PRACTICAL FILE

OF

PYTHON PROGRAMMING

BACHELOR OF COMPUTER APPLICATIONS (BCA)

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PYTHON PROGRAMMING FILE

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Q1. Write a Python program to calculate number of days between two dates.

Sample dates: (2014, 7, 2), (2014, 7, 11)
 Expected output: 9 days
 Understand (Basic operation) / L2

```python
# Answer 1
from datetime import date

date1 = date(2014, 7, 2)
date2 = date(2014, 7, 11)

days = date2 - date1
print(days.days, "days")
```

Q2. Write a Python program that accepts an integer (n) and computes the value of n + nn + nnn.

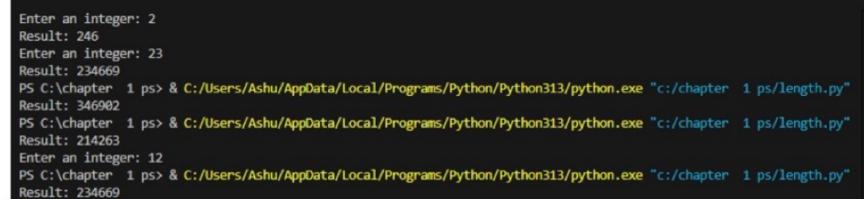**Understand (Pattern recognition) / L2**

```python
# Answer 2
n = int(input("Enter an integer: "))
```

```python
n1 = int("%d" % n)
n2 = int("%d%d" % (n, n))
n3 = int("%d%d%d" % (n, n, n))

print("Result:",         n1          +          n2          +          n3)
```

```
Enter an integer: 2
Result: 246
Enter an integer: 23
Result: 234669
PS C:\chapter  1 ps> & C:/Users/Ashu/AppData/Local/Programs/Python/Python313/python.exe "c:/chapter  1 ps/length.py"
Result: 346902
PS C:\chapter  1 ps> & C:/Users/Ashu/AppData/Local/Programs/Python/Python313/python.exe "c:/chapter  1 ps/length.py"
Result: 214263
Enter an integer: 12
PS C:\chapter  1 ps> & C:/Users/Ashu/AppData/Local/Programs/Python/Python313/python.exe "c:/chapter  1 ps/length.py"
Result: 234669
```

Q3. Ask the user for a number. Depending on whether the number is even or odd, print out an appropriate message.
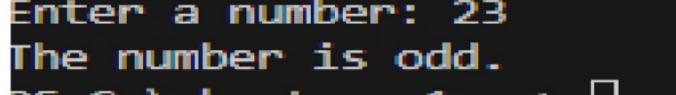
Apply (Control structure & logic) / L3

```python
# Answer 3
num = int(input("Enter a number: "))

if num % 2 == 0:
    print("The number is even.")
else:
    print("The number is odd.")
```

```
Enter a number: 23
The number is odd.
```

Q4. Write a Python program which accepts a sequence of comma-separated numbers and generate a list and a tuple.

Apply (Iterative algorithm) / L3

```python
# Answer 4
values = input("Enter comma-separated numbers: ")
```

```python
list_values = values.split(",")
tuple_values = tuple(list_values)

print("List:", list_values)
print("Tuple:", tuple_values)
```

```
Enter comma-separated numbers: 2 3 5 3
List: ['2 3 5 3']
Tuple: ('2 3 5 3',)
PS C:\chapter  1 ps> 
```

Q5. Write a Python program to calculate the sum of three given numbers. If the values are equal, return thrice of their sum.

Apply (Loop and formula use) / L3

```python
# Answer 5
    x = int(input("Enter first number: "))
    y = int(input("Enter second number: "))
    z = int(input("Enter third number: "))

    sum = x + y + z

    if x == y == z:
        sum = sum * 3

    print("Result:", sum)
```

```
Enter first number: 23
Enter second number: 34
Enter third number: 534
Result: 591
```

Q6. Write a Python program to test whether a passed letter is a vowel or not.

Apply (String manipulation) / L3

```python
# Answer 6
ch = input("Enter a letter: ")

if ch in 'aeiouAEIOU':
    print(ch, "is a vowel.")
else:
    print(ch, "is not a vowel.")
```

```
Enter a letter: a
a is a vowel.
```

Q7. Take a list a = [1,1,2,3,5,8,13,21,34,55,89] and print all elements less than 5.

Extras:
Make a new list with these elements.
Ask user for a number and return elements smaller than that number.
Apply (Array manipulation) / L3

```python
# Answer 7
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

print("Numbers less than 5:")
for i in a:
    if i < 5:
        print(i)

new_list = [i for i in a if i < 5]
print("New list:", new_list)

num = int(input("Enter a number: "))
user_list = [i for i in a if i < num]
print("Numbers       smaller       than",       num,       ":",       user_list)
```

```
Numbers less than 5:
1
1
2
3
New list: [1, 1, 2, 3]
Enter a number: 45
Numbers smaller than 45 : [1, 1, 2, 3, 5, 8, 13, 21, 34]
PS C:\chapter  1 ps> []
```

Q8. Create a program that asks the user for a number and prints all its divisors.

Apply (Modulo Logic) / L3

```
# Answer 8
num = int(input("Enter a number: "))

print("The divisors of", num, "are:")
for i in range(1, num + 1):
    if num % i == 0:
        print(i)
```

```
Enter a number: 23
The divisors of 23 are:
1
23
```

Q9. Take two lists and return a list containing only the common elements (without duplicates).

Apply (List Operations) / L3

```
# Answer 9
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

common = []

for i in a:
```

```
    if i in b and i not in common:
        common.append(i)

print("Common elements:", common)
```

```
PS C:\chapter  1 ps> & C:/Users/Ashu/AppDa
Common elements: [1, 2, 3, 5, 8, 13]
```

Q10. Ask the user for a string and print whether it is a palindrome or not.

Apply (Slicing) / L3

```
# Answer 10
text = input("Enter a string: ")

if text == text[::-1]:
    print("It is a palindrome.")
else:
    print("It is not a palindrome.")
```

```
PS C:\chapter  1 ps> & C:/Users/
Enter a string: hoh
It is a palindrome.
PS C:\chapter  1 ps> []
```

Q11. Let's say I give you a list saved in a variable: a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]. Write one line of Python that takes this list a and makes a new list that has only the even elements of this list in it.

```
# Answer 11
a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
new_list = [x for x in a if x % 2 == 0]
new_list
```

```
a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
new_list = [x for x in a if x % 2 == 0]
new_list
```

```
[4, 16, 36, 64, 100]
```