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Test Name:	**CS Coding Questions**
Taken On:	9 Mar 2024 15:19:12 IST
Time Taken:	91 min 50 sec/ 150 min
Invited by:	Ashwin Joy
Skills Score:	
Tags Score:	

100%
250/250

scored in **CS Coding Questions** in 91 min 50 sec on 9 Mar 2024 15:19:12 IST

Recruiter/Team Comments:

No Comments.

Plagiarism flagged

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	Question Description	Time Taken	Score	Status
Q1	Programming Q1.6 > Coding	1 min 24 sec	25/ 25	✓
Q2	Programming Q1.4 > Coding	3 min 37 sec	25/ 25	✓
Q3	Programming Q8 > Coding	4 min 5 sec	25/ 25	✓
Q4	Programming Q1.10 > Coding	4 min	25/ 25	✓
Q5	Programming Q1.9 > Coding	1 min 48 sec	25/ 25	!
Q6	Programming Q1.7 > Coding	6 min 38 sec	25/ 25	✓
Q7	Programming Q2.6 > Coding	9 min 40 sec	25/ 25	✓
Q8	Programming Q2.5 > Coding	20 min 21 sec	25/ 25	!
Q9	Negative Numbers in a Sorted Matrix > Coding	6 min 37 sec	25/ 25	✓
Q10	Programming Q2.4 > Coding	16 min 58 sec	25/ 25	!

QUESTION 1

Programming Q1.6 > Coding

Correct Answer

Score 25

QUESTION DESCRIPTION

Write a program to find the factorial of a number using recursion.

Sample TestCase

Input

```
6
```

Output

```
720
```

CANDIDATE ANSWER

Language used: **Python 3**

```
# Enter your code here. Read input from STDIN. Print output to STDOUT

def fact(n):
    if n == 1:
        return n
    else:
        return n * fact(n-1)

n = int(input())
print(fact(n))
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0144 sec	9.01 KB
Testcase 1	Easy	Hidden case	Success	5	0.0199 sec	9.18 KB
Testcase 2	Easy	Hidden case	Success	5	0.0169 sec	9.07 KB
Testcase 3	Easy	Hidden case	Success	5	0.0137 sec	9.18 KB
Testcase 4	Easy	Hidden case	Success	5	0.0167 sec	9.26 KB

No Comments

QUESTION 2

Correct Answer

Score 25

Programming Q1.4 › Coding

QUESTION DESCRIPTION

Write a program to check whether the given integer is a prime number or not. Read an integer from the console as input. If the integer is a prime number, print "n is a prime number", where n is the value of the integer. Else, print "n is not a prime number".

Kindly check the sample test case for more clarity.

Sample TestCase

Input

```
7
```

Output

```
7 is a prime number
```

CANDIDATE ANSWER

Language used: **Python 3**

```python
# Enter your code here. Read input from STDIN. Print output to STDOUT
from math import sqrt

n = int(input())

is_prime = True
for i in range(2,int(sqrt(n))+1):
    if(n%i==0):
        is_prime = False

if is_prime == True:
    print(n,"is a prime number")
else:
    print(n,"is not a prime number")
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0165 sec	9.35 KB
Testcase 1	Easy	Hidden case	Success	5	0.0147 sec	9.68 KB
Testcase 2	Easy	Hidden case	Success	5	0.0145 sec	9.68 KB
Testcase 3	Easy	Hidden case	Success	5	0.0137 sec	9.49 KB
Testcase 4	Easy	Hidden case	Success	5	0.0171 sec	9.44 KB

No Comments

QUESTION 3

Correct Answer

Score 25

Programming Q8 › Coding

QUESTION DESCRIPTION

Write a program to count the total number of vowels in a string.

Read a string as input from the console and print the number of vowels as output on the console in the following format: "Total number of vowels: 5". If there are no vowels in the string, print "No vowels were found.".

Kindly check the sample test case given below for more clarity.

Sample Testcase

Input

```
HelloWorld
```

Output

```
Total number of vowels: 3
```

CANDIDATE ANSWER

Language used: **Python 3**

```python
# Enter your code here. Read input from STDIN. Print output to STDOUT

my_string = input()

vowels = "aeiouAEIOU"
count = 0


for char in my_string:
    if char in vowels:
        count += 1

if count != 0:
    print("Total number of vowels:",count)
else:
    print("No vowels were found.")

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0171 sec	9.13 KB
Testcase 1	Easy	Hidden case	Success	5	0.0146 sec	9.13 KB
Testcase 2	Easy	Hidden case	Success	5	0.0143 sec	9.25 KB
Testcase 3	Easy	Hidden case	Success	5	0.0197 sec	9.05 KB
Testcase 4	Easy	Hidden case	Success	5	0.0126 sec	8.93 KB

No Comments

QUESTION 4

Correct Answer

Score 25

Programming Q1.10 › Coding

QUESTION DESCRIPTION

Challenge: Swap a Letter with Asterisk

Imagine you're developing a word puzzle game where a particular letter in a word is hidden, and players have to guess that letter. Write a program that takes a word and a letter as input and replaces all occurrences of that letter in the word with asterisks (`*`).

Write a program that:
- Accepts a word and a letter from the user.
- Replaces all occurrences of the given letter in the word with `*`.
- Prints out the original word and the modified word.

Sample Input:

Hello

l

Sample Output:

He**o

CANDIDATE ANSWER

Language used: **Python 3**

```
# Enter your code here. Read input from STDIN. Print output to STDOUT

my_string = input()
char = input()

my_string = my_string.replace(char, "*")

print(my_string)
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0165 sec	9.12 KB
Testcase 1	Easy	Sample case	Success	5	0.0161 sec	9.25 KB
Testcase 2	Easy	Hidden case	Success	5	0.0451 sec	9.06 KB
Testcase 3	Easy	Hidden case	Success	5	0.0943 sec	9.19 KB
Testcase 4	Easy	Hidden case	Success	5	0.016 sec	9.24 KB

No Comments

QUESTION 5

Needs Review

Score 25

Programming Q1.9 › Coding

QUESTION DESCRIPTION

Given an input of string in combinations of characters '{' and '}', which are parathesis, you have to find if the input is balanced or not. The input is balanced if all the opening curly braces are closed. You can't close a curly brace before it is opened.

If the input is balanced print "Matching" on the console, else print "Not Matching".

Example 1:
Input:
{}

Output:
Matching

Example 2:
Input:
{}{}

Output:
Matching

Example 3:
Input:

{}{

Output:
Not Matching

CANDIDATE ANSWER

Language used: **Python 3**

```
# Enter your code here. Read input from STDIN. Print output to STDOUT

my_string = input()

count = 0
for char in my_string:
    if char == '{':
        count+=1
    elif char == '}':
        count-=1
    else:
        print("Invalid character found")

    if count<0:
        break

if count==0:
    print("Matching")
else:
    print("Not Matching")

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	3	0.0192 sec	9.12 KB
Testcase 1	Easy	Sample case	Success	3	0.0152 sec	9.05 KB
Testcase 2	Easy	Sample case	Success	3	0.0143 sec	9.25 KB
Testcase 3	Easy	Hidden case	Success	4	0.0158 sec	9.11 KB
Testcase 4	Easy	Hidden case	Success	4	0.0167 sec	9.26 KB
Testcase 5	Easy	Hidden case	Success	4	0.1174 sec	9.09 KB
Testcase 6	Easy	Hidden case	Success	4	0.0156 sec	9.08 KB

No Comments

QUESTION 6

Correct Answer

Score 25

Programming Q1.7 › Coding

QUESTION DESCRIPTION

Remove duplicates from a given sorted array of numbers.

The first line of input is the number of values in the array. In the second line, read the n values as input for the array.

Print the resultant array as output. Kindly check the sample test case for reference.

Sample TestCase

Input

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

Output

```
1 2 3 4 5 6
```

CANDIDATE ANSWER

Language used: **Python 3**

```python
# Enter your code here. Read input from STDIN. Print output to STDOUT

n = int(input())

my_list = list(map(int, input().split()))

unique_list = []

for i in range(len(my_list)-1):
    if my_list[i] != my_list[i+1]:
        unique_list.append(my_list[i])

if my_list[n-1] != unique_list[:-1]:
    unique_list.append(my_list[n-1])

for i in unique_list:
    print(i, end=" ")
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0159 sec	9.32 KB
Testcase 0	Easy	Sample case	Success	5	0.015 sec	9.38 KB
Testcase 1	Easy	Hidden case	Success	5	0.0183 sec	9.12 KB
Testcase 3	Easy	Hidden case	Success	5	0.0162 sec	9.28 KB
Testcase 4	Easy	Hidden case	Success	5	0.0143 sec	9.22 KB

No Comments

QUESTION 7

Correct Answer

Score 25

Programming Q2.6 › Coding

QUESTION DESCRIPTION

You will be given a list of integers, arr, and a single integer k. You must create an array of length k from elements of arr to minimize its unfairness. Call that array arr'. Unfairness of an array is calculated as = max(arr') – min(arr')
Where:- max denotes the largest integer in arr'- min denotes the smallest integer in arr'
Example:

arr=[1,4,7,2]

k=2

Pick any two elements, say arr' = [4, 7].
unfairness = max(4,7) – min(4, 7) = 7 – 4 = 3
Testing for all pairs, the solution [1, 2] provides the minimum unfairness.

CANDIDATE ANSWER

Language used: **Python 3**

```
# Enter your code here. Read input from STDIN. Print output to STDOUT

arr = list(map(int, input().split(",")))
k = int(input())

arr.sort()
min_unfairness = float("inf")
resultant_array = []

for i in range(len(arr)-k+1):
    sub_array = arr[i:i+k]
    unfairness = max(sub_array) - min(sub_array)

    if unfairness < min_unfairness:
        min_unfairness = unfairness
        resultant_array = sub_array

print(resultant_array)
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0152 sec	9.57 KB
Testcase 1	Easy	Hidden case	Success	5	0.0141 sec	9.57 KB
Testcase 2	Easy	Hidden case	Success	5	0.0144 sec	9.38 KB
Testcase 3	Easy	Hidden case	Success	5	0.0156 sec	9.49 KB
Testcase 4	Easy	Hidden case	Success	5	0.0148 sec	9.12 KB

No Comments

QUESTION 8

Needs Review

Score 25

Programming Q2.5 › Coding

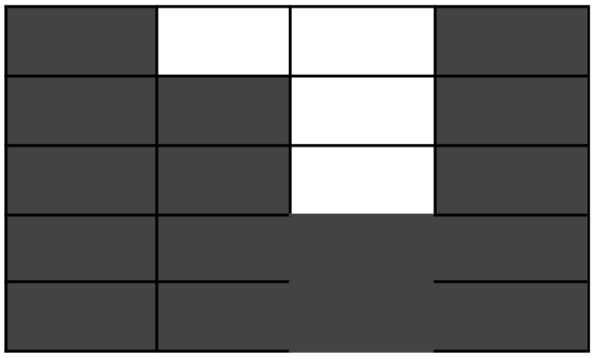
QUESTION DESCRIPTION

Given an array of heights of stone towers where the height and width of each stone is 1 unit, compute how much water (in number of units) it can trap after rain.

Example:

1. Heights = [5,4,2,5]
Result: 4

Explanation: The black boxes are stones forming the towers. The white spaces below store water after rain. There are 4 units where water can be stored.



Sample Testcase 1:

Input

```
5,4,2,5
```

Output

```
4
```

Sample Testcase 2:

Input

```
3,0,2,0,4
```

Output:

```
7
```

CANDIDATE ANSWER

Language used: **Python 3**

```python
heights = list(map(int, input().split(",")))

water_trapped = 0
stack = []

for i in range(len(heights)):
    while stack and heights[i] > heights[stack[-1]]:
        temp = stack.pop()

        if not stack:
            break

        distance = i - stack[-1] - 1
        bounded_height = min(heights[i], heights[stack[-1]]) - heights[temp]
        water_trapped += distance * bounded_height

    stack.append(i)

print(water_trapped)
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	2	0.0139 sec	9.41 KB
Testcase 1	Easy	Sample case	Success	3	0.0149 sec	9.46 KB
Testcase 2	Easy	Hidden case	Success	5	0.0144 sec	9.27 KB
Testcase 3	Easy	Hidden case	Success	5	0.018 sec	9.42 KB
Testcase 4	Easy	Hidden case	Success	5	0.0156 sec	9.31 KB
Testcase 5	Easy	Hidden case	Success	5	0.0158 sec	9.23 KB

No Comments

QUESTION 9

Correct Answer

Score 25

Negative Numbers in a Sorted Matrix › Coding

QUESTION DESCRIPTION

Write a function countNegatives that takes three arguments: a 2D array (grid) representing a matrix, an integer n representing the number of rows in the matrix, and an integer m representing the number of columns in the matrix. The matrix is sorted such that all elements in any row are sorted in increasing order from left to right, and all elements in any column are sorted in increasing order from top to bottom. Your function should return the total number of negative numbers present in the matrix.

Additionally, you will write code to read inputs for the number of rows (n), the number of columns (m), and the matrix elements themselves from the standard input (console). The input will be provided as follows:

1. The first line of input contains a single integer n, the number of rows in the matrix.
2. The second line of input contains a single integer m, the number of columns in the matrix.
3. The next n lines each contain m integers separated by spaces, representing the elements of the matrix.

Solve this problem with a **complexity less than m+n**.

Function Signature:

```
def countNegatives(grid: List[List[int]], n: int, m: int) -> int:
```

Input Format Example:

```
3
4
-4 -3 -1 1
-2 -2 1 3
-1 1 2 4
```

Output:

```
6
```

The function should print the total number of negative numbers in the provided matrix.

Constraints:

- The number of rows n and columns m will not exceed 100.
- Each row and column of the matrix is sorted in non-decreasing order.
- Matrix elements are integers.

Implementation Notes:

- Your program should first read the size of the matrix (n and m) from the input.
- Then, it should read n lines of input, each containing m integers, to construct the matrix.
- After reading the input, your program should call the countNegatives function with the matrix, n, and m as

arguments and print the result.

CANDIDATE ANSWER

Language used: **Python 3**

```
r = int(input())
c = int(input())

matrix = []

for i in range(r):
    row = list(map(int, input().split()))
    matrix.append(row)

row_index = 0
column_index = c-1
count = 0

while(row_index<r and column_index>=0):
    if matrix[row_index][column_index] < 0:
        count += column_index + 1
        row_index += 1
    else:
        column_index -= 1

print(count)

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0162 sec	9.2 KB
Testcase 1	Easy	Hidden case	Success	5	0.0172 sec	9.27 KB
Testcase 2	Easy	Hidden case	Success	5	0.0146 sec	9.18 KB
Testcase 3	Easy	Hidden case	Success	5	0.0192 sec	8.98 KB
Testcase 4	Easy	Hidden case	Success	5	0.0159 sec	9.3 KB

No Comments

QUESTION 10

Needs Review

Score 25

Programming Q2.4 › Coding

QUESTION DESCRIPTION

Write a program that takes an array that denotes the daily closing prices of a stock to determine the maximum profit by buying and selling one share of the stock.

Example 1:
Stock prices: [310,315,275,260,270,290,230,255,250]
Maximum profit: 30
Explanation Buy at 260; Sell at 290

Example 2:
Stock prices: [1,2,3,4]
Maximum Profit: 3

Explanation: Buy at 1; Sell at 4

Sample Testcase 1:

Input:

```
310,315,275,260,270,290,230,255,250
```

Output:

```
30
```

Sample Testcase 2:

Input:

```
1,2,3,4
```

Output:

```
3
```

CANDIDATE ANSWER

Language used: **Python 3**

```python


stock_prices = list(map(int, input().split(',')))

max_profit = 0
min_price = stock_prices[0]

for price in stock_prices[1:]:
    if price < min_price:
        min_price = price
    elif price - min_price > max_profit:
        max_profit = price - min_price

print(max_profit)
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 0	Easy	Sample case	Success	5	0.0459 sec	9.25 KB
Testcase 1	Easy	Sample case	Success	5	0.0164 sec	9.26 KB
Testcase 2	Easy	Hidden case	Success	5	0.1092 sec	9.07 KB
Testcase 3	Easy	Hidden case	Success	5	0.0149 sec	9 KB
Testcase 4	Easy	Hidden case	Success	5	0.0913 sec	9.17 KB

No Comments