Python Assignment-2

Q1) Display the difference in dates

```
from datetime import datetime
date1 = input("Enter first date in yyyy-mm-dd format: ")
date2 = input("Enter second date in yyyy-mm-dd format: ")

d1 = datetime.strptime(date1, "%Y-%m-%d")
d2 = datetime.strptime(date2, "%Y-%m-%d")

difference = d2 - d1

print("Difference in Dates : ",difference.days ,"days")
```

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Q2. Display time since epoch in hours and minutes

```
import time

seconds = time.time()

hours = int(seconds//3600)

minutes = int((seconds//60)%60)

print("Hours is: ",hours,"\nMinutes is: ",minutes)
```

****

Q3. Display your age in years, months and days

```
from datetime import date,datetime

today = date.today()
DOB = input("Enter Birthdate in yyyy-mm-dd format: ")
dob = datetime.strptime(DOB, "%Y-%m-%d").date()

print("Your birthdate is : ",dob,", :)")
age_indays = (today- dob).days
print("You are ",age_indays," days old. :)")

years = today.year - dob.year
months = today.month - dob.month
days = today.day - dob.day
if days< 0:
months -= 1
days += 30
if months<0:
years -=1
months += 12
print("You are", years, "years and", months, "months and ",days," days old.")
```

****

Q4. Display trigonometric table of sin, cos and tan

```
import math

print("Angle   Sin      Cos      Tan")
print("---------------------------------")

angles = [0, 30, 45, 60, 90]

for angle in angles:
   rad = math.radians(angle)

   sin_val = round(math.sin(rad), 3)
   cos_val = round(math.cos(rad), 3)
      if angle == 90:
      tan_val = "undefined"
   else:
      tan_val = round(math.tan(rad), 3)

   print(f"{angle:3}°   {sin_val:<8} {cos_val:<8} {tan_val}")
```

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Q5. Generate 10 random numbers

```
print("Ten Random Numbers:\n")
for i in range(10):
num = random.randint(1, 100)
print(num)
```

****

Q6. Authentication: Ask username, password and compare

```
username = "Admin"
password = "123"
uname = input("Enter Username: ")
pwd = input("Enter your Password: ")
if(uname == username and pwd == password):
print("Login Sucessfully!")
else:
print("Invalid Username or Password")
```

****

Q7. Authentication: Ask username, password and compare with encryption

```
import hashlib
username = "Admin"
password_hash = hashlib.sha256("123".encode()).hexdigest()
uname = input("Enter Username: ")
pwd = input("Enter Password: ")
pwd_hash = hashlib.sha256(pwd.encode()).hexdigest()
if uname == username and pwd_hash == password_hash:
print("Login successful!")
else:
print("Invalid Username or Password")
```

****

Q8. Authentication: Ask username, password and compare with hashing

```
import hashlib
username = "Admin"
password_hash = hashlib.sha256("123".encode()).hexdigest()
uname = input("Enter Username: ")
pwd = input("Enter Password: ")
pwd_hash = hashlib.sha256(pwd.encode()).hexdigest()
if uname == username and pwd_hash == password_hash:
print("Login successful!")
else:
print("Invalid Username or Password")
```

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Q9 . Convert string "Hello$World" into Base64

```
import base64
original_string = "Hello$World"
string_bytes = original_string.encode("utf-8")
base64_bytes = base64.b64encode(string_bytes)
base64_string = base64_bytes.decode("utf-8")
print("Original String:", original_string)
print("Base64 Encoded:", base64_string)
```

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Q10. Code for String Manipulation

```
s = "Hello World"
reversed_s = s[::-1]
print("Reversed string:", reversed_s)
"""
"""
s = "Hello World"
print("Length of string:", len(s))
"""
"""
s = "Hello World"
char_count = {}
for char in s:
    if char in char_count:
        char_count[char] += 1
    else:
        char_count[char] = 1
print("Character counts:", char_count)
"""

"""
s = "madam"
if s == s[::-1]:
    print(s, "is a palindrome")
else:
```

```
    print(s, "is not a palindrome")
"""

"""
s = "Hello World"
print("Uppercase:", s.upper())
print("Lowercase:", s.lower())
"""

"""
s = "Hello World"
no_space = s.replace(" ", "")
print("Without spaces:", no_space)
"""

"""
s = "hello world"
print("Capitalized:", s.title())
"""

"""
s = "Hello World"
vowels = "aeiouAEIOU"
count = 0
for char in s:
    if char in vowels:
        count += 1
print("Number of vowels:", count)
"""

"""
```

```
s = "12345"
if s.isnumeric():
   print(s, "is numeric")
else:
   print(s, "is not numeric")
"""


"""
s = "Hello World"
substring = "World"
if substring in s:
   print(f"'{substring}' found in string")
else:
   print(f"'{substring}' not found")
```

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