DSTL LAB ASSIGNMENT- 4

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1. WAP TO FIND CATERSIAN PRODUCT OF TWO SETS

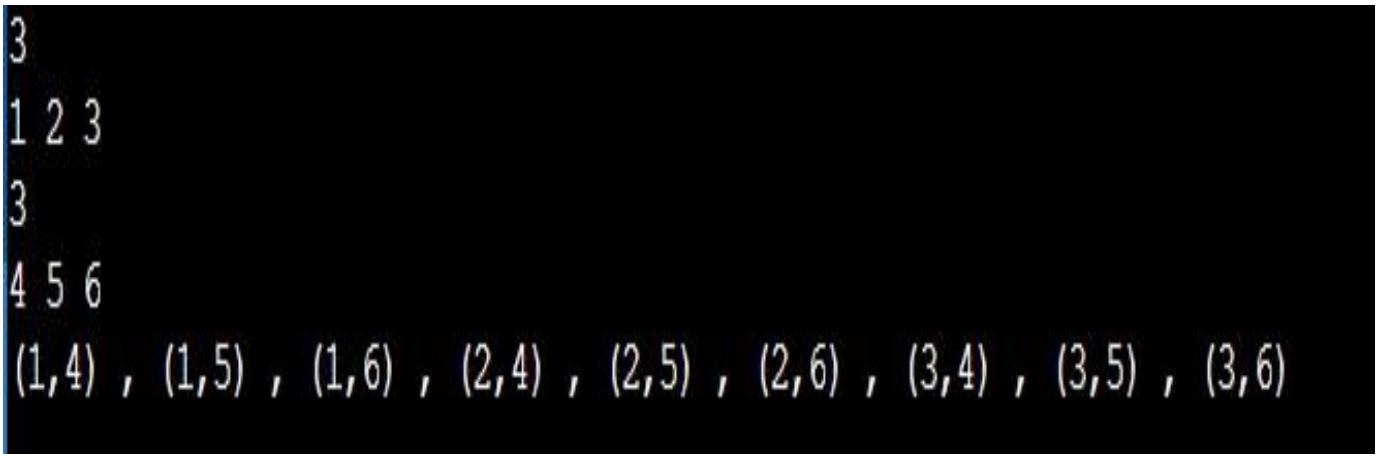
CODE:

```
#include <stdio.h>


int main()
{    int n,m;
scanf("%d",&n);
   int a[n];    for(int
i=0;i<n;i++)
   {
      scanf("%d",&a[i]);
   }
   scanf("%d",&m);
int b[m];    for(int
i=0;i<m;i++)
   {
      scanf("%d",&b[i]);
```

```
    }
    for(int i=0;i<n;i++)
    {
        for(int j=0;j<m;j++)
        {
            if(i==n-1 && j==m-1)
printf("(%d,%d)",a[i],b[j]);
            else            printf("(%d,%d)
, ",a[i],b[j]);
        }
    }
    return 0;
}
```

OUTPUT:



2. UNDERSTANDING WORKING ON COMPUTATIONAL SOFTWARE

Maple provides an interactive problem-solving environment, complete with procedures for performing symbolic, numeric, and graphical computations.

At the core of the Maple computer algebra system is a powerful programming language, on which the Maple libraries of mathematical commands are built.
There are many types of valid statements.

Examples include statements that request help on a particular topic, display a text string, perform an arithmetic operation, use a Maple library command, or define a procedure. Statements in 1-D notation require a trailing semicolon (;) or colon (:).

If you enter a statement with a trailing semicolon, for most statements, the result is displayed.

If you enter a statement with a trailing colon, the result is computed but not displayed.

> 2 + 3; 5 (1) > 2 + 3:

SOME FEATURES OF MAPPLE:

- Displaying a Text String
- Performing an Arithmetic Operation
- Assigning to a Name
- Using Maple Library Commands
- Solve problems from virtually any branch of mathematics
- Solve math problems easily and accurately.

3. EXPERIMENT: CLOSED FORMULA FOR RECURRENCE RELATION EQUATION

PROGRAM 1

FOR FIRST ORDER RECURRENCE RELATION:

```
{f(1) = 1, f(n) = f(n-1)+2*n+1};

                        {f(1) = 1, f(n) = f(n-1)+2*n+1}
rsolve(%, f(k));
                          -4-k+(2*(k+1))*((1/2)*k+1)
```

PROGRAM 2

FOR SECOND ORDER RECURRENCE RELATION:

```
{f(1) = 3, f(2) = 27, f(n) = 6*f(n-1)-9*f(n-2)};

                        {f(1) = 3, f(2) = 27, f(n) = 6*f(n-1)-9*f(n-2)}
rsolve(%, f(k));
                          -3*3^k+(2*k+2)*3^k
```