DAY-2

QUIZ-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("Shape = ");
    scanf(" %c", &shape);
 if (shape == 'S' || shape == 's') {
        printf("Size = ");
        scanf("%f", &size);
        float area = size * size;
        printf("Area of Square = %.2f\n", area);
    } else if (shape == 'C' || shape == 'c') {
        printf("Size = ");
        scanf("%f", &size);
        float area = 3.14159 * size * size;
        printf("Area of Circle = %.2f\n", area);
    } else {
        printf("Invalid shape entered. Please enter 'S' for Square or 'C' for Circle.\n");
    }
   return 0;
}
```

OUTPUT:

Sample Input/ Output 1:

```
Shape = S
Size = 4
Area of Square = 16.00
```

Sample Input/ Output 2:

```
Shape = C
Size = 4
Area of Circle = 50.27
```

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

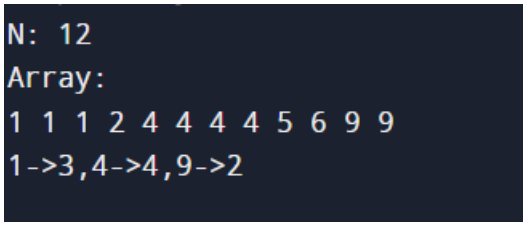
CODE:

```
#include <stdio.h>
int main() {
    int N;
    printf("N: ");
    scanf("%d", &N);
    int arr[N];
printf("Array:\n");
    for (int i = 0; i < N; i++) {
        scanf("%d", &arr[i]);
    }
    int count = 1;
    for (int i = 1; i <= N; i++) {
        if (i == N || arr[i] != arr[i - 1]) {
            if (count > 1) {
                printf("%d->%d", arr[i - 1], count);
                if (i < N) {
                    printf(",");
                }
            }
            count = 1;
```

```
        } else {
            count++;
        }
    }

    return 0;
}
```

OUTPUT:



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

Sample Input 1:
Sentence = Welcome to Zoho Corporation
Screen length = 34
Sample Output 1:
Welcome****to***Zoho***Corporation

Sample Input 2:
Sentence = Welcome to Zoho Corporation
Screen length = 36
Sample Output 2:
Welcome****to****Zoho****Corporation

CODE:

```
#include <stdio.h>
#include <string.h>
void justifySentence(char sentence[], int screenLength) {
    int sentenceLength = strlen(sentence);
    int spacesToAdd = screenLength - sentenceLength;

    int spaceCount = 0;
    for (int i = 0; i < sentenceLength; i++) {
        if (sentence[i] == ' ') {
            spaceCount++;
        }
    }
```

```
    int spacesBetweenWords = (spaceCount > 0) ? spacesToAdd / spaceCount : 0;
    int extraSpaces = (spaceCount > 0) ? spacesToAdd % spaceCount : 0;
    for (int i = 0; i < sentenceLength; i++) {
        if (sentence[i] != ' ') {
            printf("%c", sentence[i]);
        } else {
            int spaces = spacesBetweenWords + ((extraSpaces > 0) ? 1 : 0);
            for (int j = 0; j < spaces; j++) {
                printf("*");
            }
            extraSpaces--;
        }
    }
    printf("\n");
}

int main() {
    char sentence[100];
    int screenLength;
    printf("Enter the sentence: ");
    fgets(sentence, sizeof(sentence), stdin);
    printf("Enter the screen length: ");
    scanf("%d", &screenLength);
    sentence[strcspn(sentence, "\n")] = '\0';
    justifySentence(sentence, screenLength);

    return 0;
}
```

OUTPUT:

Sample Input/ Output 1:

```
Enter the sentence: Welcome to Zoho Corporation
Enter the screen length: 34
Welcome***to**Zoho**Corporation
```

Sample Input/ Output 2:

```
Enter the sentence: Welcome to Zoho Corporation
Enter the screen length: 36
Welcome***to***Zoho***Corporation
```