Jaypee University of Engineering and Technology,
Guna

[LAB ACTIVITY 2]

Advanced Programming (18B17CI373)

Name: Palash Mishra

Enroll No. : 201B172

1. Write a program to input two numbers and if their sum is equal to 10 and their multiplication is less than 20, print the text string "incorrect."

Solution:

```
A=int(input("Number 1 : "))
B=int(input("Number 2 : "))
if (A+B)==10 and (A*B)<20 :
  print("Incorrect")
```

Output:

```
Number 1 : 9
Number 2 : 1
Incorrect
```

2. Write a program for finding area and circumference of a circle.

Solution:

```
A=int(input("Enter Radius : "))
print("Circumference of circle : {}".format(2*3.14*A))
print("Area of circle : {}".format(3.14*A*A))
```

Output:

```
Enter Radius : 5
Circumference of circle : 31.400000000000002
Area of circle : 78.5
```

3. Write a program for calculating simple and compound interest.

Solution:

```
P=int(input("Enter Principle : "))
R=int(input("Enter Rate : "))
t=int(input("Enter Time : "))
SI = (P*T*R)/100
CI = P*(1+R/100)*t-P
print("Simple int: {}".format(SI))
print("compound int : {}".format(CI))
```

Output:

```
Enter Principle : 1500
Enter Rate : 2
Enter Time : 3
Simple int: 30.0
compound int : 3090.0
```

4. Write a program to convert temperature from degree centigrade to Fahrenheit.

Solution:

```
Cent=float(input("Enter temp in centigrade : "))
Farh=Cent*1.8+ 32
print("Temp in Fahrenheit : {}".format(Farh))
```

Output:

```
Enter temp in centigrade : 36
Temp in Fahrenheit : 96.8
```

5. Write a program to calculate average of three numbers.

Solution:

```
A=int(input("Number 1 : "))
B=int(input("Number 2 : "))
C=int(input("Number 3 : "))
print("Average : {}".format((A+B+C)/3))
```

Output:

```
Number 1 : 1
Number 2 : 2
Number 3 : 3
Average : 2.0
```

6. Write a program to calculate sum of 6 subjects and find percentage obtained.

Solution:

```
S1=int(input("Subject 1 : "))
S2=int(input("Subject 2 : "))
S3=int(input("Subject 3 : "))
```

```
S4=int(input("Subject 4 : "))
S5=int(input("Subject 5 : "))
S6=int(input("Subject 6 : "))
Sum=S1+S2+S3+S4+S5+S6
Per=Sum/6
print("Sum : {} And Percentage : {}".format(Sum,Per))
```

Output:

```
Subject 1 : 50
Subject 2 : 72
Subject 3 : 63
Subject 4 : 54
Subject 5 : 96
Subject 6 : 70
Sum : 405 And Percentage : 67.5
```

7. Write a program to print swapping of two numbers without using third variable.

Solution:

```
A=int(input("Number 1 : "))
B=int(input("Number 2 : "))
print("Before Swapping : A = {} and B= {} ".format(A,B))
A=A+B
B=A-B
A=A-B
print("After Swapping : A = {} and B= {} ".format(A,B))
```

Output:

```
Number 1 : 5
Number 2 : 10
Before Swapping : A = 5 and B= 10
After Swapping : A = 10 and B= 5
```

8. Write a program to find gross salary (GS). [Given: DA=(10*BS)/100, TA=(12*BS)/100, GS=BS+TA+DA]

Solution:

```
BS=int(input("Base salary : "))
DA=(10*BS)/100
TA=(12*BS)/100
GS=BS+TA+DA
print("Gross salary : {}".format(GS))
```

Output:

```
Base salary : 15000
Gross salary : 18300.0
```

9. Write a program to find greatest in 3 numbers.

Solution:

```
A=int(input("Number 1 : "))
B=int(input("Number 2 : "))
C=int(input("Number 3 : "))
if (A>B) and (A>C) :
  print("A is Greater")
elif (B>C) and (B>A):
  print("B is Greater")
else :
  print("C is greater")
```

Output:

```
Number 1 : 7
Number 2 : 9
Number 3 : 15
C is greater
```

10. Write a program to find whether a given no. is even or odd.

Solution:

```
Num=int(input("Number : "))
if ((Num%2)==0) :
  print("Number is even ")
else:
  print("Number is odd ")
```

Output:

```
Number : 20
```

Number is even

11. If the marks obtained by a student in five different subjects are input through the keyboard, find out the aggregate marks and percentage marks obtained by the student. Assume that the maximum marks that can be obtained by a student in each subject is100.

Solution:

```
S1=int(input("Subject 1 : "))
S2=int(input("Subject 2 : "))
S3=int(input("Subject 3 : "))
S4=int(input("Subject 4 : "))
S5=int(input("Subject 5 : "))
Sum=S1+S2+S3+S4+S5
Per=Sum/6
print("Sum : {} And Percentage : {}".format(Sum,Per))
```

Output:

```
Subject 1 : 45
Subject 2 : 68
Subject 3 : 95
Subject 4 : 14
Subject 5 : 26
Sum : 248 And Percentage : 41.333333333333336
```

12. The length & breadth of a rectangle and radius of a circle are input through the keyboard. Write an algorithm to calculate the area & perimeter of the rectangle, and the area & circumference of the circle.

Solution:

```
L=int(input("Length : "))
B=int(input("Breadth : "))
R=int(input("Radius : "))
print("Perimeter of Rectangle : {}".format(L*B))
print("Area of Rectangle : {}".format(2*(L+B)))
print("Circumference of circle : {}".format(2*3.14*R))
print("Area of circle : {}".format(3.14*R*R))
```

Output:

Length : 5
Breadth : 5
Radius : 4
Perimeter of Rectangle : 25
Area of Rectangle : 20
Circumference of circle : 25.12
Area of circle : 50.24

13. A cashier has currency notes of denominations 10, 50 and 100. If the amount to be withdrawn is input through the keyboard in tens, hundreds or thousands, find the total number of currency notes of each denomination the cashier will have to give to the withdrawer.

Solution:

```
A=int(input("Enter Amount To Be Withdrawn : "))
Notes100=A//100
A=A%100
Notes50=A//50
A=A%50
Notes10=A//10
print("100Rs notes : {} || 50Rs notes : {} || 10Rs notes : {}".format(Notes100,Notes50,Notes10))
```

Output:

```
Enter Amount To Be Withdrawn : 690
100Rs notes : 6 || 50Rs notes : 1 || 10Rs notes : 4
```

14. If the total selling price of 15 items and the total profit earned on them is input through the keyboard, write a program to find the cost price of one item.

Solution:

```
sp = int(input("Enter the selling price of the item: "))
profit = int(input("Enter the profit earned on that items: "))

cp =(100/(100 + profit) )* sp
print("Cost price is:",cp)
```

Output:

Enter the selling price of the item: 156
Enter the profit earned on that items: 140
Cost price is: 65.0

15. If a five-digit number is input through the keyboard, write a python program to print a new number by adding one to each of its digit. For example, if the number that is input is 12391 then the output should be displayed as 23402. [If digit is 9 it should be converted into 0].

Solution:

```
value=int(input("Enter % digit Number :"))
dig1 = value % 10;
value = value // 10;
dig2 = value % 10;
value = value // 10;
dig3 = value % 10;
value = value // 10;
dig4 = value % 10;
value = value //10;
dig5 = value % 10;
dig1 = ((dig1+1)%10);
dig2 = ((dig2+1)%10);
dig3 = ((dig3+1)%10);
dig4 = ((dig4+1)%10);
dig5 = ((dig5+1)%10);
print("New Number :",dig5,dig4,dig3,dig2,dig1)
```

Output:

Enter % digit Number :56789
New Number : 6 7 8 9 0

16. Write a program that asks the user to input 10 integers, and then prints the largest odd number that was entered. If no odd number was entered, it should print a message to that effect.

Solution:

```
high=0
for i in range(10) :
```

```
  A=int(input())
  if A%2!=0:
    if A>high:
      high=A
if high==0:
  print("No Odd Number")
else:
 print("Highest odd number : ",high)
```

Output:

1.)

```
2
4
6
8
10
12
14
16
18
20
No Odd Number
```

2.)

```
1
2
3
4
5
6
7
8
9
10
Highest odd number :  9
```

17. Write a program to prints the integer cube root, if it exists, of an integer. If the input is not a perfect cube, it prints a message “the number is not perfect cube” otherwise it prints “the number is perfect cube”.

Solution:

```
x=int(input("Enter the number: "))
temp=x**(1.0/3.0)
if temp%1==0:
    print("The number is a perfect cube")
else:
    print("The number is not a perfect cube")
```

Output:

```
Enter the number: 27
The number is a perfect cube
```

18. Write a program to print all even numbers between 1 to 100.

Solution:

```
start = int(input("Enter the start of range: "))
end = int(input("Enter the end of range: "))

for num in range(start, end + 1):

    if num % 2 == 0:
        print(num, end= " ")
```

Output:

```
Enter the start of range: 5
Enter the end of range: 10
6 8 10
```

19. Write a program to print all odd number between 1 to 100.

Solution:

```
start = int(input("Enter the start of range: "))
end = int(input("Enter the end of range: "))

for num in range(start, end + 1):

    if num % 2 != 0:
        print(num, end= " ")
```

Output:

```
Enter the start of range: 5
Enter the end of range: 10
5 7 9
```

20. Write a program to find HCF (GCD) of two numbers.

Solution:

Output:

21. Write a program to find LCM of two numbers.

Solution:

```
a=int(input("Enter the first number: "))
b=int(input("Enter the second number: "))
if(a>b):
    min=a
else:
    min=b
while(1):
    if(min%a==0 and min%b==0):
        print("LCM is:",min)
        break
```

Output:

```
Enter the first number: 5
Enter the second number: 80
LCM is: 80
```