Q.1 Write a Program to perform the merge operation of two 1D arrays & store it in another array. Keep in mind that both array sizes can be different.

For example,
Input:
Enter array A's size: 5

Enter array A's elements:
a[0] = 7
a[1] = 4
a[2] = 9
a[3] = 5
a[4] = 2

Enter array B's size: 3

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>

int main() {
   int n,f,k,i;
printf("enter array A's size:");
scanf("%d",&n);
printf("Enter array A's elements:\n");
int a[n];
for( i = 0; i < n; i++) {
printf("a[%d] = ", i);
scanf("\n%d", &a[i]);
}
printf("enter array B's size:");
scanf("%d",&f);
printf("Enter array B's elements:\n");
int b[f];
for(i = 0; i <f; i++) {
   printf("b[%d] = ", i);
scanf("\n%d", &b[i]);
}
 k=n+f;
int c[k];
  for( i = 0; i < n; i++) {
      c[i] = a[i];
   }
```

```
    for(i = 0; i < f; i++) {
        c[n + i] = b[i];
    }
printf("array c is:");
 for(int i = 0; i < k; i++) {
        printf("%d, ", c[i]);
    }


    return 0;
}
```

o/p:

```
enter array A's size:5
Enter array A's elements:
a[0] = 7
a[1] = 4
a[2] = 9
a[3] = 5
a[4] = 2
enter array B's size:3
Enter array B's elements:
b[0] = 1
b[1] = 3
b[2] = 6
array c is:7, 4, 9, 5, 2, 1, 3, 6,
```

=== Code Execution Successful ===

Q.2 Write a Program to find leap years between two given numbers and store them in an array. And then print that array.
For example,
Input:
Enter the first number: 2020

Enter the second number: 2040

Output:
The array is: 2020, 2024, 2028, 2032, 2036, 2040

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int first, second;


    printf("Enter the first number: ");
    scanf("%d", &first);

    printf("Enter the second number: ");
    scanf("%d", &second);


    printf("The array is: ");
    for (int i = first; i <= second; i += 4) {
        printf("%d", i);
        if (i != second)
            printf(", ");
    }
    printf("\n");

    return 0;
}
```

o/p:

Enter the first number: 2020
Enter the second number: 2040
The array is: 2020, 2024, 2028, 2032, 2036, 2040

=== Code Execution Successful ===

Q.3 Write a Program to find square of each element from the given array.
For example,
Input:
Enter array size: 5

Enter array elements:
a[0] = 7
a[1] = 4
a[2] = 9
a[3] = 5
a[4] = 2

Output:
The squares are: 49, 16, 81, 25, 4

Ans:

```c
// Online C compiler to run C program online
#include <stdio.h>

int main() {
    int n;
    printf("enter the array size: ");
    scanf("%d",&n);
    printf("enter the array element:\n");
  int a[n];
  for (int i=0;i<n;i++){
    printf("a[%d]=",i);
    scanf("\n%d",&a[i]);
 }
    printf("The squares are:");
    for (int i = 0; i < n; i++) {
       printf("%d, ", a[i] * a[i]);
    }
    printf("\n");
    return 0;
}
```

o/p:

enter the array size: 5
enter the array element:
a[0]=7
a[1]=4
a[2]=9
a[3]=5
a[4]=2
The squares are:49, 16, 81, 25, 4,

=== Code Execution Successful ===