Assignment-1

Q1 Write algorithm that checks two numbers and print maximum of two numbers.

a. Initialize two numbers, a=10, b=15
b. Compare: If(a>b)
   Print(a)
   Else
   Print(b)
c. Stop.

Q2 Write an algorithm that checks two numbers and print minimum of two numbers.

a. Initialize two numbers, a=10, b=15
b. Compare: If(a<b)
   Print(a)
   Else
   Print(b)
c. Stop.

Q3 Write an algorithm that checks two numbers and print average of two numbers.

a. Initialize two numbers, a=10, b=20
b. Calculate sum=a+b
c. Calculate result=sum/2
d. Print result.
e. Stop.

Q4 Write a program to print 1 to 10 using while loop.

a. Set i=1
b. While(i<=10)
   { print(i)
   i=i+1
   }

Q5 write a program to print 10 to 1 using while loop.

a. Set i=10
b. While(i>=1)
   { print(i)

i=i-1
}

Q6 write a program to print 2,4,6,8,10 using for loop and while loop.

a. Using while loop:
    a. Set i=2;
    b. While(i>10)
        { print(i)
          Incrementing by 2: i=i+2
        }

b. Using for loop:

a. for(i=2; i>10; i+2)

{ print(i)

}

Q7 write a program to print 10,8,6,4,2 using for and while loop.

b. Using while loop:
    c. Set i=10;
    d. While(i>2)
        { print(i)
          decrementing by 2: i=i-2
        }

b. Using for loop:

a. for(i=10; i>2; i-2)

{ print(i)

}

Assignment-2

Q1 Write an algorithm that checks if a number is prime number. Take the user input.

a. Get a number from user and store it in 'num'
b. Set i=2, j=num/2
c. If(num/2==0)
        Print ("not prime")

Else

i=i+1

If (i<=j)

Repeat step c.

Else

Print(“prime”)

d. Stop

Q2 write algorithm to calculate power of a number.

a. Get two numbers, num and power.
b. Set i=0, result=1.
c. If (i<power)

result=result * num
i=i+1
repeat step c.

else

print(result)

d. stop

Assignment-3

Q1 Use a for loop to calculate sum of numbers till n, where n is taken from user.

a. Get upper limit number, ul
b. Set sum=0
c. Using for loop to reach all numbers till num:
For (i=0; i<=ul; i++)
{ sum=sum+i
}
d. Print sum
e. stop

Q2 write algorithm that print sum of N numbers.

a. Get number, num
b. Set sum=0
c. Using for loop to get all numbers till num:
For (i=0; i<=num; i++)

{ sum=sum+i
}

d. Print sum
e. stop

Q3 Write an algorithm to print multiplication table of a number entered by user.

a. Get number for table, num
b. Set prod = 1
c. Using for loop for multiplication:
For (i=1; i<=10; i++)
{ prod = num*i
Print(prod)
}
d. stop

Q4 Write an algorithm to swap 2 numbers, where numbers are taken from user.

a. Get two numbers from the user, a and b
b. Set temp=a
c. Assign value of b to a, a=b
d. Now, assign the old value of a which was stored in temp , b=temp
e. stop

Assignment-4

Q1 Check if a year is leap year or not.

a. Get year, year
b. We will check two conditions here:
If(year%400==0)
{ print (leap year)
}
Else if(year%4==0 && year%100!=0)
Print(leap year)

Else
Print(not a leap year)
c. stop

Q2 Write algorithm to print all odd numbers backward from 99 to 1.

a. Using for loop to reach every number from 99 to 1:

```
For (i=99; i>=1; i--)
{Check if number is odd:
   if (i/2! = 0)
         Print(i)
}
```

Q3 Java program to calculate Distance between two points.

a. Get two points, x1, y1 and x2, y2
b. Calculate: a=(x2-x1) and b=(y2-y1)
c. Then c= a^2 + b^2
d. Distance = square root of c.
e. Print Distance

Q4 Write algorithm to print sum of even and odd digits considering 10 numbers are taken from user.

a. Get num array of 10 numbers.
b. Set sum_even=0, sum_odd=0
c. Using for loop to reach every number in array:

```
For (i=0; i<10; i++)
{Check if number is even or odd:
  if (num/2 ==0)
         sum_even=sum_even +num

  Else
         sum_odd = sum_odd + num
}
```

d. Print sum_even
e. Print sum_odd
f. Stop

Q5 Calculate product of digits of number.

a. Get number, num
b. Set prod=1
c. Using while loop for getting next digit of the number:

```
While(num>0)
{ To get next digit of the number:
    prod= num%10 *prod
To get the remaining digits of the number:
  Num=num/10
}
```

d. Print prod

e. Stop

Q6 WAP to print first x terms of the series 3N+2 which are not multiples of 4.

a. Get value of x
b. Set count = 0
c. Using for loop to get the next number in the series:

```
For (i=0; count<=x; i++)
{ a = 3i+2
  Checking if its multiple of 4:
  If (a/4 != 0)
        Print a
        count++
}
```

d. Stop

Q7 Write an algorithm to find Compound interest, provided principle, time and ROI are taken by user.

a. Get principle, time and ROI
b. Using for loop for calculating the rate with respect to time.

```
For (i=0; i<=time; i++)
{ rate=(1+roi/100)*rate
}
```

c. Final compound interest, CI = principle*rate
d. Print(CI)