#include<stdio.h>

#include<math.h>

double mean(double arr[],int n){

double sum = 0.0;

for(int i=0;i<n;i++){

sum += arr[i];

}

return sum / n ;

}

double var(double arr[],int n ){

double sum1 = 0.0,value;

for(int i = 0;i<n;i++){

sum1 +=arr[i]\*arr[i];

}

value = sum1/n - mean(arr,n)\*mean(arr,n);

return value ;

}

main(){

int n,N ;

printf("Enter N : ");

scanf("%d",&N);

printf("Enter n : ");

scanf("%d",&n);

double p[N];

printf("Enter the population values : \n");

for(int i=0;i<N;i++){

scanf("%lf",&p[i]);

}

double s\_mean[125],p\_mean,p\_var,mean\_of\_means,var\_of\_means,exp\_var;

int count = 0;

for(int i=0;i<N-n+1;i++){

for(int j=i+1;j<N-n+2;j++){

for(int k=j+1;k<N-n+3;k++){

s\_mean[count]=(p[i]+p[j]+p[k])/3;

count++;

}

}

}

mean\_of\_means = mean(s\_mean,count);

p\_mean = mean(p,N);

var\_of\_means=var(s\_mean,count);

p\_var = var(p,N);

exp\_var=(N-n)\*p\_var/((N-1)\*n);

printf("mean of sample means is %lf\n",mean\_of\_means);

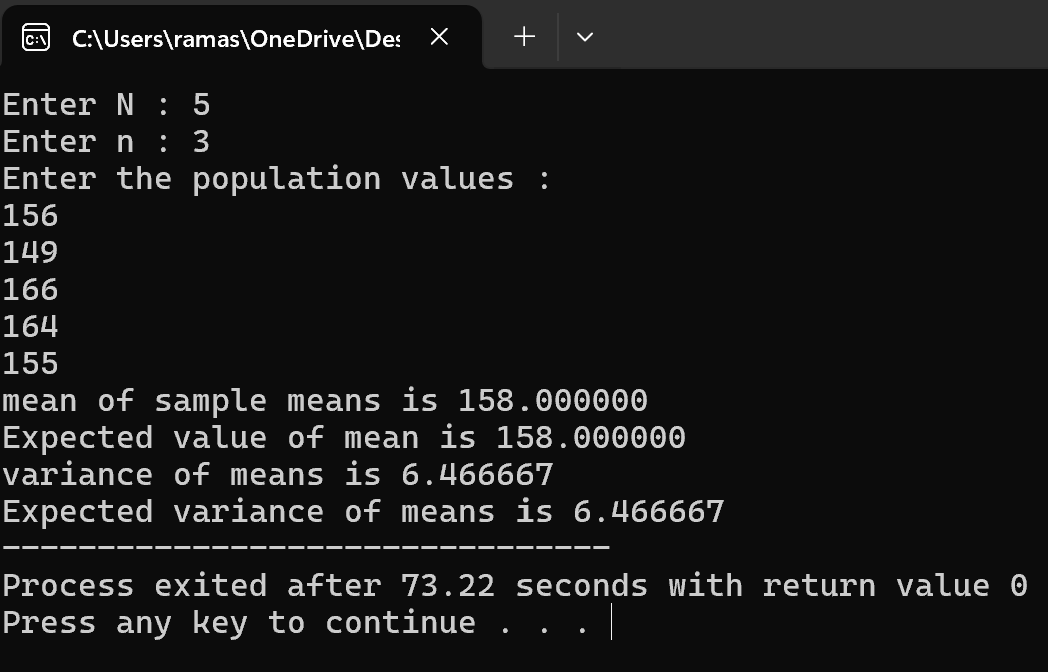
printf("Expected value of mean is %lf\n",p\_mean);

printf("variance of means is %lf\n",var\_of\_means);

printf("Expected variance of means is %lf",exp\_var);

}

**Output :**

****