**ASSSIGNMENT 4**

**NAME:-Archana Adhikari**

**Roll No. :- 191845**

**Write an algorithm and computer program to fit a curve y= ax^2+bx+c for given sets of (x;y;g.0=1,……,x) values by least square method.**

ALGORITHM:-

STEP 1: start

STEP 2: read n

STEP 3: initialize sumx=0, sumx^2=0, sumy=0, sumxy=0, sumx^3=0, sumx^4=0, sumx^2y=0

STEP 4: initialize i=0

STEP 5: repeat step 5 to 7 until i<n

STEP 6: read x,y

STEP 7: sumx= sumx+x

Sum x^2= sumx^2 +pow(x,2)

Sum x^3= sumx^3+pow(x,3)

Sum x^4= sumx^4 +pow(x,4)

Sum y= sumy +y

Sum xy= sumxy+x+y

Sum x^2y= sumx^y +pow(x,2)\*y

STEP 8: increment I by 1

STEP 9: assign

a[0][0]=n

a[0][1]=n

a[0][2]=n

a[0][3]=n

a[1][0]=n

a[1][1]=n

a[1][2]=n

a[1][2]=n

a[1][3]=n

a[2][0]=n

a[2][1]=n

a[2][2]=n

a[2]3]=n

STEP 10: initialize i=0

STEP 11: repeat steps 11 to 15 until i<3

STEP 12: initialize j=0

STEP 13: repeat step 13 to 14 until j<=3

STEP 14: write a[i][j]

STEP 15: increment j by 1

STEP 16: increment I by 1

STEP 17: initialize k=0

STEP 18: repeat step 18 to 27 until k<=2

STEP 19: initialize i=0

Repeat step 20 to 26 until i<=2

STEP 20: if I not equal to k

STEP 21: Assign 4= a[i][k]/a[k][k]

STEP 22: initialize j=k

STEP 23: repeat step 24 to 25 until j<=3

STEP 24: assign a[i][j]= a[i][j] – 4\* a[k][j]

STEP 25: increment j by 1

STEP 26: increment I by 1

STEP 27: increment k by 1

STEP 28: initialize I =0

STEP 29: repeat step 31 to 33 until i<3

STEP 30: assign b[i]= a[i][3]/a[i][j]

STEP 31: write I, b[j]

STEP 32: increment I by 1

STEP 33: write b[2], b[i], b[0]

STEP 34:stop