**C-Lab**  *01-08-25*

/\*Write a program to check Whether Two Strings are Anagrams or not.\*/

#include <stdio.h>

int main() {

char str1[100], str2[100];

int i, j, len1 = 0, len2 = 0;

char temp;

printf("Enter first string: ");

scanf("%s", str1);

printf("Enter second string: ");

scanf("%s", str2);

for (i = 0; str1[i] != '\0'; i++) {

len1++;

}

for (i = 0; str2[i] != '\0'; i++) {

len2++;

}

if (len1 != len2) {

printf("The strings are NOT Anagrams.\n");

return 0;

}

for (i = 0; i < len1 - 1; i++) {

for (j = i + 1; j < len1; j++) {

if (str1[i] > str1[j]) {

temp = str1[i];

str1[i] = str1[j];

str1[j] = temp;

}

}

}

for (i = 0; i < len2 - 1; i++) {

for (j = i + 1; j < len2; j++) {

if (str2[i] > str2[j]) {

temp = str2[i];

str2[i] = str2[j];

str2[j] = temp;

}

}

}

for (i = 0; i < len1; i++) {

if (str1[i] != str2[i]) {

printf("The strings are NOT Anagrams.\n");

return 0;

}

}

printf("The strings are Anagrams.\n");

return 0;

}

/\*Write a program to find second largest element in an array by passing the array to a function.\*/

#include <stdio.h>

int secondlar(int arr[], int n) {

int first, second;

if (arr[0] > arr[1]) {

first = arr[0];

second = arr[1];

} else {

first = arr[1];

second = arr[0];

}

for (int i = 2; i < n; i++) {

if (arr[i] > first) {

second = first;

first = arr[i];

} else if (arr[i] > second && arr[i] != first) {

second = arr[i];

}

}

return second;

}

int main() {

int arr[100], n;

printf("Enter size of an array: ");

scanf("%d", &n);

printf("Enter %d elements:\n", n);

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

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

}

int secondLargest = secondlar(arr, n);

printf("The second largest element is: %d\n", secondLargest);

return 0;

}

/\*Write a program to find sum of digits using recursion.\*/

#include <stdio.h>

int sumOfDigits(int n) {

if (n == 0)

return 0;

return (n % 10) + sumOfDigits(n / 10);

}

int main() {

int num;

printf("Enter a number: ");

scanf("%d", &num);

printf("Sum of digits: %d\n", sumOfDigits(num));

return 0;

}

/\*Write a program and a function to swap two numbers using call by reference.\*/

#include <stdio.h>

void swap(int \*a, int \*b) {

int temp;

temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int x, y;

printf("Enter first number: ");

scanf("%d", &x);

printf("Enter second number: ");

scanf("%d", &y);

swap(&x, &y);

printf("After swapping: x = %d, y = %d\n", x, y);

return 0;

}

/\*Write a function to sort an array using functions.\*/

#include <stdio.h>

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

int i, j, temp;

for (i = 0; i < n - 1; i++) {

for (j = 0; j < n - i - 1; j++) {

if (arr[j] > arr[j + 1]) {

temp = arr[j];

arr[j] = arr[j + 1];

arr[j + 1] = temp;

}

}

}

}

int main() {

int arr[100], n, i;

printf("Enter size of array: ");

scanf("%d", &n);

printf("Enter %d elements: ", n);

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

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

}

sortArray(arr, n);

printf("Sorted array: ");

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

printf("%d ", arr[i]);

}

printf("\n");

return 0;

}

/\*Write a program to define a structure name student with roll number, name, and marks.

Write functions to input and display student details\*/

#include <stdio.h>

struct Student {

int roll;

char name[50];

float marks;

};

struct Student inputStudent() {

struct Student s;

printf("Enter roll number: ");

scanf("%d", &s.roll);

printf("Enter name: ");

scanf("%s", s.name);

printf("Enter marks: ");

scanf("%f", &s.marks);

return s;

}

void displayStudent(struct Student s) {

printf("\nStudent Details: \n");

printf("Roll Number: %d\n", s.roll);

printf("Name : %s\n", s.name);

printf("Marks : %f\n", s.marks);

}

int main() {

struct Student s1;

s1 = inputStudent();

displayStudent(s1);

return 0;

}

/\*Write a program to create a structure employee (ID, Name, Basic Pay, DA, HRA, Gross Salary).

and write a function to calculate salary and display details.\*/

#include <stdio.h>

struct Employee {

int id;

char name[50];

float basic, da, hra, gross;

};

struct Employee calculateSalary(struct Employee e) {

e.gross = e.basic + e.da + e.hra;

return e;

}

void displayEmployee(struct Employee e) {

printf("\nEmployee ID: %d\n", e.id);

printf("Name : %s\n", e.name);

printf("Basic Pay : %.2f\n", e.basic);

printf("DA : %.2f\n", e.da);

printf("HRA : %.2f\n", e.hra);

printf("Gross Pay : %.2f\n", e.gross);

}

int main() {

struct Employee e1;

printf("Enter Employee ID: ");

scanf("%d", &e1.id);

printf("Enter Name: ");

scanf("%s", e1.name);

printf("Enter Basic Pay: ");

scanf("%f", &e1.basic);

printf("Enter DA: ");

scanf("%f", &e1.da);

printf("Enter HRA: ");

scanf("%f", &e1.hra);

e1 = calculateSalary(e1);

displayEmployee(e1);

return 0;

}

*Thankyou,*

*Kamal Khandelwal*

*590021614*

*B2*