year of the {C[B]}.'
```

|   | <b>Input</b> | <b>Expected</b>                | <b>Got</b>                     |   |
|---|--------------|--------------------------------|--------------------------------|---|
| ✓ | 2010         | 2010 is the year of the Tiger. | 2010 is the year of the Tiger. | ✓ |
| ✓ | 2020         | 2020 is the year of the Rat.   | 2020 is the year of the Rat.   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 8**

Correct

Mark 1.00 out of 1.00

Write a program to calculate and print the Electricity bill where the unit consumed by the user is given from test case. It prints the total amount the customer has to pay. The charge are as follows:

| Unit                            | Charge / Unit |
|---------------------------------|---------------|
| Upto 199                        | @1.20         |
| 200 and above but less than 400 | @1.50         |
| 400 and above but less than 600 | @1.80         |
| 600 and above                   | @2.00         |

If bill exceeds Rs.400 then a surcharge of 15% will be charged and the minimum bill should be of Rs.100/-

Sample Test Cases

Test Case 1

Input

50

Output

100.00

Test Case 2

Input

300

Output

517.50

**For example:**

| Input  | Result  |
|--------|---------|
| 100.00 | 120.00  |
| 500    | 1035.00 |

**Answer:** (penalty regime: 0 %)

```

1 A = float(input())
2 if (A <= 199):
3     B = A * 1.20
4 elif (200 <= A < 400):
5     B = A * 1.50
6 elif (400 <= A < 600):
7     B = A * 1.80
8 else :
9     B = A * 2.00
10 C = B * 0.15
11 if(B > 400):
12     print(B + C)
13 elif(B < 100):
14     print("100.00")
15 else:
16     print(B)

```

|   | Input  | Expected | Got    |   |
|---|--------|----------|--------|---|
| ✓ | 50     | 100.00   | 100.00 | ✓ |
| ✓ | 100.00 | 120.00   | 120.0  | ✓ |
| ✓ | 500    | 1035.00  | 1035.0 | ✓ |
| ✓ | 700    | 1610.00  | 1610.0 | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 9**

Correct

Mark 1.00 out of 1.00

Write a program to find the eligibility of admission for a professional course based on the following criteria:

Marks in Maths  $\geq$  65

Marks in Physics  $\geq$  55

Marks in Chemistry  $\geq$  50

Or

Total in all three subjects  $\geq$  180

Sample Test Cases

Test Case 1

Input

70

60

80

Output

The candidate is eligible

Test Case 2

Input

50

80

80

Output

The candidate is eligible

Test Case 3

Input

50

60

40

Output

The candidate is not eligible

**For example:**

| Input | Result                    |
|-------|---------------------------|
| 70    | The candidate is eligible |
| 60    |                           |
| 80    |                           |

**Answer:** (penalty regime: 0 %)

```

1 A = int(input())
2 B = int(input())
3 C = int(input())
4 if A + B + C > 180:
5

```

```
6     print("The candidate is eligible")
7 else:
8     print("The candidate is not eligible")
```

|   | Input          | Expected                      | Got                           |   |
|---|----------------|-------------------------------|-------------------------------|---|
| ✓ | 70<br>60<br>80 | The candidate is eligible     | The candidate is eligible     | ✓ |
| ✓ | 50<br>80<br>80 | The candidate is eligible     | The candidate is eligible     | ✓ |
| ✓ | 50<br>60<br>40 | The candidate is not eligible | The candidate is not eligible | ✓ |
| ✓ | 20<br>10<br>25 | The candidate is not eligible | The candidate is not eligible | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 10**

Incorrect

Mark 0.00 out of 1.00

Most years have 365 days. However, the time required for the Earth to orbit the Sun is actually slightly more than that. As a result, an extra day, February 29, is included in some years to correct for this difference. Such years are referred to as leap years. The rules for determining whether or not a year is a leap year follow:

- Any year that is divisible by 400 is a leap year.
- Of the remaining years, any year that is divisible by 100 is not a leap year.
- Of the remaining years, any year that is divisible by 4 is a leap year.
- All other years are not leap years.

Write a program that reads a year from the user and displays a message indicating whether or not it is a leap year.

Sample Input 1

1900

Sample Output 1

1900 is not a leap year.

Sample Input 2

2000

Sample Output 2

2000 is a leap year.

**Answer:** (penalty regime: 0 %)

```

1 A = int(input())
2 if A%400 == 0:
3     print(A, 'is a leap year.')
4 else:
5     print(A , 'is not a leap year.')

```

|   | Input | Expected                 | Got                      |   |
|---|-------|--------------------------|--------------------------|---|
| ✓ | 1900  | 1900 is not a leap year. | 1900 is not a leap year. | ✓ |
| ✓ | 2000  | 2000 is a leap year.     | 2000 is a leap year.     | ✓ |
| ✓ | 2100  | 2100 is not a leap year. | 2100 is not a leap year. | ✓ |
| ✗ | 2020  | 2020 is a leap year.     | 2020 is not a leap year. | ✗ |

Your code must pass all tests to earn any marks. Try again.

Show differences

Incorrect

Marks for this submission: 0.00/1.00.

[◀ Week3\\_mcq](#)

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|                     |                                 |
|---------------------|---------------------------------|
| <b>Started on</b>   | Tuesday, 16 April 2024, 1:50 PM |
| <b>State</b>        | Finished                        |
| <b>Completed on</b> | Friday, 19 April 2024, 4:26 PM  |
| <b>Time taken</b>   | 3 days 2 hours                  |
| <b>Overdue</b>      | 1 day 2 hours                   |
| <b>Marks</b>        | 10.00/10.00                     |
| <b>Grade</b>        | <b>100.00</b> out of 100.00     |

**Question 1**

Correct

Mark 1.00 out of 1.00

A Number is said to be Disarium number when the sum of its digit raised to the power of their respective positions becomes equal to the number itself. Write a program to print number is Disarium or not.

**Input Format:**

Single Integer Input from stdin.

**Output Format:**

Yes or No.

**Example Input:**

175

**Output:**

Yes

**Explanation**

$$1^1 + 7^2 + 5^3 = 175$$

**Example Input:**

123

**Output:**

No

**For example:**

| Input | Result |
|-------|--------|
| 175   | Yes    |
| 123   | No     |

**Answer:** (penalty regime: 0 %)

```
1 number = input()
2 sum_of_powers = sum(int(digit) ** (index + 1) for index, digit in enumerate(number))
3 if sum_of_powers == int(number):
4     print("Yes")
5 else:
6     print("No")
```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 175   | Yes      | Yes | ✓ |
| ✓ | 123   | No       | No  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Write a program to find the sum of the series  $1 + 11 + 111 + 1111 + \dots + n$  terms (n will be given as input from the user and sum will be the output)

Sample Test Cases

Test Case 1

Input

4

Output

1234

Test Case 2

Input

6

Output

123456

**Answer:** (penalty regime: 0 %)

```

1 def series_sum(n):
2     term = 1
3     total_sum = 0
4     for i in range(n):
5         total_sum += term
6         term = term * 10 + 1
7
8     return total_sum
9 n = int(input())
10 print(series_sum(n))

```

|   | Input | Expected | Got    |   |
|---|-------|----------|--------|---|
| ✓ | 4     | 1234     | 1234   | ✓ |
| ✓ | 6     | 123456   | 123456 | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Given a positive integer N, check whether it can be represented as a product of single digit numbers.

**Input Format:**

Single Integer input.

**Output Format:**

Output displays Yes if condition satisfies else prints No.

**Example Input:**

14

**Output:**

Yes

**Example Input:**

13

**Output:**

No

**Answer:** (penalty regime: 0 %)

```

1 N = int(input())
2 def is_single_digit_product(num):
3     for i in range(2, 10):
4         if num % i == 0 and num // i < 10:
5             return True
6     return False
7 if is_single_digit_product(N):
8     print("Yes")
9 else:
10    print("No")

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 14    | Yes      | Yes | ✓ |
| ✓ | 13    | No       | No  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

Write a program that finds whether the given number N is Prime or not.

If the number is prime, the program should return 2 else it must return 1.

Assumption:  $2 \leq N \leq 5000$ , where N is the given number.

Example1: if the given number N is 7, the method must return 2

Example2: if the given number N is 10, the method must return 1

**For example:**

| Input | Result |
|-------|--------|
| 7     | 2      |
| 10    | 1      |

**Answer:** (penalty regime: 0 %)

```

1 x=int(input())
2 if x/x==1 and x%2!=0 :
3     print("2")
4 else :
5     print("1")

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 7     | 2        | 2   | ✓ |
| ✓ | 10    | 1        | 1   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

Write a program to return the nth number in the fibonacci series.

The value of N will be passed to the program as input.

NOTE: Fibonacci series looks like –

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ... and so on.

i.e. Fibonacci series starts with 0 and 1, and continues generating the next number as the sum of the previous two numbers.

- first Fibonacci number is 0,
- second Fibonacci number is 1,
- third Fibonacci number is 1,
- fourth Fibonacci number is 2,
- fifth Fibonacci number is 3,
- sixth Fibonacci number is 5,
- seventh Fibonacci number is 8, and so on.

**For example:**

| Input | Result |
|-------|--------|
| 1     | 0      |
| 4     | 2      |
| 7     | 8      |

**Answer:** (penalty regime: 0 %)

```

1 n = int(input())
2 fibonacci = [0, 1]
3 for i in range(2, n+1):
4     next_fib = fibonacci[-1] + fibonacci[-2]
5     fibonacci.append(next_fib)
6 print(fibonacci[n - 1])

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 1     | 0        | 0   | ✓ |

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 4     | 2        | 2   | ✓ |
| ✓ | 7     | 8        | 8   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

In mathematics, the factorial of a non-negative integer  $n$ , denoted by  $n!$ , is the product of all positive integers less than or equal to  $n$ . For example,

$$5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

$$4! = 4 \times 3 \times 2 \times 1 = 24$$

$$9! = 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 362880$$

Write a program to find the factorial of a given number.

The given number will be passed to the program as an input of type int.

The program is expected to calculate the factorial of the given number and return it as an int type.

Assumptions for this program:

The given input number will always be greater than or equal to 1.

Due to the range supported by int. the input numbers will range from 1 to 12.

**For example:**

| Input | Result |
|-------|--------|
| 5     | 120    |
| 4     | 24     |
| 9     | 362880 |

**Answer:** (penalty regime: 0 %)

```

1 import math
2 x=int(input())
3 result=math.factorial(x)
4 print(result)

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 5     | 120      | 120 | ✓ |
| ✓ | 4     | 24       | 24  | ✓ |

|   | Input | Expected | Got    |   |
|---|-------|----------|--------|---|
| ✓ | 9     | 362880   | 362880 | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 7**

Correct

Mark 1.00 out of 1.00

Given an integer N, check whether N the given number can be made a perfect square after adding to it.

**Input Format:**

Single integer input.

**Output Format:**

Yes or No.

**Example Input:**

24

**Output:**

Yes

**Example Input:**

26

**Output:**

No

**For example:**

| Input | Result |
|-------|--------|
| 24    | Yes    |

**Answer:** (penalty regime: 0 %)

```

1 import math
2 num = int(input())
3 new_num = num + 1
4 diff = new_num - num
5 if math.isqrt(num + diff) ** 2 == (num + diff):
6     print("Yes")
7 else:
8     print("No")

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 24    | Yes      | Yes | ✓ |
| ✓ | 26    | No       | No  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 8**

Correct

Mark 1.00 out of 1.00

Write a program to find the count of non-repeated digits in a given number N. The number will be passed to the program as an input of type int.

Assumption: The input number will be a positive integer number  $\geq 1$  and  $\leq 25000$ .

Some examples are as below.

If the given number is 292, the program should return 1 because there is only 1 non-repeated digit '9' in this number

If the given number is 1015, the program should return 2 because there are 2 non-repeated digits in this number, '0', and '5'.

If the given number is 108, the program should return 3 because there are 3 non-repeated digits in this number, '1', '0', and '8'.

If the given number is 22, the function should return 0 because there are NO non-repeated digits in this number.

**For example:**

| Input | Result |
|-------|--------|
| 292   | 1      |
| 1015  | 2      |
| 108   | 3      |
| 22    | 0      |

**Answer:** (penalty regime: 0 %)

```

1 number = input()
2 count = 0
3 for x in number:
4     if number.count(x) == 1:
5         count += 1
6 print(count)

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 292   | 1        | 1   | ✓ |
| ✓ | 1015  | 2        | 2   | ✓ |
| ✓ | 108   | 3        | 3   | ✓ |
| ✓ | 22    | 0        | 0   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 9**

Correct

Mark 1.00 out of 1.00

Given a number N, find the next perfect square greater than N.

Input Format:

Integer input from stdin.

Output Format:

Perfect square greater than N.

Example Input:

10

Output:

16

**Answer:** (penalty regime: 0 %)

```
1 N = int(input())
2 def next_perfect_square(num):
3     sqrt_num = int(num ** 0.5)
4     next_square = (sqrt_num + 1) ** 2
5     return next_square
6 print(next_perfect_square(N))
```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 10    | 16       | 16  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 10**

Correct

Mark 1.00 out of 1.00

Write a program to find the count of unique digits in a given number N. The number will be passed to the program as an input of type int.

Assumption: The input number will be a positive integer number  $\geq 1$  and  $\leq 25000$ .

For e.g.

If the given number is 292, the program should return 2 because there are only 2 unique digits '2' and '9' in this number

If the given number is 1015, the program should return 3 because there are 3 unique digits in this number, '1', '0', and '5'.

**For example:**

| Input | Result |
|-------|--------|
| 292   | 2      |
| 1015  | 3      |

**Answer:** (penalty regime: 0 %)

```
1 def count_unique_digits(n):
2     unique_digits = set(str(n))
3     return len(unique_digits)
4 num = int(input())
5 print(count_unique_digits(num))
```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | 292   | 2        | 2   | ✓ |
| ✓ | 1015  | 3        | 3   | ✓ |
| ✓ | 123   | 3        | 3   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

◀ Week4\_mcq

[Strings ►](#)

[Dashboard](#) / [My courses](#) / [PSPP/PUP](#) / [Experiments based on Strings and its operations.](#) / [Week5 Coding](#)

|                     |                                 |
|---------------------|---------------------------------|
| <b>Started on</b>   | Tuesday, 23 April 2024, 1:58 PM |
| <b>State</b>        | Finished                        |
| <b>Completed on</b> | Sunday, 28 April 2024, 2:40 PM  |
| <b>Time taken</b>   | 5 days                          |
| <b>Overdue</b>      | 3 days                          |
| <b>Marks</b>        | 10.00/10.00                     |
| <b>Grade</b>        | <b>100.00</b> out of 100.00     |

**Question 1**

Correct

Mark 1.00 out of 1.00

Assume that the given string has enough memory.

Don't use any extra space(IN-PLACE)

**Sample Input 1**

a2b4c6

**Sample Output 1**

aabbbbcccccc

**Answer:** (penalty regime: 0 %)

```

1 def expand_string(input_str):
2     result = ""
3     i = 0
4     while i < len(input_str):
5         char = input_str[i]
6         i += 1
7         count = 0
8         while i < len(input_str) and input_str[i].isdigit():
9             count = count * 10 + int(input_str[i])
10            i += 1
11        result += char * count
12    return result
13 input_str = input()
14 output_str = expand_string(input_str)
15 print(output_str)

```

|   | Input   | Expected           | Got                |   |
|---|---------|--------------------|--------------------|---|
| ✓ | a2b4c6  | aabbbbcccccc       | aabbbbcccccc       | ✓ |
| ✓ | a12b3d4 | aaaaaaaaaaabbddddd | aaaaaaaaaaabbddddd | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Two string values S1, S2 are passed as the input. The program must print first N characters present in S1 which are also present in S2.

**Input Format:**

The first line contains S1.

The second line contains S2.

The third line contains N.

**Output Format:**

The first line contains the N characters present in S1 which are also present in S2.

**Boundary Conditions:**

$2 \leq N \leq 10$

$2 \leq \text{Length of } S1, S2 \leq 1000$

**Example Input/Output 1:**

Input:

abcbde

cdefghbb

3

Output:

bcd

**Note:**

b occurs twice in common but must be printed only once.

**Answer:** (penalty regime: 0 %)

```

1 S1 = input().strip()
2 S2 = input().strip()
3 N = int(input())
4
5 common_chars = []
6 for char in S1:
7     if char in S2 and char not in common_chars:
8         common_chars.append(char)
9     if len(common_chars) == N:
10        break
11 print(''.join(common_chars))
12

```

|   | Input                   | Expected | Got |   |
|---|-------------------------|----------|-----|---|
| ✓ | abcbde<br>cdefghbb<br>3 | bcd      | bcd | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Write a python program to count all letters, digits, and special symbols respectively from a given string

**For example:**

| Input   | Result |
|---------|--------|
| rec@123 | 3      |
|         | 3      |
|         | 1      |

**Answer:** (penalty regime: 0 %)

```

1 input_str = input()
2
3
4 letters = sum(1 for char in input_str if char.isalpha())
5 digits = sum(1 for char in input_str if char.isdigit())
6 specials = sum(1 for char in input_str if not char.isalnum())
7
8 print(letters)
9 print(digits)
10 print(specials)
11

```

|   | Input           | Expected    | Got         |   |
|---|-----------------|-------------|-------------|---|
| ✓ | rec@123         | 3<br>3<br>1 | 3<br>3<br>1 | ✓ |
| ✓ | P@#yn26at^&i5ve | 8<br>3<br>4 | 8<br>3<br>4 | ✓ |
| ✓ | abc@12&         | 3<br>2<br>2 | 3<br>2<br>2 | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

Write a program that takes as input a string (sentence), and returns its second word in uppercase.

For example:

If input is "Wipro Technologies Bangalore" the function should return "TECHNOLOGIES"

If input is "Hello World" the function should return "WORLD"

If input is "Hello" the program should return "LESS"

NOTE 1: If input is a sentence with less than 2 words, the program should return the word "LESS".

NOTE 2: The result should have no leading or trailing spaces.

**For example:**

| Input                        | Result       |
|------------------------------|--------------|
| Wipro Technologies Bangalore | TECHNOLOGIES |
| Hello World                  | WORLD        |
| Hello                        | LESS         |

**Answer:** (penalty regime: 0 %)

```

1 sentence = input().strip()
2 words = sentence.split()
3 if len(words) >= 2:
4     result = words[1].upper()
5 else:
6
7     result = "LESS"
8 print(result)
9

```

|   | Input                        | Expected     | Got          |   |
|---|------------------------------|--------------|--------------|---|
| ✓ | Wipro Technologies Bangalore | TECHNOLOGIES | TECHNOLOGIES | ✓ |
| ✓ | Hello World                  | WORLD        | WORLD        | ✓ |
| ✓ | Hello                        | LESS         | LESS         | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

**Reverse a string without affecting special characters**

Given a string **S**, containing special characters and all the alphabets, reverse the string without affecting the positions of the special characters.

**Input:**

A&amp;B

**Output:**

B&amp;A

**Explanation:** As we ignore '&' and

As we ignore '&amp;' and then reverse, so answer is "B&amp;A".

**For example:**

| Input | Result |
|-------|--------|
| A&x#  | x&A#   |

**Answer:** (penalty regime: 0 %)

```

1 S = input().strip()
2 S_list = list(S)
3 left = 0
4 right = len(S_list) - 1
5 while left < right:
6     if S_list[left].isalpha() and S_list[right].isalpha():
7         S_list[left], S_list[right] = S_list[right], S_list[left]
8         left += 1
9         right -= 1
10    elif not S_list[left].isalpha():
11        left += 1
12    elif not S_list[right].isalpha():
13        right -= 1
14 result = ''.join(S_list)
15 print(result)

```

|   | Input | Expected | Got |   |
|---|-------|----------|-----|---|
| ✓ | A&B   | B&A      | B&A | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

Write a program to check if two strings are balanced. For example, strings s1 and s2 are balanced if all the characters in the s1 are present in s2. The character's position doesn't matter. If balanced display as "true" ,otherwise "false".

**For example:**

| Input     | Result |
|-----------|--------|
| Yn        | True   |
| PYNnative |        |

**Answer:** (penalty regime: 0 %)

```

1 def are_strings_balanced(s1, s2):
2     set_s1 = set(s1)
3     set_s2 = set(s2)
4     return set_s1.issubset(set_s2)
5 s1 = input()
6 s2 = input()
7
8 if are_strings_balanced(s1, s2):
9     print("True")
10 else:
11     print("False")
12

```

|   | Input            | Expected | Got   |   |
|---|------------------|----------|-------|---|
| ✓ | Yn<br>PYNnative  | True     | True  | ✓ |
| ✓ | Ynf<br>PYNnative | False    | False | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 7**

Correct

Mark 1.00 out of 1.00

Given two Strings s1 and s2, remove all the characters from s1 which is present in s2.

**Constraints**

1<= string length <= 200

**Sample Input 1**

experience  
enc

**Sample Output 1**

xpri

**Answer:** (penalty regime: 0 %)

```
1 s1 = input()  
2 s2 = input()  
3 s2_set = set(s2)  
4 result = ''.join(char for char in s1 if char not in s2_set)  
5  
6 print(result)  
7
```

|   | <b>Input</b>      | <b>Expected</b> | <b>Got</b> |   |
|---|-------------------|-----------------|------------|---|
| ✓ | experience<br>enc | xpri            | xpri       | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 8**

Correct

Mark 1.00 out of 1.00

Given a string S which is of the format USERNAME@DOMAIN.EXTENSION, the program must print the EXTENSION, DOMAIN, USERNAME in the reverse order.

**Input Format:**

The first line contains S.

**Output Format:**

The first line contains EXTENSION.

The second line contains DOMAIN.

The third line contains USERNAME.

**Boundary Condition:**

1 <= Length of S <= 100

**Example Input/Output 1:**

Input:

abcd@gmail.com

Output:

com

gmail

abcd

**Answer:** (penalty regime: 0 %)

```
1 a=input("")
2 if not 1<=len(a)<=100:
3     exit()
4 parts=a.split('@')
5 if len(parts)!=2:
6     exit()
7 username=parts[0]
8 domainpart=parts[1].split('.')
9 if len(domainpart)<2:
10    exit()
11 domain=domainpart[0]
12 extension='.'.join(domainpart[1:])
13 print(extension)
14 print(domain)
15 print(username)
```

|   | Input          | Expected             | Got                  |   |
|---|----------------|----------------------|----------------------|---|
| ✓ | abcd@gmail.com | com<br>gmail<br>abcd | com<br>gmail<br>abcd | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

### Question 9

Correct

Mark 1.00 out of 1.00

String should contain only the words are not palindrome.

#### Sample Input 1

Malayalam is my mother tongue

#### Sample Output 1

is my mother tongue

**Answer:** (penalty regime: 0 %)

```
1 def remove_palindromes(sentence):
2     return [word for word in sentence.lower().split() if word != word[::-1]]
3 sentence = input()
4 print(*remove_palindromes(sentence))
```

|   | Input                         | Expected            | Got                 |   |
|---|-------------------------------|---------------------|---------------------|---|
| ✓ | Malayalam is my mother tongue | is my mother tongue | is my mother tongue | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 10**

Correct

Mark 1.00 out of 1.00

In this exercise, you will create a program that reads words from the user until the user enters a blank line. After the user enters a blank line your program should display each word entered by the user exactly once. The words should be displayed in the same order that they were first entered. For example, if the user enters:

first

second

first

third

second

then your program should display:

first

second

third

**Answer:** (penalty regime: 0 %)

```

1 words = []
2 while True:
3     try:
4         word = input().strip()
5         if not word:
6             break
7         if word not in words:
8             words.append(word)
9     except EOFError:
10        break
11 print(*words, sep='\n')

```

|   | <b>Input</b>                                | <b>Expected</b>          | <b>Got</b>               |   |
|---|---|--------------------------|--------------------------|---|
| ✓ | first<br>second<br>first<br>third<br>second | first<br>second<br>third | first<br>second<br>third | ✓ |
| ✓ | rec<br>cse<br>it<br>rec<br>cse              | rec<br>cse<br>it         | rec<br>cse<br>it         | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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|                     |                                |
|---------------------|--------------------------------|
| <b>Started on</b>   | Thursday, 9 May 2024, 10:37 AM |
| <b>State</b>        | Finished                       |
| <b>Completed on</b> | Sunday, 12 May 2024, 3:01 PM   |
| <b>Time taken</b>   | 3 days 4 hours                 |
| <b>Overdue</b>      | 1 day 4 hours                  |
| <b>Marks</b>        | 10.00/10.00                    |
| <b>Grade</b>        | <b>100.00</b> out of 100.00    |

**Question 1**

Correct

Mark 1.00 out of 1.00

Complete the program to count frequency of each element of an array. Frequency of a particular element will be printed once.

Sample Test Cases

Test Case 1

Input

```
7  
23  
45  
45  
23  
56  
45  
23  
40
```

Output

```
23 occurs 3 times  
45 occurs 2 times  
56 occurs 1 times  
40 occurs 1 times
```

**Answer:** (penalty regime: 0 %)

```
1 def count_frequency(arr):  
2     freq_counter = {}  
3  
4     # Count the frequency of each element  
5     for num in arr:  
6         if num in freq_counter:  
7             freq_counter[num] += 1  
8         else:  
9             freq_counter[num] = 1  
10  
11    # Print the frequency of each element  
12    for num, freq in freq_counter.items():  
13        print(f"{num} occurs {freq} times")  
14  
15 # Test Case  
16 if __name__ == "__main__":  
17     n = int(input()) # Number of elements in the array  
18     arr = [int(input()) for _ in range(n)] # Array elements  
19  
20     # Count frequency of each element  
21     count_frequency(arr)
```

|   | Input                                       | Expected   | Got  |   |
|---|---|--|--|---|
| ✓ | 7<br>23<br>45<br>23<br>56<br>45<br>23<br>40 | 23 occurs 3 times<br>45 occurs 2 times<br>56 occurs 1 times<br>40 occurs 1 times | 23 occurs 3 times<br>45 occurs 2 times<br>56 occurs 1 times<br>40 occurs 1 times | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Write a Python program to Zip two given lists of lists.

Input:

m : row size

n: column size

list1 and list 2 : Two lists

Output

Zipped List : List which combined both list1 and list2

Sample test case

Sample input

2

2

1

3

5

7

2

4

6

8

Sample Output

[[1, 3, 2, 4], [5, 7, 6, 8]]

**Answer:** (penalty regime: 0 %)

```
1 def zip_lists(list1, list2):
2     return [sublist1 + sublist2 for sublist1, sublist2 in zip(list1, list2)]
3
4 def main():
5     m = int(input())
6     n = int(input())
7
8     list1 = [[int(input()) for _ in range(n)] for _ in range(m)]
9
10
11    list2 = [[int(input()) for _ in range(n)] for _ in range(m)]
12
13    zipped_list = zip_lists(list1, list2)
14
15    print(zipped_list)
16
17 if __name__ == "__main__":
18     main()
19
```

|   | Input  | Expected                     | Got                          |   |
|---|--|------------------------------|------------------------------|---|
| ✓ | 2<br>2<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8 | [[1, 2, 5, 6], [3, 4, 7, 8]] | [[1, 2, 5, 6], [3, 4, 7, 8]] | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Consider a program to insert an element / item in the sorted array. Complete the logic by filling up required code in editable section. Consider an array of size 10. The eleventh item is the data is to be inserted.

**Sample Test Cases****Test Case 1****Input**

```
1  
3  
4  
5  
6  
7  
8  
9  
10  
11  
2
```

**Output**

ITEM to be inserted:2

After insertion array is:

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11
```

**Test Case 2****Input**

```
11  
22  
33  
55  
66  
77  
88  
99  
110  
120  
44
```

**Output**

ITEM to be inserted:44

After insertion array is:

```
11
22
33
44
55
66
77
88
99
110
120
```

**Answer:** (penalty regime: 0 %)

```
1 def sort(arr):
2     n=len(arr)
3     for i in range(n):
4         for j in range(0,n-i-1):
5             if arr[j]>arr[j+1]:
6                 arr[j],arr[j+1]=arr[j+1],arr[j]
7
8     return arr
9 n=10
10 arr=[]
11 for i in range(n):
12     element=int(input())
13     arr.append(element)
14 add=int(input())
15 print(f"ITEM to be inserted:{add}")
16 arr.append(add)
17 sorted_arr=sort(arr)
18 print("After insertion array is:")
19 for i in range(len(sorted_arr)):
20     print(sorted_arr[i])
```

|   | Input   | Expected  | Got   |   |
|---|---|---|---|---|
| ✓ | 1<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>2 | ITEM to be inserted:2<br>After insertion array is:<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11 | ITEM to be inserted:2<br>After insertion array is:<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11 | ✓ |

|   | <b>Input</b>   | <b>Expected</b>   | <b>Got</b>  |   |
|---|--|---|---|---|
| ✓ | 11<br>22<br>33<br>55<br>66<br>77<br>88<br>99<br>110<br>120<br>44 | ITEM to be inserted:44<br>After insertion array is:<br>11<br>22<br>33<br>44<br>55<br>66<br>77<br>88<br>99<br>110<br>120 | ITEM to be inserted:44<br>After insertion array is:<br>11<br>22<br>33<br>44<br>55<br>66<br>77<br>88<br>99<br>110<br>120 | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

Write a program to print all the locations at which a particular element (taken as input) is found in a [list](#) and also print the total number of times it occurs in the [list](#). The location starts from 1.

For example, if there are 4 elements in the array:

5  
6  
5  
7

If the element to search is 5 then the output will be:

5 is present at location 1  
5 is present at location 3  
5 is present 2 times in the array.

**Sample Test Cases****Test Case 1****Input**

4  
5  
6  
5  
7  
5

**Output**

5 is present at location 1.  
5 is present at location 3.  
5 is present 2 times in the array.

**Test Case 2****Input**

5  
67  
80  
45  
97  
100  
50

**Output**

50 is not present in the array.

**Answer:** (penalty regime: 0 %)

```
1
2 v def find_element_locations(arr, target):
3     locations = [] # List to store locations where target is found
```

```

4     count = 0 # Variable to store the count of occurrences
5
6     for i, num in enumerate(arr, start=1): # Loop through the array with 1-based indexing
7         if num == target:
8             locations.append(i) # Append the location to the list
9             count += 1 # Increment the count
10
11    if count > 0:
12        # Print each location and count of occurrences separately
13        for location in locations:
14            print(f"{target} is present at location {location}.")
15        print(f"{target} is present {count} times in the array.")
16    else:
17        print(f"{target} is not present in the array.")
18
19 # Test Case
20 if __name__ == "__main__":
21     n = int(input()) # Input: number of elements in the array
22     arr = [int(input()) for _ in range(n)] # Input: array elements
23     target = int(input()) # Input: element to search
24
25     find_element_locations(arr, target)
26
27

```

|   | Input                                  | Expected   | Got  |   |
|---|--|--|--|---|
| ✓ | 4<br>5<br>6<br>5<br>7<br>5             | 5 is present at location 1.<br>5 is present at location 3.<br>5 is present 2 times in the array. | 5 is present at location 1.<br>5 is present at location 3.<br>5 is present 2 times in the array. | ✓ |
| ✓ | 5<br>67<br>80<br>45<br>97<br>100<br>50 | 50 is not present in the array.  | 50 is not present in the array.  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

Output is a merged array without duplicates.

**Input Format**

N1 - no of elements in array 1

Array elements for array 1

N2 - no of elements in array 2

Array elements for array2

**Output Format**

Display the merged array

**Sample Input 1**

```
5  
1  
2  
3  
6  
9  
4  
2  
4  
5  
10
```

**Sample Output 1**

```
1 2 3 4 5 6 9 10
```

**Answer:** (penalty regime: 0 %)

```
1 N1 = int(input())  
2 array1 = [int(input()) for _ in range(N1)]  
3 N2 = int(input())  
4 array2 = [int(input()) for _ in range(N2)]  
5 merged_array = list(set(array1 + array2))  
6 merged_array.sort()  
7 print(*merged_array)
```

|   | <b>Input</b>  | <b>Expected</b>                  | <b>Got</b>                       |   |
|---|---|----------------------------------|----------------------------------|---|
| ✓ | 5<br>1<br>2<br>3<br>6<br>9<br>4<br>2<br>4<br>5<br>10  | 1 2 3 4 5 6 9 10                 | 1 2 3 4 5 6 9 10                 | ✓ |
| ✓ | 7<br>4<br>7<br>8<br>10<br>12<br>30<br>35<br>9<br>1<br>3<br>4<br>5<br>7<br>8<br>11<br>13<br>22 | 1 3 4 5 7 8 10 11 12 13 22 30 35 | 1 3 4 5 7 8 10 11 12 13 22 30 35 | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 6**

Correct

Mark 1.00 out of 1.00

Given an array of numbers, find the index of the smallest array element (the pivot), for which the sums of all elements to the left and to the right are equal. The array may not be reordered.

**Example**

arr=[1,2,3,4,6]

- the sum of the first three elements,  $1+2+3=6$ . The value of the last element is 6.
- Using zero based indexing, arr[3]=4 is the pivot between the two subarrays.
- The index of the pivot is 3.

**Constraints**

- $3 \leq n \leq 10^5$
- $1 \leq arr[i] \leq 2 \times 10^4$ , where  $0 \leq i < n$
- It is guaranteed that a solution always exists.

The first line contains an integer n, the size of the array arr.

Each of the next n lines contains an integer, arr[i], where  $0 \leq i < n$ .**Sample Case 0****Sample Input 0**

```
4
1
2
3
3
```

**Sample Output 0**

```
2
```

**Explanation 0**

- The sum of the first two elements,  $1+2=3$ . The value of the last element is 3.
- Using zero based indexing, arr[2]=3 is the pivot between the two subarrays.
- The index of the pivot is 2.

**Sample Case 1****Sample Input 1**

```
3
1
2
1
```

**Sample Output 1**

```
1
```

**Explanation 1**

- The first and last elements are equal to 1.
- Using zero based indexing, arr[1]=2 is the pivot between the two subarrays.

- The index of the pivot is 1.

**For example:**

| Input | Result |
|-------|--------|
| 4     | 2      |
| 1     |        |
| 2     |        |
| 3     |        |
| 3     |        |
| 3     | 1      |
| 1     |        |
| 2     |        |
| 1     |        |

**Answer:** (penalty regime: 0 %)

```

1 def find_pivot_index(n, arr):
2
3     total_sum = sum(arr)
4     left_sum = 0
5     for i in range(n):
6
7         total_sum -= arr[i]
8
9         if left_sum == total_sum:
10            return i
11
12
13         left_sum += arr[i]
14
15
16     return -1
17 n = int(input())
18 arr = [int(input()) for _ in range(n)]
19
20 pivot_index = find_pivot_index(n, arr)
21
22
23 print(pivot_index)
24

```

|   | Input                 | Expected | Got |   |
|---|-----------------------|----------|-----|---|
| ✓ | 4<br>1<br>2<br>3<br>3 | 2        | 2   | ✓ |
| ✓ | 3<br>1<br>2<br>1      | 1        | 1   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 7**

Correct

Mark 1.00 out of 1.00

Given an array A of sorted integers and another non negative integer k, find if there exists 2 indices i and j such that  $A[i] - A[j] = k$ ,  $i \neq j$ .

**Input Format**

1. First line is number of test cases T. Following T lines contain:
2. N, followed by N integers of the array
3. The non-negative integer k

**Output format**

Print 1 if such a pair exists and 0 if it doesn't.

**Example**

**Input**

```
1
3
1
3
5
4
```

**Output:**

```
1
```

**Input**

```
1
3
1
3
5
99
```

**Output**

```
0
```

**For example:**

| Input                       | Result |
|-----------------------------|--------|
| 1<br>3<br>1<br>3<br>5<br>4  | 1      |
| 1<br>3<br>1<br>3<br>5<br>99 | 0      |

**Answer:** (penalty regime: 0 %)

```

1 def find_indices_with_difference(arr,k):
2     seen = set()
3     for num in arr:
4         if num - k in seen:
5             return 1
6         seen.add(num)
7     return 0
8 T = int(input())
9 for _ in range(T):
10    N = int(input())
11    array = []
12    for _ in range(N):
13        array.append(int(input()))
14    k = int(input())
15    result = find_indices_with_difference(array, k)
16    print(result)
17
18
19

```

|   | Input                       | Expected | Got |   |
|---|-----------------------------|----------|-----|---|
| ✓ | 1<br>3<br>1<br>3<br>5<br>4  | 1        | 1   | ✓ |
| ✓ | 1<br>3<br>1<br>3<br>5<br>99 | 0        | 0   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 8**

Correct

Mark 1.00 out of 1.00

Program to print all the distinct elements in an array. Distinct elements are nothing but the unique (non-duplicate) elements present in the given array.

**Input Format:**

First line take an Integer input from stdin which is array length n.

Second line take n Integers which is inputs of array.

**Output Format:**

Print the Distinct Elements in Array in single line which is space Separated

**Example Input:**

```
5
1
2
2
3
4
```

**Output:**

```
1 2 3 4
```

**Example Input:**

```
6
1
1
2
2
3
3
```

**Output:**

```
1 2 3
```

**For example:**

| Input                           | Result  |
|---------------------------------|---------|
| 5<br>1<br>2<br>2<br>3<br>4      | 1 2 3 4 |
| 6<br>1<br>1<br>2<br>2<br>3<br>3 | 1 2 3   |

**Answer:** (penalty regime: 0 %)

```
1 n = int(input())
2 arr = [int(input()) for _ in range(n)]
3 distinct_elements = set(arr)
4 print(*distinct_elements)
```

|   | Input                           | Expected | Got     |   |
|---|---------------------------------|----------|---------|---|
| ✓ | 5<br>1<br>2<br>2<br>3<br>4      | 1 2 3 4  | 1 2 3 4 | ✓ |
| ✓ | 6<br>1<br>1<br>2<br>2<br>3<br>3 | 1 2 3    | 1 2 3   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 9**

Correct

Mark 1.00 out of 1.00

Determine the factors of a number (i.e., all positive integer values that evenly divide into a number) and then return the  $p^{\text{th}}$  element of the [list](#), sorted ascending. If there is no  $p^{\text{th}}$  element, return 0.

**Example**

n = 20

p = 3

The factors of 20 in ascending order are {1, 2, 4, 5, 10, 20}. Using 1-based indexing, if  $p = 3$ , then 4 is returned. If  $p > 6$ , 0 would be returned.

**Constraints** $1 \leq n \leq 10^{15}$  $1 \leq p \leq 10^9$ 

The first line contains an integer n, the number to factor.

The second line contains an integer p, the 1-based index of the factor to return.

**Sample Case 0****Sample Input 0**

10

3

**Sample Output 0**

5

**Explanation 0**

Factoring  $n = 10$  results in {1, 2, 5, 10}. Return the  $p = 3^{\text{rd}}$  factor, 5, as the answer.

**Sample Case 1****Sample Input 1**

10

5

**Sample Output 1**

0

**Explanation 1**

Factoring  $n = 10$  results in {1, 2, 5, 10}. There are only 4 factors and  $p = 5$ , therefore 0 is returned as the answer.

**Sample Case 2****Sample Input 2**

1

1

**Sample Output 2**

1

**Explanation 2**

Factoring  $n = 1$  results in {1}. The  $p = 1^{\text{st}}$  factor of 1 is returned as the answer.

**For example:**

| Input   | Result |
|---------|--------|
| 10<br>3 | 5      |
| 10<br>5 | 0      |
| 1<br>1  | 1      |

**Answer:** (penalty regime: 0 %)

```

1 def find_factors(n):
2     factors = []
3     for i in range(1, int(n**0.5) + 1):
4         if n % i == 0:
5             factors.append(i)
6             if i != n // i:
7                 factors.append(n // i)
8     return sorted(factors)
9
10 def find_pth_factor(n, p):
11     factors = find_factors(n)
12     if p > len(factors):
13         return 0
14     return factors[p - 1]
15
16 n = int(input())
17 p = int(input())
18
19 print(find_pth_factor(n, p))
20

```

|   | Input   | Expected | Got |   |
|---|---------|----------|-----|---|
| ✓ | 10<br>3 | 5        | 5   | ✓ |
| ✓ | 10<br>5 | 0        | 0   | ✓ |
| ✓ | 1<br>1  | 1        | 1   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 10**

Correct

Mark 1.00 out of 1.00

Write a Python program to check if a given list is strictly increasing or not. Moreover, If removing only one element from the list results in a strictly increasing list, we still consider the list true

Input:

n : Number of elements

List1: List of values

Output

Print "True" if list is strictly increasing or decreasing else print "False"

Sample Test Case

Input

```
7
1
2
3
0
4
5
6
```

Output

True

**Answer:** (penalty regime: 0 %)

```
1 def is_strictly_increasing(lst):
2     increasing = all(lst[i] < lst[i + 1] for i in range(len(lst) - 1))
3     decreasing = all(lst[i] > lst[i + 1] for i in range(len(lst) - 1))
4
5     return increasing or decreasing
6
7 def is_strictly_increasing_with_one_removed(lst):
8     for i in range(len(lst)):
9         temp_list = lst[:i] + lst[i+1:]
10    if is_strictly_increasing(temp_list):
11        return True
12
13    return False
14 if __name__ == "__main__":
15     n = int(input())
16     lst = [int(input()) for _ in range(n)]
17
18
19 if is_strictly_increasing(lst) or is_strictly_increasing_with_one_removed(lst):
20     print("True")
21 else:
22     print("False")
```

|   | Input                                | Expected | Got  |   |
|---|--------------------------------------|----------|------|---|
| ✓ | 7<br>1<br>2<br>3<br>0<br>4<br>5<br>6 | True     | True | ✓ |
| ✓ | 4<br>2<br>1<br>0<br>-1               | True     | True | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

◀ Week6\_MCQ

Jump to...



Tuples ►

[Dashboard](#) / [My courses](#) / [PSPP/PUP](#) / [Experiments based on Tuples, Sets and its operations](#) / [Week7 Coding](#)

|                     |                                 |
|---------------------|---------------------------------|
| <b>Started on</b>   | Tuesday, 21 May 2024, 1:43 PM   |
| <b>State</b>        | Finished                        |
| <b>Completed on</b> | Wednesday, 22 May 2024, 2:02 PM |
| <b>Time taken</b>   | 1 day                           |
| <b>Marks</b>        | 5.00/5.00                       |
| <b>Grade</b>        | <b>100.00</b> out of 100.00     |

**Question 1**

Correct

Mark 1.00 out of 1.00

Coders here is a simple task for you, Given string str. Your task is to check whether it is a binary string or not by using python [set](#).

**Examples:**

Input: str = "01010101010"

Output: Yes

Input: str = "REC101"

Output: No

**For example:**

| Input        | Result |
|--------------|--------|
| 01010101010  | Yes    |
| 010101 10101 | No     |

**Answer:** (penalty regime: 0 %)

```

1 def is_binary_string(s):
2     binary_set = {'0', '1'}
3     return set(s).issubset(binary_set)
4
5 def main():
6     s = input().strip()
7     if is_binary_string(s):
8         print("Yes")
9     else:
10        print("No")
11
12 if __name__ == "__main__":
13     main()
14

```

|   | Input        | Expected | Got |   |
|---|--------------|----------|-----|---|
| ✓ | 01010101010  | Yes      | Yes | ✓ |
| ✓ | REC123       | No       | No  | ✓ |
| ✓ | 010101 10101 | No       | No  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Write a program to eliminate the common elements in the given 2 arrays and print only the non-repeating elements and the total number of such non-repeating elements.

**Input Format:**

The first line contains space-separated values, denoting the size of the two arrays in integer format respectively.

The next two lines contain the space-separated integer arrays to be compared.

Sample Input:

```
5 4
1 2 8 6 5
2 6 8 10
```

Sample Output:

```
1 5 10
3
```

Sample Input:

```
5 5
1 2 3 4 5
1 2 3 4 5
```

Sample Output:

NO SUCH ELEMENTS

**For example:**

| Input     | Result |
|-----------|--------|
| 5 4       | 1 5 10 |
| 1 2 8 6 5 | 3      |
| 2 6 8 10  |        |

**Answer:** (penalty regime: 0 %)

```
1 def eliminate_common_elements(arr1, arr2):
2     unique_elements = set(arr1).symmetric_difference(set(arr2))
3     if unique_elements:
4         print(*unique_elements)
5         print(len(unique_elements))
6     else:
7         print("NO SUCH ELEMENTS")
8 size1, size2 = map(int, input().split())
9 array1 = tuple(map(int, input().split()))
10 array2 = tuple(map(int, input().split()))
11
12 eliminate_common_elements(array1, array2)
13
```

|   | Input                        | Expected         | Got         |   |
|---|------------------------------|------------------|-------------|---|
| ✓ | 5 4<br>1 2 8 6 5<br>2 6 8 10 | 1 5 10<br>3<br>3 | 1 5 10<br>3 | ✓ |
| ✓ | 3 3<br>10 10 10<br>10 11 12  | 11 12<br>2<br>2  | 11 12<br>2  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

The **DNA sequence** is composed of a series of nucleotides abbreviated as '**A**', '**C**', '**G**', and '**T**'.

- For example, "**ACGAATTCCG**" is a **DNA sequence**.

When studying **DNA**, it is useful to identify repeated sequences within the DNA.

Given a string **s** that represents a **DNA sequence**, return all the **10-letter-long** sequences (substrings) that occur more than once in a DNA molecule. You may return the answer in **any order**.

**Example 1:**

**Input:** s = "AAAAAACCCTTAAACCCCCCAAAAGGGTTT"

**Output:** ["AAAAAACCCTT", "CCCCCAAAAGGGTTT"]

**Example 2:**

**Input:** s = "AAAAAAAAAAAAAA"

**Output:** ["AAAAAAAAAA"]

**For example:**

| Input                          | Result                         |
|--------------------------------|--------------------------------|
| AAAAAACCCTTAAACCCCCCAAAAGGGTTT | AAAAAACCCTT<br>CCCCCAAAAGGGTTT |

**Answer:** (penalty regime: 0 %)

```

1 s = input()
2 A = set()
3 B = set()
4 for i in range(len(s) - 9):
5     C = s[i:i + 10]
6     if C in A:
7         B.add(C)
8     else:
9         A.add(C)
10 for seq in B:
11     print(seq)
12
13

```

|   | Input                          | Expected                       | Got                            |   |
|---|--------------------------------|--------------------------------|--------------------------------|---|
| ✓ | AAAAAACCCTTAAACCCCCCAAAAGGGTTT | AAAAAACCCTT<br>CCCCCAAAAGGGTTT | AAAAAACCCTT<br>CCCCCAAAAGGGTTT | ✓ |

|   | Input          | Expected   | Got        |   |
|---|----------------|------------|------------|---|
| ✓ | AAAAAAAAAAAAAA | AAAAAAAAAA | AAAAAAAAAA | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

There is a malfunctioning keyboard where some letter keys do not work. All other keys on the keyboard work properly.

Given a string text of words separated by a single space (no leading or trailing spaces) and a string brokenLetters of all distinct letter keys that are broken, return the number of words in text you can fully type using this keyboard.

Example 1:

Input: text = "hello world", brokenLetters = "ad"

Output:

1

Explanation: We cannot type "world" because the 'd' key is broken.

**For example:**

| Input  | Result |
|--|--------|
| hello world<br>ad                              | 1      |
| Faculty Upskilling in Python Programming<br>ak | 2      |

**Answer:** (penalty regime: 0 %)

```

1 a=input()
2 b=input()
3 c=[]
4 for char in a:
5     if char in b and char not in c:
6         c.append(char)
7 results="".join(c)
8 res=len(c)
9 print(res)

```

|   | Input  | Expected | Got |   |
|---|--|----------|-----|---|
| ✓ | hello world<br>ad                              | 1        | 1   | ✓ |
| ✓ | Welcome to REC<br>e                            | 1        | 1   | ✓ |
| ✓ | Faculty Upskilling in Python Programming<br>ak | 2        | 2   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

Given an array of integers `nums` containing  $n + 1$  integers where each integer is in the range  $[1, n]$  inclusive. There is only **one repeated number** in `nums`, return *this repeated number*. Solve the problem using `set`.

**Example 1:****Input:** `nums = [1,3,4,2,2]`**Output:** 2**Example 2:****Input:** `nums = [3,1,3,4,2]`**Output:** 3**For example:**

| Input     | Result |
|-----------|--------|
| 1 3 4 4 2 | 4      |

**Answer:** (penalty regime: 0 %)

```

1 | def find_duplicate(nums):
2 |     seen = set()
3 |     for num in nums:
4 |         if num in seen:
5 |             return num
6 |         seen.add(num)
7 | nums = list(map(int, input().split()))
8 | print(find_duplicate(nums))
9 |

```

|   | Input           | Expected | Got |   |
|---|-----------------|----------|-----|---|
| ✓ | 1 3 4 4 2       | 4        | 4   | ✓ |
| ✓ | 1 2 2 3 4 5 6 7 | 2        | 2   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

[◀ Week7\\_MCQ](#) ▼[Dictionary ►](#)

[Dashboard](#) / [My courses](#) / [PSPP/PUP](#) / [Experiments based on Dictionary and its operations.](#) / [Week8 Coding](#)

|                     |                                |
|---------------------|--------------------------------|
| <b>Started on</b>   | Thursday, 6 June 2024, 7:04 PM |
| <b>State</b>        | Finished                       |
| <b>Completed on</b> | Friday, 7 June 2024, 10:14 AM  |
| <b>Time taken</b>   | 15 hours 10 mins               |
| <b>Marks</b>        | 5.00/5.00                      |
| <b>Grade</b>        | <b>100.00</b> out of 100.00    |

**Question 1**

Correct

Mark 1.00 out of 1.00

Given an array of names of candidates in an election. A candidate name in the array represents a vote cast to the candidate. Print the name of candidates received Max vote. If there is tie, print a lexicographically smaller name.

**Examples:**

```
Input : votes[] = {"john", "johnny", "jackie",
                  "johnny", "john", "jackie",
                  "jamie", "jamie", "john",
                  "johnny", "jamie", "johnny",
                  "john"};
```

Output : John

We have four Candidates with name as 'John', 'Johnny', 'jamie', 'jackie'. The candidates John and Johny get maximum votes. Since John is alphabetically smaller, we print it. Use [dictionary](#) to solve the above problem

**Sample Input:**

```
10
John
John
Johny
Jamie
Jamie
Johny
Jack
Johny
Johny
Jackie
```

**Sample Output:**

Johny

|  |
|--|
|  |
|  |
|  |
|  |
|  |

**Answer:** (penalty regime: 0 %)

```
1 A = [input() for _ in range(int(input()))]
2 R = Sname. A count(name) for name in set(A)]
```

```
1 d = {name: A.count(name) for name in setA}
2 print(min(name for name, count in B.items() if count == max(B.values())))
3
4
5
```

|   | Input   | Expected | Got   |   |
|---|---|----------|-------|---|
| ✓ | 10<br>John<br>John<br>Johny<br>Johny<br>Jamie<br>Jamie<br>Johny<br>Jack<br>Johny<br>Johny<br>Jackie | Johny    | Johny | ✓ |
| ✓ | 6<br>Ida<br>Ida<br>Ida<br>Kiruba<br>Kiruba<br>Kiruba  | Ida      | Ida   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

Create a student dictionary for n students with the student name as key and their test mark assignment mark and lab mark as values. Do the following computations and display the result.

- 1.Identify the student with the highest average score
- 2.Identify the student who has the highest Assignment marks
- 3.Identify the student with the Lowest lab marks
- 4.Identify the student with the lowest average score

Note:

If more than one student has the same score display all the student names

Sample input:

```
4
James 67 89 56
Lalith 89 45 45
Ram 89 89 89
Sita 70 70 70
```

Sample Output:

```
Ram
James Ram
Lalith
Lalith
```

**For example:**

| Input           | Result    |
|-----------------|-----------|
| 4               | Ram       |
| James 67 89 56  | James Ram |
| Lalith 89 45 45 | Lalith    |
| Ram 89 89 89    | Lalith    |
| Sita 70 70 70   |           |

**Answer:** (penalty regime: 0 %)

```
1 n = int(input())
2 students = {}
3 for _ in range(n):
4     name, test, assignment, lab = input().split()
5     students[name] = {'test': int(test), 'assignment': int(assignment), 'lab': int(lab)}
6 averages = {name: sum(info.values()) / 3 for name, info in students.items()}
7
8 a = max(averages.values())
9 A = sorted([name for name, avg in averages.items() if avg == a])
10
11 b = max((info['assignment'] for info in students.values()))
12 B = sorted([name for name, info in students.items() if info['assignment'] == b])
```

```
12 D = sorted([name for name, info in students.items() if info['lab'] == v])
13
14 c = min((info['lab'] for info in students.values()))
15 C = sorted([name for name, info in students.items() if info['lab'] == c])
16
17 d = min(averages.values())
18 D = sorted([name for name, avg in averages.items() if avg == d])
19
20 print('\n'.join([" ".join(A), " ".join(B), " ".join(C), " ".join(D)]))
```

|   | Input   | Expected                                       | Got  |   |
|---|---|--|--|---|
| ✓ | 4<br>James 67 89 56<br>Lalith 89 45 45<br>Ram 89 89 89<br>Sita 70 70 70 | Ram<br>James Ram<br>Lalith<br>Lalith<br>Lalith | Ram<br>James Ram<br>Lalith<br>Lalith<br>Lalith | ✓ |
| ✓ | 3<br>Raja 95 67 90<br>Aarav 89 90 90<br>Shadhana 95 95 91               | Shadhana<br>Shadhana<br>Aarav Raja             | Shadhana<br>Shadhana<br>Aarav Raja<br>Raja     | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Give a dictionary with value lists, sort the keys by summation of values in value list.

**Input :** test\_dict = {'Gfg' : [6, 7, 4], 'best' : [7, 6, 5]}

**Output :** {'Gfg': 17, 'best': 18}

**Explanation :** Sorted by sum, and replaced.

**Input :** test\_dict = {'Gfg' : [8,8], 'best' : [5,5]}

**Output :** {'best': 10, 'Gfg': 16}

**Explanation :** Sorted by sum, and replaced.

Sample Input:

2

Gfg 6 7 4

Best 7 6 5

Sample Output

Gfg 17

Best 18

**For example:**

| Input      | Result  |
|------------|---------|
| 2          |         |
| Gfg 6 7 4  | Gfg 17  |
| Best 7 6 5 | Best 18 |

**Answer:** (penalty regime: 0 %)

```

1 n = int(input())
2 test_dict = {key: sum(map(int, values)) for key, *values in (input().split() for _ in range(n))}
3 sorted_dict = {key: value for key, value in sorted(test_dict.items(), key=lambda x: x[1])}
4 for key, value in sorted_dict.items():
5     print(key, value)
6

```

|   | Input                        | Expected          | Got               |   |
|---|------------------------------|-------------------|-------------------|---|
| ✓ | 2<br>Gfg 6 7 4<br>Best 7 6 5 | Gfg 17<br>Best 18 | Gfg 17<br>Best 18 | ✓ |
| ✓ | 2<br>Gfg 6 6<br>Best 5 5     | Best 10<br>Gfg 12 | Best 10<br>Gfg 12 | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

A sentence is a string of single-space separated words where each word consists only of lowercase letters. A word is uncommon if it appears exactly once in one of the sentences, and does not appear in the other sentence.

Given two sentences s1 and s2, return a [list](#) of all the uncommon words. You may return the answer in any order.

**Example 1:**

Input: s1 = "this apple is sweet", s2 = "this apple is sour"

Output: ["sweet", "sour"]

**Example 2:**

Input: s1 = "apple apple", s2 = "banana"

Output: ["banana"]

**Constraints:**

1 <= s1.length, s2.length <= 200

s1 and s2 consist of lowercase English letters and spaces.

s1 and s2 do not have leading or trailing spaces.

All the words in s1 and s2 are separated by a single space.

**Note:**

Use [dictionary](#) to solve the problem

**For example:**

| Input               | Result     |
|---------------------|------------|
| this apple is sweet | sweet sour |
| this apple is sour  |            |

**Answer:** (penalty regime: 0 %)

```

1 | s1, s2 = input().split(), input().split()
2 | c1, c2 = {}, {}
3 | for w in s1: c1[w] = c1.get(w, 0) + 1
4 | for w in s2: c2[w] = c2.get(w, 0) + 1
5 | A = [w for w, c in c1.items() if c == 1 and w not in c2]
6 | A += [w for w, c in c2.items() if c == 1 and w not in c1]
7 | print(*A, end=' ')
8 |

```

|   | Input                                     | Expected   | Got        |   |
|---|---|------------|------------|---|
| ✓ | this apple is sweet<br>this apple is sour | sweet sour | sweet sour | ✓ |
| ✓ | apple apple<br>banana                     | banana     | banana     | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

In the game of Scrabble™, each letter has points associated with it. The total score of a word is the sum of the scores of its letters. More common letters are worth fewer points while less common letters are worth more points. The points associated with each letter are shown below:

**Points Letters**

1 A, E, I, L, N, O, R, S, T and U

2 D and G

3 B, C, M and P

4 F, H, V, W and Y

5 K

8 J and X

10 Q and Z

Write a program that computes and displays the Scrabble™ score for a word. Create a [dictionary](#) that maps from letters to point values. Then use the [dictionary](#) to compute the score.

A Scrabble™ board includes some squares that multiply the value of a letter or the value of an entire word. We will ignore these squares in this exercise.

[Sample](#) Input

REC

[Sample](#) Output

REC is worth 5 points.

**For example:**

| Input | Result                 |
|-------|------------------------|
| REC   | REC is worth 5 points. |

**Answer:** (penalty regime: 0 %)

```

1 A = {'A': 1, 'E': 1, 'I': 1, 'L': 1, 'N': 1, 'O': 1, 'R': 1, 'S': 1, 'T': 1, 'U': 1,
2 'D': 2, 'G': 2,
3 'B': 3, 'C': 3, 'M': 3, 'P': 3,
4 'F': 4, 'H': 4, 'V': 4, 'W': 4, 'Y': 4,
5 'K': 5,
6 'J': 8, 'X': 8,
7 'Q': 10, 'Z': 10}
8 word = input().upper()
9 B = sum(A.get(letter, 0) for letter in word)
10 print(f"{word} is worth {B} points.")

```

|   | Input | Expected               | Got                    |   |
|---|-------|------------------------|------------------------|---|
| ✓ | GOD   | GOD is worth 5 points. | GOD is worth 5 points. | ✓ |
| ✓ | REC   | REC is worth 5 points. | REC is worth 5 points. | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

◀ Week8\_MCQ

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Functions ►

[Dashboard](#) / [My courses](#) / [PSPP/PUP](#) / [Functions: Built-in functions, User-defined functions, Recursive functions](#) / [Week9\\_Coding](#)

|                     |                                |
|---------------------|--------------------------------|
| <b>Started on</b>   | Friday, 24 May 2024, 8:15 AM   |
| <b>State</b>        | Finished                       |
| <b>Completed on</b> | Saturday, 25 May 2024, 8:23 PM |
| <b>Time taken</b>   | 1 day 12 hours                 |
| <b>Marks</b>        | 5.00/5.00                      |
| <b>Grade</b>        | <b>100.00</b> out of 100.00    |

**Question 1**

Correct

Mark 1.00 out of 1.00

Given a number with maximum of 100 digits as input, find the difference between the sum of odd and even position digits.

**Input Format:**

Take a number in the form of String from stdin.

**Output Format:**

Print the difference between sum of even and odd digits

**Example input:**

1453

**Output:**

1

**Explanation:**

Here, sum of even digits is  $4 + 3 = 7$

sum of odd digits is  $1 + 5 = 6$ .

Difference is 1.

Note that we are always taking absolute difference

**Answer:** (penalty regime: 0 %)

Reset answer

```

1 def differenceSum(num):
2     num_str = str(num)
3     even_sum = 0
4     odd_sum = 0
5     for i in range(len(num_str)):
6         digit = int(num_str[i])
7         if (i + 1) % 2 == 0:
8             even_sum += digit
9         else:
10            odd_sum += digit
11     difference = abs(even_sum - odd_sum)
12
13     return difference
14

```

|   | Test                       | Expected | Got |   |
|---|----------------------------|----------|-----|---|
| ✓ | print(differenceSum(1453)) | 1        | 1   | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.



**Question 2**

Correct

Mark 1.00 out of 1.00

An e-commerce company plans to give their customers a special discount for Christmas.

They are planning to offer a flat discount. The discount value is calculated as the sum of all the prime digits in the total bill amount.

Write an algorithm to find the discount value for the given total bill amount.

Constraints

$1 \leq \text{orderValue} < 10e100000$

Input

The input consists of an integer `orderValue`, representing the total bill amount.

Output

Print an integer representing the discount value for the given total bill amount.

Example Input

578

Output

12

**For example:**

| Test                                       | Result |
|--|--------|
| <code>print(christmasDiscount(578))</code> | 12     |

**Answer:** (penalty regime: 0 %)

Reset answer

```

1 def is_prime(n):
2     if n <= 1:
3         return False
4     if n <= 3:
5         return True
6     if n % 2 == 0 or n % 3 == 0:
7         return False
8     i = 5
9     while i * i <= n:
10        if n % i == 0 or n % (i + 2) == 0:
11            return False
12        i += 6
13    return True
14
15 def christmasDiscount(orderValue):
16     total_discount = 0
17     for digit in str(orderValue):
18         if is_prime(int(digit)):
19             total_discount += int(digit)
20     return total_discount
21
22
23

```

|   | Test                                       | Expected | Got |   |
|---|--|----------|-----|---|
| ✓ | <code>print(christmasDiscount(578))</code> | 12       | 12  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

An abundant number is a number for which the sum of its proper divisors is greater than the number itself. Proper divisors of the number are those that are strictly lesser than the number.

Input Format:

Take input an integer from stdin

Output Format:

Return Yes if given number is Abundant. Otherwise, print No

Example input:

12

Output:

Yes

Explanation

The proper divisors of 12 are: 1, 2, 3, 4, 6, whose sum is  $1 + 2 + 3 + 4 + 6 = 16$ . Since sum of proper divisors is greater than the given number, 12 is an abundant number.

Example input:

13

Output:

No

Explanation

The proper divisors of 13 is: 1, whose sum is 1. Since sum of proper divisors is not greater than the given number, 13 is not an abundant number.

**For example:**

| Test                | Result |
|---------------------|--------|
| print(abundant(12)) | Yes    |
| print(abundant(13)) | No     |

**Answer:** (penalty regime: 0 %)

Reset answer

```

1 def is_abundant(num):
2     divisor_sum = 0
3     for i in range(1, num):
4         if num % i == 0:
5             divisor_sum += i
6     return divisor_sum > num
7
8 def abundant(n):
9     if is_abundant(n):
10         return "Yes"
11     else:
12         return "No"
13
14

```

|   | Test                | Expected | Got |   |
|---|---------------------|----------|-----|---|
| ✓ | print(abundant(12)) | Yes      | Yes | ✓ |
| ✓ | print(abundant(13)) | No       | No  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

complete function to implement coin change making problem i.e. finding the minimum number of coins of certain denominations that add up to given amount of money.

The only available coins are of values 1, 2, 3, 4

Input Format:

Integer input from stdin.

Output Format:

return the minimum number of coins required to meet the given target.

Example Input:

16

Output:

4

Explanation:

We need only 4 coins of value 4 each

Example Input:

25

Output:

7

Explanation:

We need 6 coins of 4 value, and 1 coin of 1 value

**Answer:** (penalty regime: 0 %)

Reset answer

```
1 def coinChange(n):
2     coins = [1, 2, 3, 4]
3     dp = [0] + [float('inf')] * n
4     for amount in range(1, n + 1):
5         dp[amount] = min(dp[amount - coin] + 1 for coin in coins if amount >= coin)
6     return dp[n]
7
8
9
```

|   | Test                  | Expected | Got |   |
|---|-----------------------|----------|-----|---|
| ✓ | print(coinChange(16)) | 4        | 4   | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

Write a code to check whether product of digits at even places is divisible by sum of digits at odd place of a positive integer.

**Input Format:**

Take an input integer from stdin.

**Output Format:**

Print TRUE or FALSE.

**Example Input:**

1256

**Output:**

TRUE

**Example Input:**

1595

**Output:**

FALSE

**For example:**

| Test                       | Result |
|----------------------------|--------|
| print(productDigits(1256)) | True   |
| print(productDigits(1595)) | False  |

**Answer:** (penalty regime: 0 %)

Reset answer

```
1 def productDigits(num):
2     even_product = 1
3     odd_sum = 0
4     i = 0
5     while num > 0:
6         digit = num % 10
7         if i % 2 == 0:
8             even_product *= digit
9         else:
10            odd_sum += digit
11         num //= 10
12         i += 1
13
14     return even_product % odd_sum == 0
15
16
17
18
19
```

|   | Test                       | Expected | Got   |   |
|---|----------------------------|----------|-------|---|
| ✓ | print(productDigits(1256)) | True     | True  | ✓ |
| ✓ | print(productDigits(1595)) | False    | False | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[◀ Week9\\_MCQ](#)

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|                     |                                |
|---------------------|--------------------------------|
| <b>Started on</b>   | Saturday, 25 May 2024, 8:25 PM |
| <b>State</b>        | Finished                       |
| <b>Completed on</b> | Tuesday, 28 May 2024, 1:36 PM  |
| <b>Time taken</b>   | 2 days 17 hours                |
| <b>Marks</b>        | 5.00/5.00                      |
| <b>Grade</b>        | <b>100.00</b> out of 100.00    |

**Question 1**

Correct

Mark 1.00 out of 1.00

Write a Python program to sort a [list](#) of elements using the merge sort algorithm.

**For example:**

| Input     | Result    |
|-----------|-----------|
| 5         | 3 4 5 6 8 |
| 6 5 4 3 8 |           |

**Answer:** (penalty regime: 0 %)

```

1 n = int(input())
2 arr = list(map(int, input().split()))
3 def merge_sort(arr):
4     if len(arr) <= 1:
5         return arr
6     mid = len(arr) // 2
7     left_half = merge_sort(arr[:mid])
8     right_half = merge_sort(arr[mid:])
9     return sorted(left_half + right_half)
10 print(*merge_sort(arr))
11

```

|   | Input                           | Expected                   | Got                        |   |
|---|---------------------------------|----------------------------|----------------------------|---|
| ✓ | 5<br>6 5 4 3 8                  | 3 4 5 6 8                  | 3 4 5 6 8                  | ✓ |
| ✓ | 9<br>14 46 43 27 57 41 45 21 70 | 14 21 27 41 43 45 46 57 70 | 14 21 27 41 43 45 46 57 70 | ✓ |
| ✓ | 4<br>86 43 23 49                | 23 43 49 86                | 23 43 49 86                | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 2**

Correct

Mark 1.00 out of 1.00

To find the frequency of numbers in a [list](#) and display in sorted order.

**Constraints:**

1&lt;=n, arr[i]&lt;=100

**Input:**

1 68 79 4 90 68 1 4 5

**output:**

1 2

4 2

5 1

68 2

79 1

90 1

**For example:**

| Input       | Result            |
|-------------|-------------------|
| 4 3 5 3 4 5 | 3 2<br>4 2<br>5 2 |

**Answer:** (penalty regime: 0 %)

```

1 A = list(map(int, input().split()))
2 for B in sorted(set(A)):
3     print(B, A.count(B))

```

|   | Input       | Expected          | Got               |   |
|---|-------------|-------------------|-------------------|---|
| ✓ | 4 3 5 3 4 5 | 3 2<br>4 2<br>5 2 | 3 2<br>4 2<br>5 2 | ✓ |

|   | Input           | Expected                         | Got                              |   |
|---|-----------------|----------------------------------|----------------------------------|---|
| ✓ | 12 4 4 4 2 3 5  | 2 1<br>3 1<br>4 3<br>5 1<br>12 1 | 2 1<br>3 1<br>4 3<br>5 1<br>12 1 | ✓ |
| ✓ | 5 4 5 4 6 5 7 3 | 3 1<br>4 2<br>5 3<br>6 1<br>7 1  | 3 1<br>4 2<br>5 3<br>6 1<br>7 1  | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**Question 3**

Correct

Mark 1.00 out of 1.00

Write a Python program for binary search.

**For example:**

| Input             | Result |
|-------------------|--------|
| 1,2,3,5,8<br>6    | False  |
| 3,5,9,45,42<br>42 | True   |

**Answer:** (penalty regime: 0 %)

```

1 A = sorted(list(map(int, input().split(','))))
2 B = int(input())
3 left, right = 0, len(A) - 1
4 C = False
5 while left <= right:
6     mid = (left + right) // 2
7     if A[mid] == B:
8         C = True
9         break
10    elif A[mid] < B:
11        left = mid + 1
12    else:
13        right = mid - 1
14 print(C)
15
16
17

```

|   | Input                | Expected | Got   |   |
|---|----------------------|----------|-------|---|
| ✓ | 1,2,3,5,8<br>6       | False    | False | ✓ |
| ✓ | 3,5,9,45,42<br>42    | True     | True  | ✓ |
| ✓ | 52,45,89,43,11<br>11 | True     | True  | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 4**

Correct

Mark 1.00 out of 1.00

Bubble Sort is the simplest [sorting](#) algorithm that works by repeatedly swapping the adjacent elements if they are in wrong order. You read an [list](#) of numbers. You need to arrange the elements in ascending order and print the result. The [sorting](#) should be done using bubble sort.

**Input Format:** The first line reads the number of elements in the array. The second line reads the array elements one by one.

**Output Format:** The output should be a sorted [list](#).

**For example:**

| Input            | Result      |
|------------------|-------------|
| 6<br>3 4 8 7 1 2 | 1 2 3 4 7 8 |
| 5<br>4 5 2 3 1   | 1 2 3 4 5   |

**Answer:** (penalty regime: 0 %)

```

1 n = int(input())
2 arr = list(map(int, input().split()))
3 for i in range(n):
4     for j in range(0, n-i-1):
5         if arr[j] > arr[j+1]:
6             arr[j], arr[j+1] = arr[j+1], arr[j]
7 print(*arr)

```

|   | Input             | Expected     | Got          |   |
|---|-------------------|--------------|--------------|---|
| ✓ | 6<br>3 4 8 7 1 2  | 1 2 3 4 7 8  | 1 2 3 4 7 8  | ✓ |
| ✓ | 6<br>9 18 1 3 4 6 | 1 3 4 6 9 18 | 1 3 4 6 9 18 | ✓ |
| ✓ | 5<br>4 5 2 3 1    | 1 2 3 4 5    | 1 2 3 4 5    | ✓ |

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 5**

Correct

Mark 1.00 out of 1.00

An list contains N numbers and you want to determine whether two of the numbers sum to a given number K. For example, if the input is 8, 4, 1, 6 and K is 10, the answer is yes (4 and 6). A number may be used twice.

**Input Format**

The first line contains a single integer n , the length of list

The second line contains n space-separated integers, list[i].

The third line contains integer k.

**Output Format**

Print Yes or No.

**Sample Input**

```
7
0 1 2 4 6 5 3
1
```

**Sample Output**

Yes

**For example:**

| Input                       | Result |
|-----------------------------|--------|
| 5<br>8 9 12 15 3<br>11      | Yes    |
| 6<br>2 9 21 32 43 43 1<br>4 | No     |

**Answer:** (penalty regime: 0 %)

```
1 n = int(input())
2 nums = list(map(int, input().split()))
3 k = int(input())
4 found = any(nums[i] + nums[j] == k for i in range(n) for j in range(i + 1, n))
5 print("Yes" if found else "No")
```

|   | Input                       | Expected | Got |   |
|---|-----------------------------|----------|-----|---|
| ✓ | 5<br>8 9 12 15 3<br>11      | Yes      | Yes | ✓ |
| ✓ | 6<br>2 9 21 32 43 43 1<br>4 | No       | No  | ✓ |
| ✓ | 6<br>13 42 31 4 8 9<br>17   | Yes      | Yes | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.



[◀ Week10\\_MCQ](#)

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Sorting ►