Implement Functions in a Program Assignment

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```python
# A16. Write a program to find all odd length palindromes
from a list.

def is_palindrome(s):
    return s == s[::-1]

def odd_length_palindromes(strings):
    odd_palindromes = []
    for string in strings:
        if len(string)%2 != 0:
            odd_palindromes.append(string)
    return odd_palindromes

string_list = ["argha", "level", "deified", "python",
"radar", "good", "madam", "hello"]

odd_palindromes = odd_length_palindromes(string_list)
print("Odd length palindromes:", odd_palindromes)
```

```python
# A17. Write a recursive function to find HCF of two
numbers. Use the function to find the LCM of set of numbers.

def hcf(a, b):
    if b == 0:
        return a
    return hcf(b, a % b)

def lcm(a, b):
    return (a * b) // hcf(a, b)

n1, n2 = 12, 18
print("HCF:", hcf(n1, n2))
print("LCM:", lcm(n1, n2))
```

```python
# A18. Using recursion write a program find a factorial of a number.

def fact(n):
    if n==0 or n==1:
        return 1
    return n * fact(n-1)

n = 5
print(f"Factorial of {n} is {fact(n)}")
```

```python
# A19. Using recursion write a program find Fibonacci serise of 1st n terms.

def fibo(first, sec, n):
    if n == 0:
        return
    print(first, end=" ")
    fibo(sec, first+sec, n-1)

fibo(0, 1, 10)
```

OUTPUT

```
PS C:\Users\hello\Documents\SEM3\PYTHON\Lab5> python -u "c:\Users\hello\Documents\SEM3\PYTHON\Lab5\A16.py"
Odd length palindromes: ['argha', 'level', 'deified', 'radar', 'madam', 'hello']
PS C:\Users\hello\Documents\SEM3\PYTHON\Lab5> python -u "c:\Users\hello\Documents\SEM3\PYTHON\Lab5\A17.py"
HCF: 6
LCM: 36
PS C:\Users\hello\Documents\SEM3\PYTHON\Lab5> python -u "c:\Users\hello\Documents\SEM3\PYTHON\Lab5\A18.py"
Factorial of 5 is 120
PS C:\Users\hello\Documents\SEM3\PYTHON\Lab5> python -u "c:\Users\hello\Documents\SEM3\PYTHON\Lab5\A19.py"
0 1 1 2 3 5 8 13 21 34
PS C:\Users\hello\Documents\SEM3\PYTHON\Lab5>
```