Day 2 F.N:

1. **1. Calculate the area of square or circle based on the shape ‘S’ for Square and ‘C’ for Circle.**

Sample Input 1:
Shape = ‘S’
Size = 4
Sample Output 1:
Area of Square = 16

Sample Input 2:
Shape = ‘C’
Size = 4
Sample Output 2:
Area of Circle = 50.24

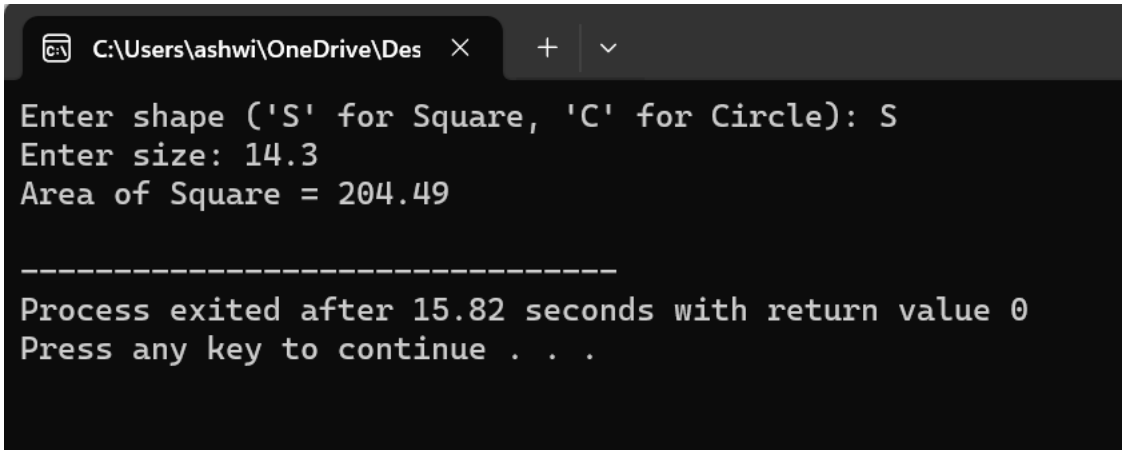
Code:

```
#include <stdio.h>

int main() {

   char shape;

   float size;

  printf("Enter shape ('S' for Square, 'C' for Circle): ");

   scanf(" %c", &shape);

   printf("Enter size: ");

   scanf("%f", &size);

 if (shape == 'S' || shape == 's') {

      float area_square = size * size;

      printf("Area of Square = %.2f\n", area_square);

   } else if (shape == 'C' || shape == 'c') {

      float area_circle = 3.14 * size * size;

      printf("Area of Circle = %.2f\n", area_circle);

   } else {

      printf("Invalid shape input. Please enter 'S' for Square or 'C' for Circle.\n");

   }
```

return 0;

}

Output:



2. Given a sorted array having duplicate elements. Print the elements with its frequency having more than one appearance.

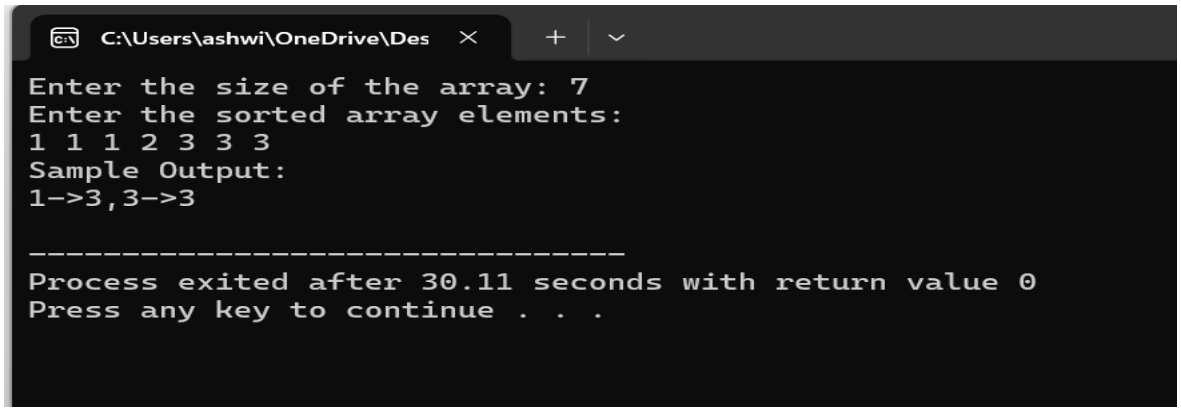
Sample Input:
N = 12
Array = {1,1,1,2,4,4,4,4,5,6,9,9}
Sample Output:
1- >3,4->4,9->2

Code:

```
#include <stdio.h>

void printDuplicateFrequency(int arr[], int n) {

   int i = 0;

   while (i < n) {

      int count = 1;

     while ((i < n - 1) && (arr[i] == arr[i + 1])) {

        count++;

        i++;

      }
```

```
        if (count > 1) {
            printf("%d->%d", arr[i], count);
            if (i < n - 1) {
                printf(",");
            }
        }
    i++;
    }
    printf("\n");
}
int main() {
    int n;
    printf("Enter the size of the array: ");
    scanf("%d", &n);
    int arr[n];
    printf("Enter the sorted array elements:\n");
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    printf("Sample Output:\n");
    printDuplicateFrequency(arr, n);
 return 0;
}
```

Output:



3. Given a sentence and screen length. Justify the sentence according to the screen length by replacing space with stars.

Code:

```
#include <stdio.h>
#include <string.h>
void justifySentence(char sentence[], int screenLength) {
   int length = strlen(sentence);
   int spaceCount = 0;
 for (int i = 0; i < length; i++) {
      if (sentence[i] == ' ') {
         spaceCount++;
      }
   }
   int totalSpaces = screenLength - length + spaceCount;
   int spacesToAdd = totalSpaces / spaceCount;
   int extraSpaces = totalSpaces % spaceCount;
   for (int i = 0; i < length; i++) {
      if (sentence[i] == ' ') {
         for (int j = 0; j < spacesToAdd; j++) {
            printf("*");
         }
```

```
            if (extraSpaces > 0) {
                printf("*");
                extraSpaces--;
            }
        } else {
            printf("%c", sentence[i]);
        }
    }
  printf("\n");
}
int main() {
    char sentence[1000];
    int screenLength;
    printf("Enter the sentence: ");
    fgets(sentence, sizeof(sentence), stdin);
    printf("Enter the screen length: ");
    scanf("%d", &screenLength);
    printf("Justified Sentence:\n");
    justifySentence(sentence, screenLength);
   return 0;
}
```

Output: