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

CODE :

#include <stdio.h>

int main() {

char shape;

int PI 3.14159;

float size, area;

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

scanf("%c", &shape);

printf("Enter the size: ");

scanf("%f", &size);

switch(shape) {

case 'S':

case 's':

area = size \* size;

printf("Area of Square = %f\n", area);

break;

case 'C':

case 'c':

area = PI \* size \* size;

printf("Area of Circle = %f\n", area);

break;

default:

printf("Invalid shape input.\n");

break;

}

return 0;

}

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

CODE :

#include <stdio.h>

int main() {

int n;

printf("Enter the number of elements: ");

scanf("%d", &n);

int arr[n];

printf("Enter the sorted array elements: ");

for (int i = 0; i < n; i++) {

scanf("%d", &arr[i]);

}

printf("Output: ");

int i = 0;

int printed = 0;

while (i < n) {

int count = 1;

int current = arr[i];

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

count++;

i++;

}

if (count > 1) {

printf("%d->%d, ", current, count);

printed = 1;

}

i++;

}

return 0;

}

**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>

int main() {

char sentence[100];

printf("Enter the sentence: ");

fgets(sentence, sizeof(sentence), stdin);

sentence[strcspn(sentence, "\n")] = '\0';

int screenLength;

printf("Enter the screen length: ");

scanf("%d", &screenLength);

int len = strlen(sentence);

int spaces = 0;

for (int i = 0; i < len; i++) {

if (sentence[i] == ' ') {

spaces++;

}

}

int totalSpacesNeeded = screenLength - len;

int spacesBetweenWords = spaces > 0 ? totalSpacesNeeded / spaces : 0;

int extraSpaces = spaces > 0 ? totalSpacesNeeded % spaces : 0;

for (int i = 0; i < len; i++) {

if (sentence[i] == ' ') {

int j;

for (j = 0; j < spacesBetweenWords; j++) {

printf("\*");

}

if (extraSpaces > 0) {

printf("\*");

extraSpaces--;

}

} else {

printf("%c", sentence[i]);

}

}

return 0;

}