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202311023

Programming Lab Assignment-2

1.Make a module "pascal.py" with function "pascalTriangle(numOfRows)" and import into "main.py".

```
from pascal import printPascal

row = int(input("Enter number of rows :"))

printPascal(row)

Enter number of rows :5
     1
    1 1
   1 2 1
  1 3 3 1
 1 4 6 4 1
```

2. Write a Python program that takes a dictionary containing dates and finds all the Sundays.

```python
import datetime as dt

def find_sundays(dates):
    sundays={}

    for j,i in dates.items():
        d = dt.datetime.strptime(i, '%Y-%m-%d')

        if d.weekday() == 6:
            sundays[j] = d.strftime('%Y-%m-%d')

    return sundays

data = {
```

```
"date1": "2023-09-03",
"date2": "2023-09-11",
"date3": "2023-09-17",
"date4": "2023-09-23",
}

find_sundays(data)
```
```
{'date1': '2023-09-03', 'date3': '2023-09-17'}
```

3. Write a Python program to calculate the area(round to 2 decimals) of a triangle when we know the lengths of two sides and the included angle between them.[sine rule]

```python
import math

def calculate_triangle_area(a, b, C):
    rad = math.radians(C)

    area = 0.5 * a * b * math.sin(rad)

    return round(area, 2)

a = float(input("Enter the length of side 'a': "))
b = float(input("Enter the length of side 'b': "))
c = float(input("Enter the included angle 'C' in degrees: "))

area = calculate_triangle_area(a, b, c)

print(f"The area of the triangle is : {area}")
```
```
The area of the triangle is : 4.79
```

4. Use the Python 'sys' module to pass command-line arguments to a script, and process these three arguments within Python program and return those are palindrome numbers.

```python
import sys

def is_palindrome(num):
    num_str = str(num)
    return num_str == num_str[::-1]

if len(sys.argv) != 4:
    print("Usage: python script.py arg1 arg2 arg3")
    sys.exit(1)

arg1 = (sys.argv[1])
arg2 = (sys.argv[2])
arg3 = (sys.argv[3])

if is_palindrome(arg1):
    print(f"{arg1} is a palindrome.")
if is_palindrome(arg2):
    print(f"{arg2} is a palindrome.")
if is_palindrome(arg3):
    print(f"{arg3} is a palindrome.")
```

Output

PS D:\DAIICT\MTech\Machine Learning\SEM 1\PC503 Programming lab\Lab files\assignment-2> py .\4sysfile.py

PS D:\DAIICT\MTech\Machine Learning\SEM 1\PC503 Programming lab\Lab files\assignment-2> py .\4sysfile.py hello 434 racecar

434 is a palindrome.

racecar is a palindrome.

5. Convert a String to camelCase (using 're' module)

```python
import re

def to_camel_case(input_str):
    words = re.split(r'\W+', input_str)

    camel_case_words = [words[0].lower()] + [word.capitalize() for
word in words[1:]]

    camel_case_str = ''.join(camel_case_words)
    return camel_case_str

s = "Hello World"
result = to_camel_case(s)
print(result)

helloWorld
```