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Started on Friday, 12 April 2024, 1:16 PM

State Finished

Completed on Sunday, 21 April 2024, 3:41 PM

Time taken 9 days 2 hours

Marks 5.00/5.00

Grade 50.00 out of 50.00 (100%)

Name [SNEHA S 2022-CSD-A](#)

Question **1**

Correct

Mark 1.00 out of 1.00

Write a function that takes three numbers as parameters, and returns the median value of those parameters as its result.

Answer: (penalty regime: 0 %)

Reset answer

```
1 def median(a, b, c):
2     A=[a,b,c]
3     A.sort()
4     med=A[1]
5     return med
6 median(10,20,30)
```

	Test	Expected	Got	
✓	print(median(10, 20, 30))	20	20	✓
✓	print(median(60, 50, 40))	50	50	✓
✓	print(median(70, 90, 80))	80	80	✓

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 function `sumofsquares(m)` that takes an integer `m` returns `True` if `m` is a sum of squares and `False` otherwise. (If `m` is not positive, your function should return `False`.)

Here are some examples to show how your function should work.

```
>>> sumofsquares(41)
```

```
True
```

```
>>> sumofsquares(30)
```

```
False
```

```
>>> sumofsquares(17)
```

```
True
```

Answer: (penalty regime: 0 %)

Reset answer

```
1 from math import *
2
3 def issquare(n):
4     k = int(sqrt(n))
5     return(k*k == n)
6
7 def sumofsquares(m):
8     if m<=0:
9         return False
10    i=0
11    while i**2 <=m:
12        j_squared=m-i**2
13        j=int(j_squared **0.5)
14        if j**2==j_squared:
15            return True
16        i+=1
17    return False
18
```

	Test	Expected	Got	
✓	<code>print(sumofsquares(41))</code>	True	True	✓
✓	<code>print(sumofsquares(30))</code>	False	False	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **3**

Correct

Mark 1.00 out of 1.00

The notion of a palindrome was introduced previously. In this exercise you will write a recursive function that determines whether or not a string is a palindrome. The empty string is a palindrome, as is any string containing only one character. Any longer string is a palindrome if its first and last characters match, and if the string formed by removing the first and last characters is also a palindrome.

Write a program that reads a string from the user and uses your recursive function to determine whether or not it is a palindrome. Then your program should display an appropriate message for the user.

Sample Input

malayalam

Sample Output

That was a palindrome!

Sample Input

madan

Sample Output

That is not a palindrome.

Answer: (penalty regime: 0 %)

Reset answer

```

1 def isPalindrome(s):
2     # Base case: The empty string is a palindrome. So is a string containing only
3     if len(s) <= 1:
4         return True
5
6     # Recursive case: The string is a palindrome only if the first and last charac
7     if s[0] == s[-1]:
8         return isPalindrome(s[1:-1])
9     # the rest of the string is a palindrome
10    else:
11
12        return False
13
14
15 # Check whether or not a string entered by the user is a palindrome
16 # Read the string from the user
17 line=input()
18
19 # Check its status and display the result
20 if isPalindrome(line):
21     print("That was a palindrome!")
22

```

	Input	Expected	Got	
✓	malayalam	That was a palindrome!	That was a palindrome!	✓
✓	madan	That is not a palindrome.	That is not a palindrome.	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **4**

Correct

Mark 1.00 out of 1.00

Euclid was a Greek mathematician who lived approximately 2,300 years ago. His algorithm for computing the greatest common divisor of two positive integers, a and b , is both efficient and recursive. It is outlined below:

If b is 0 then

 return a

Else

 Set c equal to the remainder when a is divided by b

 Return the greatest common divisor of b and c

Write a program that implements Euclid's algorithm and uses it to determine the greatest common divisor of two integers entered by the user. Test your program with some very large integers. The result will be computed quickly, even for huge numbers consisting of hundreds of digits, because Euclid's algorithm is extremely efficient.

Answer: (penalty regime: 0 %)

```

1 def Gcd(a,b):
2     if(b==0):
3         return a
4     return Gcd(b,a%b)
5
6 a=int(input())
7 b=int(input())
8 print(Gcd(a,b))

```

	Input	Expected	Got	
✓	8 12	4	4	✓
✓	720 1000	40	40	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **5**

Correct

Mark 1.00 out of 1.00

In this exercise you will write a function that determines whether or not a password is good. We will define a good password to be a one that is at least 8 characters long and contains at least one uppercase letter, at least one lowercase letter, and at least one number. Your function should return True if the password passed to it as its only parameter is good. Otherwise it should return False. Include a main program that reads a password from the user and reports whether or not it is good. Ensure that your main program only runs when your solution has not been imported into another file.

Sample Input 1

chennai

Sample Output 1

That isn't a good password.

Sample Input 2

Chennai18

Sample Output 2

That's a good password.

Answer: (penalty regime: 0 %)

Reset answer

```

1 def checkPassword(input1):
2     if len(input1) < 8:
3         print("That isn't a good password.")
4         return
5
6     h_u=False
7     h_l=False
8     h_d=False
9
10    for i in input1:
11        if i.isupper():
12            h_u=True
13        elif i.islower():
14            h_l=True
15        elif i.isdigit():
16            h_d=True
17
18    if h_u and h_l and h_d:
19        print("That's a good password.")
20    else:
21        print("That isn't a good password.")
22

```

	Test	Expected	Got	
✓	checkPassword('chennai')	That isn't a good password.	That isn't a good password.	✓
✓	checkPassword('Chennai18')	That's a good password.	That's a good password.	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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