CSE ASSIGNMENT - 5

Problem 1

Question:

> *Write a C program to insert 10 elements into an array and change 5th element in the array*

With function:

```c
// Program to insert 10 elements into an array and change 5th element in the array

#include <stdio.h>

void print_array(const int *array)
{
    printf("[ ");

    for (int i = 0; i < 10; i++)
    {
        printf("%d, ", *(array + i));
    }

    printf("\b\b ]\n");
}

int main (int argc, char *argv[])
{
    int array[10];

    printf("Enter elements one by one : \n");

    for (int i = 0; i < 10; i++)
    {
        scanf(" %d", array + i);
    }

    printf("The array was : \n");
    print_array(array);
    printf("Enter a new number to replace at 5th position : ");
    scanf(" %d", array + 4);
    printf("The new array is : \n");
    print_array(array);
    printf("\n");

    return 0;
}
```

Without function:

```c
// Program to insert 10 elements into an array and change 5th element in the array

#include <stdio.h>

int main (int argc, char *argv[])
{
    int array[10];

    printf("Enter elements one by one : \n");

    for (int i = 0; i < 10; i++)
    {
        scanf(" %d", array + i);
    }

    printf("The array was : \n");
    printf("[ ");

    for (int i = 0; i < 10; i++)
    {
        printf("%d, ", *(array + i));
    }

    printf("\b\b ]\n");
    printf("Enter a new number to replace at 5th position : ");
    scanf(" %d", array + 4);
    printf("The new array is : \n");
    printf("[ ");

    for (int i = 0; i < 10; i++)
    {
        printf("%d, ", *(array + i));
    }

    printf("\b\b ]\n");
    printf("\n");

    return 0;
}
```

Output:

```
Enter elements one by one :
1
2
3
4
5
6
```

```
7
8
9
10
The array was :
[ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 ]
Enter a new number to replace at 5th position : -5
The new array is :
[ 1, 2, 3, 4, -5, 6, 7, 8, 9, 10 ]
```

Problem 2

Question:

> *Write a C program to search an element into an array. Print the result as the element found or not*

With function:

```c
// C prgram to search for an element in an array

#include <stdio.h>

int check_element (const int *to_be_checked, int size_of_arr, const int *to_check)
{
    for (int i = 0; i < size_of_arr; i++)
    {
        if (*(to_be_checked + i) == *to_check)
        {
            printf("Element %d found at position %d\n", *to_check, i + 1);
            return 1;
        }
    }

    printf("The element %d couldn't be found\n", *to_check);
    return 0;
}

int main (int argc, char *argv[])
{
    int n, check;

    printf("Enter the number of elements : ");
    scanf(" %d", &n);

    int array[n];

    printf("Enter the elements one by one : ");

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

```
    {
        scanf(" %d", array + i);
    }

    printf("Enter the element to be checked : ");
    scanf(" %d", &check);

    check_element(array, n, &check);

    return 0;
}
```

Without function:

```
// C prgram to search for an element in an array

#include <stdio.h>

int main (int argc, char *argv[])
{
    int n, check;

    printf("Enter the number of elements : ");
    scanf(" %d", &n);

    int array[n];

    printf("Enter the elements one by one : ");

    for (int i = 0; i < n; i++)
    {
        scanf(" %d", array + i);
    }

    printf("Enter the element to be checked : ");
    scanf(" %d", &check);

    for (int i = 0; i < n; i++)
    {
        if (*(array + i) == check)
        {
            printf("Element %d found at position %d\n", check, i + 1);

            return 1;
        }
    }

    printf("The element %d couldn't be found\n", check);

    return 0;
}
```

Output:

```
Enter the number of elements : 5
Enter the elements one by one : 1
2
3
4
5
Enter the element to be checked : 2
Element 2 found at position 2
```

```
Enter the number of elements : 5
Enter the elements one by one : 1
2
3
4
5
Enter the element to be checked : 6
Element 6 couldn't be found
```

Problem 3

Question:

> *Write a C program to count the number of element occurances and display the output*

With function:

```c
// C prgram to count an element in an array

#include <stdio.h>

int count_element (const int *to_be_checked, int size_of_arr, const int *to_check)
{
    int count = 0;

    for (int i = 0; i < size_of_arr; i++)
    {
        if (*(to_be_checked + i) == *to_check)
        {
            count++;
        }
    }

    return count;
}

int main (int argc, char *argv[])
{
```

```
    int n, check;

    printf("Enter the number of elements : ");
    scanf(" %d", &n);

    int array[n];

    printf("Enter the elements one by one : ");

    for (int i = 0; i < n; i++)
    {
        scanf(" %d", array + i);
    }

    printf("Enter the element to be counted : ");
    scanf(" %d", &check);

    printf("This element was found %d times\n", count_element(array, n, &check));

    return 0;
}
```

Without function:

```
// C prgram to search for an element in an array

#include <stdio.h>

int main (int argc, char *argv[])
{
    int n, check, count = 0;

    printf("Enter the number of elements : ");
    scanf(" %d", &n);

    int array[n];

    printf("Enter the elements one by one : ");

    for (int i = 0; i < n; i++)
    {
        scanf(" %d", array + i);
    }

    printf("Enter the element to be checked : ");
    scanf(" %d", &check);

    for (int i = 0; i < n; i++)
    {
        if (*(array + i) == check)
        {
            count++;
```

```
        }
    }

    printf("The element was found %d times\n", count);

    return 0;
}
```

Output:

```
Enter the number of elements : 5
Enter the elements one by one : 2
2
2
3
4
Enter the element to be counted : 2
This element was found 3 times
```

```
Enter the number of elements : 5
Enter the elements one by one : 1
2
3
4
5
Enter the element to be counted : 6
This element was found 0 times
```
