

WEEK 07-Functions

Started on	Monday, 22 April 2024, 6:24 PM
State	Finished
Completed on	Thursday, 25 April 2024, 6:07 PM
Time taken	2 days 23 hours
Marks	5.00/5.00
Grade	50.00 out of 50.00 (100%)
Name	SAKTHI MAHESWARI C 2022-CSD-A

WEEK 07-Functions

Question **1**

Correct

Mark 1.00 out of 1.00

🚩 Flag question

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     med=(a+b+c)/3  
3     return int(med)
```

	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.

WEEK 07-Functions

Question **2**

Correct

Mark 1.00 out of 1.00

Flag question

A string with parentheses is well bracketed if all parentheses are matched: every opening bracket has a matching closing bracket and vice versa.

Write a Python function `wellbracketed(s)` that takes a string `s` containing parentheses and returns `True` if `s` is well bracketed and `False` otherwise.

Hint: Keep track of the nesting depth of brackets. Initially the depth is 0. The depth increases with each opening bracket and decreases with each closing bracket. What are the constraints on the value of the nesting depth for the string to be wellbracketed?

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

```
>>> wellbracketed("22")
False
```

```
>>> wellbracketed("(a+b)(a-b)")
True
```

```
>>> wellbracketed("(a(b+c)-d)((e+f)")
False
```

Reset answer

```
1 def wellbracketed(s):
2     c=0
3     for i in s:
4         if i=="(":
5             c=c+1
6         elif i==")":
7             c=c-1
8     if c==0:
9         return True
10    else:
11        return False
```

	Test	Expected	Got	
✓	<code>print(wellbracketed("22"))</code>	False	False	✓
✓	<code>print(wellbracketed("(a+b)(a-b)"))</code>	True	True	✓
✓	<code>print(wellbracketed("(a(b+c)-d)((e+f)"))</code>	False	False	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

WEEK 07-Functions

Question **3**

Correct

Mark 1.00 out of 1.00

Flag question

A prime number is an integer greater than one that is only divisible by one and itself. Write a function that determines whether or not its parameter is prime, returning True if it is, and False otherwise.

Answer: (penalty regime: 0 %)

```
1 def isPrime(n):
2     c=0
3     if n==1:
4         return False
5     else:
6         for i in range(2,n):
7             if n%i==0:
8                 c=c+1
9             if c==0:
10                return True
11            else:
12                return False
```

	Test	Expected	Got	
✓	print(isPrime(1))	False	False	✓
✓	print(isPrime(2))	True	True	✓
✓	print(isPrime(3))	True	True	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

WEEK 07-Functions

Question **4**

Correct

Mark 1.00 out of 1.00

Flag question

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
```

```
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     for i in range(m//2):
9         ans=issquare(i) and issquare(m-i)
10        if ans==True:
11            break
12        return ans
13
```

	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.

WEEK 07-Functions

Question 5

Correct

Mark 1.00 out of 1.00

Flag question

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 euclid(b,a):
2     if b==0:
3         return a
4     return euclid(a%b,b)
5 a=int(input())
6 b=int(input())
7 print(euclid(b,a))
```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.