Lab 8

Name :- Aryan Dilipbhai Langhanoja

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Enrollment No :- 92200133030

CO1: To write, test, and debug simple Python programs

CO2: To implement Python programs with conditional, loops and functions

Task 1:- Implementing While Loop

Python Code:

```
i = 1
while i <= 5 :
    print(i)
    i = i + 1
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3
1
2
3
4
5
PS C:\Users\abc>
```

Task 2:- Implementing While Loop with If-else condition and continue statement

Python Code:

```
i = 0
while i < 9 :
    i += 1
    if i == 3 :
        continue
    print(i)
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
1
2
4
5
6
7
8
9
```

Task 3:- Implementing While Loop with If-else condition and break statement

Python Code:

```
i = 0
while i < 9 :
    if i == 3 :
        break
    print(i)
    i += 1
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
0
1
2
PS C:\Users\abc>
```

Task 4:- Implementing While Loop with If-else pass statement

Python Code:

```
i = 0
while i < 9 :
    i += 1
    if i == 3 :
        pass
    print(i)
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
1
2
3
4
5
6
7
8
9
PS C:\Users\abc>
```

Task 5:- User Define Function

Python Code:

```
def AryanLAnghanoja() :
    print("Hii Aryan Langhanoja")
AryanLAnghanoja()
def Greet(name) :
    print(f"Greetings : {name}")
Greet("Aryan Langhanoja")
def Square(num) :
    return(num**2)
num = int(input("Enter The Number:-"))
print(Square(num))
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/P
Hii Aryan Langhanoja
Greetings : Aryan Langhanoja
Enter The Number:-4
16
```

Task 6:- Function Inside Function

Python Code:

```
def Out() :
    print("Outer Function.")
    def In() :
        print("Inside Function.")
    In()
Out()
```

Output

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
Outer Function.
Inside Function.
```

Task 7:- Lambda Function

Python Code:

```
Lambda  = lambda x:x*3
print(Lambda(5))
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
15
```

Post Lab

Task 1:- Print The Following Pattern

Python Code:

```
for i in range(1,9) :
    for j in range(1,9) :
        print(' #',end=' ')
    print('\n')
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #

 #  #  #  #  #  #  #  #
```

Task 2:- Use for loop to iterate from 0 to 100 and print the sum of all evens and the sum of all odds.

Python Code:

```
even = 0
odd = 0
for i in range(0,101) :
    if(i % 2 == 0) :
        even = even + i
    else :
        odd = odd + i
```

print(f"The Sum of All Even Numbers Is {even} and The Sum of All Odd Number Is {odd} Between 1 to 100")

Output :

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/Programming With Python/Lab Manual/L
The Sum of All Even Numbers Is 2550 and The Sum of All Odd Number Is 2500 Between 1 to 100
```

Task 3 :- Write for loop statement to print the following series:
10, 20, 30,… … 300

Python Code:

```
for i in range(10,301,10) :
    print(i,end=" ")
print('\n')
```

Output:

```
PS D:\Aryan\Semester - 3\Programming With Python\Lab Manual\Lab- 8>  d:; cd 'd:\Aryan\Semester - 3\Programming W
hon\Lab Manual\Lab- 8'; & 'D:\python.exe' 'c:\Users\abc\.vscode\extensions\ms-python.python-2023.16.0\pythonFile
ython\debugpy\adapter/../..\debugpy\launcher' '50673' '--' 'D:\Aryan\Semester - 3\Programming With Python\Lab Ma
b- 8\07-08-2023 LAB-8.py'
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300
```

Task 4 :- Write a while loop statement to print following series
105, 98, 91 …….. 7.

Python Code:

```
i = 105
while(i > 0) :
   print(i,end=' , ')
   i = i - 7
print("\n")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/P
105 98 91 84 77 70 63 56 49 42 35 28 21 14 7
```

Task 5:- Write a program to check whether a number is prime or not using while loop
Python Code:

```
num = int(input("Enter The Number :- "))
div = 0
for i in range(2,num) :
   if (num % i == 0) :
      div += 1
```

```
        break
if( div > 0 ) :
   print(f"{num} Is Not A Prime Number.")
else :
   print(f"{num} Is A Prime Number.")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/P
Enter The Number :- 13
13 Is A Prime Number.
```

Task 6 :- Write a program to display the number names of the digits of a number entered by user, for example if the number is 431 then output should be 134

Python Code:

```
num1 = input("Enter The Number:-")
print(f"The Reverse Of {num1} Is {num1[::-1]}")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/Programming With Python/Lab
Enter The Number:-567
The Reverse Of 567 Is 765
```

Task 7 :- Write a program to convert binary to decimal

Python Code:

```
num = input("Enter The Binary Number:-")
legth = len(num)
numint = int(num)
ans = 0
for i in range(0,legth) :
   digit = numint % 10
   ans = ans + (digit * (2**i))
   numint = numint / 10
print(f"The Decimal Equvivalent Of Binary Number {num} Is {int(ans)}")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/Programming With
Enter The Binary Number:-111
The Decimal Equvivalent Of Binary Number 111 Is 7
```

Task 8 :- Write a program to check whether a number is palindrome or not

Python Code:

```
num8 = int(input("Enter A Number :- "))
temp = num8
rev = 0
while(temp != 0) :
    rev = rev*10 + temp%10
    temp = int(temp  / 10)
if (num8 == rev) :
    print(f"{num8} Is A Palindrome Number.")
else :
    print(f"{num8} Is Not A Palindrome Number.")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
Enter A Number :- 2345432
2345432 Is A Palindrome Number.
```

Task 9 :- Write a program to accept 10 numbers from the user and display the largest and smallest number.

Python Code:

```
list9 = []
num = 0
while (num < 10) :
    temp = int(input(f"Enter A Number - {num+1} :- "))
    list9.append(temp)
    num += 1
print(f"Largest And Smallest Number Of {list9} Is {max(list9)} and {min(list9)}")
```

Output:

```
PS D:\Aryan\Semester - 3\Programming With Python\Lab Manual\Lab- 8>  d:; cd 'd:\Aryan\
hon\Lab Manual\Lab- 8'; & 'D:\python.exe' 'c:\Users\abc\.vscode\extensions\ms-python.p
ython\debugpy\adapter/../..\debugpy\launcher' '50855' '--' 'D:\Aryan\Semester - 3\Prog
b- 8\07-08-2023 LAB-8.py'
Enter A Number - 1 :- 67
Enter A Number - 2 :- 54
Enter A Number - 3 :- 32
Enter A Number - 4 :- 78
Enter A Number - 5 :- 56
Enter A Number - 6 :- 78
Enter A Number - 7 :- 23
Enter A Number - 8 :- 56
Enter A Number - 9 :- 90
Enter A Number - 10 :- 32
Largest And Smallest Number Of [67, 54, 32, 78, 56, 78, 23, 56, 90, 32] Is 90 and 23
PS D:\Aryan\Semester - 3\Programming With Python\Lab Manual\Lab- 8>
```

Task 10 :- Write a program to display all the numbers which are divisible by 13 but not 3 between 100 and 500.

Python Code:

```
for i in range(100,501) :
   if (i % 13 == 0 and i % 3 != 0) :
      print(i,end=" ")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/
Enter A Number :- 2345432
2345432 Is A Palindrome Number.
```

Task 11 :- Write a program to print only odd numbers from the user list using while loop.

Python Code:

```
user_numbers = []
while True:
   num = input("Enter a number (or 'done' to finish): ")
   if num.lower() == 'done':
      break
   num = int(num)
   if num % 2 != 0:
      user_numbers.append(num)
print("Odd numbers in the list:")
for odd_num in user_numbers:
   print(odd_num,end=" ")
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3
Enter a number (or 'done' to finish): 34
Enter a number (or 'done' to finish): 23
Enter a number (or 'done' to finish): 34
Enter a number (or 'done' to finish): 56
Enter a number (or 'done' to finish): 67
Enter a number (or 'done' to finish): 78
Enter a number (or 'done' to finish): 19
Enter a number (or 'done' to finish): 94
Enter a number (or 'done' to finish): 32
Enter a number (or 'done' to finish): 90
Enter a number (or 'done' to finish): 76
Enter a number (or 'done' to finish): done
Odd numbers in the list:
23 67 19
```

Task 12 :- Write a Python program to find those numbers which are divisible by 7 and multiples of 5, between 1500 and 2700 (both included).

Python Code:

```
result = []
for num in range(1500, 2701):
    if num % 7 == 0 and num % 5 == 0:
        result.append(num)
print("Numbers divisible by 7 and multiples of 5 between 1500 and 2700:")
print(result)
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/Programming With Python/Lab Manual/Lab
Numbers divisible by 7 and multiples of 5 between 1500 and 2700:
[1505, 1540, 1575, 1610, 1645, 1680, 1715, 1750, 1785, 1820, 1855, 1890, 1925, 1960, 1995, 203
, 2205, 2240, 2275, 2310, 2345, 2380, 2415, 2450, 2485, 2520, 2555, 2590, 2625, 2660, 2695]
```

Task 13 :- Write a Python program to find those numbers which are divisible by 7 and multiples of 5, between 1500 and 2700 (both included).

Python Code:

```
result = []
for num in range(1500, 2701):
    if num % 7 == 0 and num % 5 == 0:
        result.append(num)
print("Numbers divisible by 7 and multiples of 5 between 1500 and 2700:")
print(result)
```

Output:

```
PS C:\Users\abc> & D:/python.exe "d:/Aryan/Semester - 3/Programming
Choose an option:
1. Celsius to Fahrenheit
2. Fahrenheit to Celsius
3. Quit
Enter your choice (1/2/3): 1
Enter temperature in Celsius: 60
60.0 Celsius is equal to 140.00 Fahrenheit
Choose an option:
1. Celsius to Fahrenheit
2. Fahrenheit to Celsius
3. Quit
Enter your choice (1/2/3): 2
Enter temperature in Fahrenheit: 45
45.0 Fahrenheit is equal to 7.22 Celsius
Choose an option:
1. Celsius to Fahrenheit
2. Fahrenheit to Celsius
3. Quit
Enter your choice (1/2/3): 3
Exiting the program.
```