Assignment 3

1. Write a C++ program that initializes the elements of an array to values: 32, 27, 64, 18, 95, 14, 90, 70, 60, 37, prints the array elements and compute their sum .

```
#include <iostream>
#include <iomanip>
#include <conio.h>
int main()
{
   // use initializer list to initialize array n
   int n[ 10 ] = { 32, 27, 64, 18, 95, 14, 90, 70, 60, 37 };
   int total = 0;
   cout << "Element" << setw( 13 ) << "Value" << endl;
   // output each array element's value
   for ( int i = 0; i < 10; i++ )
      cout << setw( 7 ) << i << setw( 13 ) << n[ i ] << endl;
   for ( int i = 0; i < 10; i++ )
         total += a[ i ];
   cout << "Total of array elements: " << total << endl;
   getch();
   return 0;
} // end main
```

2. Write a C++ program to Set array s to the even integers from 2 to 20.

```
#include <iostream>
#include <iomanip>
int main()
{
   // constant variable can be used to specify array size
   const int arraySize = 10;
   int s[ arraySize ]; // array s has 10 elements
   for ( int i = 0; i < arraySize; i++ ) // set the values
      s[ i ] = 2 + 2 * i;
   cout << "Element" << setw( 13 ) << "Value" << endl;
```

```
   // output contents of array s in tabular format
   for ( int j = 0; j < arraySize; j++ )
      cout << setw( 7 ) << j << setw( 13 ) << s[ j ] << endl;
   return 0;
} // end main
```

3. Write a C++ program to input element of two 3x3 arrays and compute their sum.

```
#include<stdio.h>
#include<conio.h>
void main()
{
 const int n = 3;
 int i, j;
 int A[n][n], B[n][n], C[n][n];

 for(i=0;i<n;i++)
  {
   printf("\n row%2d:\n enter %d integers ",i+1,n);
   for(j=0;j<n;j++)
      scanf("%d",&A[i][j]);
  }
 printf("\n------------------------------");

 for(i=0;i<n;i++)
  {
   printf("\n row%2d:\n enter %d integers ",i+1,n);
   for(j=0;j<n;j++)
        scanf("%d",&B[i][j]);
  }

for(i=0;i<n;i++)
   for(j=0;j<n;j++)
        C[i][j] = A[i][j]+B[i][j];


 printf("\n Sum matrix: ");
 for(i=0;i<n;i++)
  {
```

```
   printf("\n");
   for(j=0;j<n;j++)
     printf("  %3d",C[i][j]);
  }
getch();
 }
```

4. Write C++ program to input matrix A (2x3) and matrix B (3x4) and compute matrix C = A*B.

```
#include<iostream>
#include<conio.h>
int main()
{
 const int m = 2;
 const int p = 3;
 const int n = 4;
 int i, j, k;
 int A[m][p], B[p][n], C[m][n];
 for(i=0;i<m;i++)
 {
   cout<<"\n row"<<(i+1)<< ":\n enter "<<p<<" integers ";
   for(j=0;j<p;j++)
     cin>>A[i][j];
 }

 cout<<"\n--------------------------------";

 for(i=0;i<p;i++)
 {
  cout<<"\n row"<<(i+1)<<":\n enter "<<n<<" integers ";
   for(j=0;j<n;j++)
      cin>>B[i][j];
 }

 for(i=0;i<m;i++)
   for(j=0;j<n;j++)
   {
     C[i][j] = 0;
```

```
     for(k=0;k<p;k++)
        C[i][j] += A[i][k]*B[k][j];
   }

 cout<<"\n Product matrix: ";

 for(i=0;i<m;i++)
 {
  cout<<"\n\n";
  for(j=0;j<n;j++)
    cout<<C[i][j]<<"  ";
 }

getch();
return 0;
}
```