**Jaypee University of Engineering and Technology**

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Advanced Programming Lab Record

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**Lab Exercise 1**

#E.Calculate simple interest on shell.

p=int(input("Enter the Principal Amount = "))

r=int(input("enter the monthly intrest rate = "))

t=int(input("Enter the number of months = "))

si=(p\*r\*t)/100

print("The simple intrest is ",si)

#F.Calculate compound interest.

p=float(input("Enter the Principal amount = "))

r=float(input("Enter the rate of intrest = "))

n=int(input("Enter the number of intrest compounded(anually) = "))

t=int(input("Enter the time in years = "))

CI=(p\*(1+(r/n))\*\*(n/t))-p

print("Componud intrest on given principal amount = ",CI)

# G.Find the value of force when mass of a body and its acceleration is given. F = m \* a

m=float(input("Enter the mass = "))

a=float(input("Enter the acceleration = "))

F=m\*a

print("Total Force on the given object is {}".format(F))

# H.Convert a temperature from Celsius to Fahrenheit.

c=float(input("Enter the temperature in celsius = "))

f=c\*(9/5)+32

print("The temperature in fahrennite is ",f)

# I. Convert a temperature from Fahrenheit to Celsius.

f=float(input("Enter the temperature in faherenite = "))

c=(f-32)\*5/9

print("The temperature in celcius is ",c)

# J. Compute the area of circle, when its diameter is given.

r=float(input("Enter the Radius = "))

A= 3.14159\*r\*r

print("Area of Circle = ",A)

# K.Compute the volumeof a cylinder, when its height and diameter is given.

h=float(input("Enter the Height = "))

d=float(input("Diameter of Cylinder = "))

V=3.14159\*((d/2)\*\*2)\*h

print("Volume of Cylinder is ",V)

# L.Compute the surface area of a cylinder, when its height and diameter is given.

h=float(input("Enter the Height of cylinder = "))

d=float(input("Enter the Diameter of cylinder = "))

sa=2\*3.14159\*(d/2)\*((d/2)+h)

print("The Surface area of cylinder is ",sa)

# M.Compute the area of a rectangular prism, when it’s all sides is given.

h=float(input("Enter the height of prism = "))

w=float(input("Enter the width of prism = "))

l=float(input("Enter the length of prism = "))

ar=2\*(h\*l+h\*w+l\*w)

print("The surfase area is ",ar)

# Compute the volume of a rectangular prism, when it’s all sides are given.

h=float(input("Enter the height of prism = "))

b=float(input("Enter the width of prism = "))

l=float(input("Enter the length of prism = "))

V=l\*b\*h

print("Volume of prism is ",V)

**Lab Exercise 2**

#1: Write a python 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."

a=int(input("Enter the Number 1 = "))

b=int(input("Enter the Number 2= "))

if a+b==10 and a\*b<20:

print("Incorrect")

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

r=int(input("Enter the radius = "))

a=3.14159\*r\*r

c=2\*3.14159\*r

print("Area of circle = ",a)

print("circumference of circle = ",c)

#3: Write a python program for calculating simple and compound interest.

p=int(input("Enter the Principle amount = "))

r=int(input("Enter the rate of interest = "))

t=int(input("Enter the Time in years = "))

si=p\*r\*t/100

n=int(input("Enter the fryquency = "))

ci=(p\*(1+r/n)\*\*n\*t)-p

print("Simple intrest = ",si)

print("Compund intrest = ",ci)

#4: Write a python program to convert temperature from degree centigrade to Fahrenheit. c=int(input(" C = ")) f=(c\*9/5)+32 print("F=",f)

#5: Write a python program to calculate average of three numbers. a=int(input("a=")) b=int(input("b=")) c=int(input("c=")) av=(a+b+c)/3 print("Average = ",av)

#6: Write a python program to calculate sum of 6 subjects and find percentage obtained. print("Enter marks out of 30") a=int(input("s1=")) b=int(input("s2=")) c=int(input("s3=")) d=int(input("s4=")) e=int(input("s5=")) f=int(input("s6=")) sm=a+b+c+d+e+f pc=sm\*100/(6\*30) print("Sum = ",sm," Percentage = ",pc)

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

a=int(input("a="))

b=int(input("b="))

a,b=b,a

print("a=",a , "b=",b)

#8: Write a python program to find gross salary (GS).

# [Given: DA = (10\*BS)/100, TA = (12\*BS)/100, GS = BS+TA+DA ]

bs=int(input("BS= "))

da=10\*bs/100

ta=12\*bs/100

gs=bs+da+ta

print("Gross Salary = ",gs)

#9: Write a python program to find greatest in 3 numbers.

a=int(input("a = "))

b=int(input("b = "))

c=int(input("c = "))

if a>b and a>c:

print("a is greater")

elif b>a and b>c:

print("b is greater")

elif c>a and c>b:

print("c is greater")

else:

print("all are same")

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

n=int(input("Enter the number = "))

if n%2==0:

print("Number is even")

else :

print("number is odd")

#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 is 100.

print("Enter marks out of 100")

a=int(input("s1="))

b=int(input("s2="))

c=int(input("s3="))

d=int(input("s4="))

e=int(input("s5="))

agm=(a+b+c+d+e)/5

pc=(a+b+c+d+e)\*100/(5\*100)

print("Agregate marks = ",agm," Percentage = ",pc)

# 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.

l=int(input("Length = "))

b=int(input("Breadth = "))

r=int(input("Radius = "))

ac=3.14\*r\*r

cc=2\*3.14\*r

ar=l\*b;

pr=2\*(l+b)

print("area of circle = ",ac)

print("circumference of circle = ",cc)

print("area of rectangle = ",ar)

print("Perimeter of rectangle = ",pr)

#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.

wa=float(input("Withdrawl Amount = "))

n100=n50=n10=0

while wa>=10:

if wa>=100:

wa=wa-100

n100+=1

elif wa>=50:

wa=wa-50

n50+=1

elif wa >=10:

wa=wa-10

n10+=1

else:

print("Wrong Input")

print("Rs. 100 Notes = ",n100 )

print("Rs. 50 Notes = ",n50 )

print("Rs. 10 Notes = ",n10 )

print("Remaining amount = ",wa)

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

sp=float(input("Selling Price = "))

pr=float(input("Profit = "))

cp=sp-pr

print ("cost Price = ",cp)

#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 it digits. 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].

n=int(input("Enter the number = "))

m=0

while n!=0:

r=n%10+1

n=n//10

if(r==10):

r=0

m=r+(m\*10)

print("New Number = ",m)

#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.

t=10

m=0

while t:

n=int(input("-- "))

if n%2!=0 and n>m:

m=n

t-=1

print("Largest odd number is = ",m)

#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”.

n=int(input(" "))

r=round(n\*\*(1/3))

if r\*\*3==n:

print("The number is perfect cube. ",r)

else:

print("The number is not perfect cube.")

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

for i in range(2,101,2):

print(i)

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

for i in range(1,100,2):

print(i)

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

a=int(input("Enter the 1st number = "))

b=int(input("Enter the 2ed number = "))

for i in range(1,a):

if a%i==0 and b%i==0:

f=i

print("HCF = {}".format(f))

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

a=int(input("Enter the 1st number = "))

b=int(input("Enter the 2ed number = "))

for i in range(1,a):

if a%i==0 and b%i==0:

f=i

lcm=(a\*b)/f

print(lcm)