Q1)

Lab8Q1.c

```c
#include <stdio.h>

int main() {
    int i;
    int arr[5], temp;
    printf("Enter 5 integers:\n");

    for(i = 0; i < 5; i++){
        scanf("%d", &arr[i]);
    }
    temp = arr[4];
    for(i = 4; i > 0; i--)
        arr[i] = arr[i - 1];
    arr[0] = temp;

    printf("Shifted array:\n");
    for(i = 0; i < 5; i++)
        printf("%d ", arr[i]);

    return 0;
}
```

```
Enter 5 integers:
3
4
5
6
7
Shifted array:
7 3 4 5 6
```

Q2)

Lab8Q1.c Lab8Q2.c

```c
#include <stdio.h>
int main() {
    int arr[10], num, count = 0,i;
    printf("Enter 10 numbers:\n");

    for(i = 0; i < 10; i++)
        scanf("%d", &arr[i]);

    printf("Enter number to search: ");
    scanf("%d", &num);

    for(i = 0; i < 10; i++)
        if(arr[i] == num)
            count++;

    if(count > 0)
        printf("Number %d occurred %d times.\n", num, count);
    else
        printf("Number not found.\n");

    return 0;
}
```

```
Enter 10 numbers:
12
34
54
52
34
67
89
65
45
12
Enter number to search: 12
Number 12 occurred 2 times.
```

Q3)

Lab8Q1.c | Lab8Q2.c | [*] Lab8Q3.c | Lab8Q4.c | Lab8Q5.c | Lab8Q6.c | Lab8Q7.c | Lab8Q8.c

```c
#include <stdio.h>
int main() {
    int i,pass[10], fail[10];
    int pCount = 0, fCount = 0, mark;
    float passTotal = 0, failTotal = 0;
    printf("Enter marks for up to 10 students (-1 to stop):\n");
    for (i = 0; i < 10; i++) {
        scanf("%d", &mark);
        if (mark == -1)
            break;
        if (mark >= 5 && mark <= 10) {
            pass[pCount] = mark;
            passTotal += mark;
            pCount++;
        } else if (mark >= 0 && mark < 5) {
            fail[fCount] = mark;
            failTotal += mark;
            fCount++;
        } else {
            printf("Invalid mark. Please enter a value between 0 and 10 or -1 to stop.\n");
            i--;
        }
    }
    printf("\nPass Marks: ");
    if (pCount > 0) {
        for (i = 0; i < pCount; i++)
            printf("%d ", pass[i]);
        printf("\nAverage Pass Marks: %.2f\n", passTotal / pCount);
    } else {
        printf("None\nAverage Pass Marks: 0.00\n");
    }
    printf("\nFail Marks: ");
    if (fCount > 0) {
        for (i = 0; i < fCount; i++)
            printf("%d ", fail[i]);
        printf("\nAverage Fail Marks: %.2f\n", failTotal / fCount);
        printf("\nAverage Fail Marks: %.2f\n", failTotal / fCount);
    } else {
        printf("None\nAverage Fail Marks: 0.00\n");
    }
    return 0;
}
```

```
Enter marks for up to 10 students (-1 to stop):
2
3
10
5
6
7
4
8
9
2

Pass Marks: 10 5 6 7 8 9
Average Pass Marks: 7.50

Fail Marks: 2 3 4 2
Average Fail Marks: 2.75
```

Q4)

Lab8Q1.c | Lab8Q2.c | Lab8Q3.c | Lab8Q4.c

```c
#include <stdio.h>
int main() {
    int i;
    char str[100];
    printf("Enter a sentence:\n");
    scanf("%[^\n]", str);

    for(i = 0; str[i] != '\0'; i++) {
        if(str[i] >= 'A' && str[i] <= 'Z')
            str[i] = str[i] + 32;
        else if(str[i] >= 'a' && str[i] <= 'z')
            str[i] = str[i] - 32;
    }

    printf("Converted message:%s\n", str);
    return 0;
}
```

```
Enter a sentence:
My nAmE iS EmAaN
Converted message:mY NaMe Is eMaAn
```

Q5)

Lab8Q1.c | Lab8Q2.c | [*] Lab8Q3.c | Lab8Q4.c | Lab8Q5.c

```c
#include <stdio.h>
int main() {
    int arr[10], max, min,i;
    printf("Enter 10 integers:\n");
    for(i = 0; i < 10; i++)
        scanf("%d", &arr[i]);

    max = min = arr[0];
    for(i = 1; i < 10; i++) {
        if(arr[i] > max)
            max = arr[i];
        if(arr[i] < min)
            min = arr[i];
    }

    printf("Difference (max - min): %d\n", max - min);
    return 0;
}
```

```
Enter 10 integers:
3
45
7
98
12
38
24
60
43
12
Difference (max - min): 95
```

Q6)

Lab8Q1.c | Lab8Q2.c | [*] Lab8Q3.c | Lab8Q4.c | Lab8Q5.c | Lab8Q6.c

```c
#include <stdio.h>
int main() {
    char str[50];
    int i,vowels = 0, consonants = 0;
    printf("Enter a word:\n");
    scanf("%s", str);

    for(i = 0; str[i] != '\0'; i++) {
        char ch = str[i];
        if((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {
            if(ch == 'a'|| ch == 'e'|| ch == 'i'|| ch == 'o'|| ch == 'u' ||
               ch == 'A'|| ch == 'E'|| ch == 'I'|| ch == 'O'|| ch == 'U')
                vowels++;
            else
                consonants++;
        }
    }
    printf("Vowels: %d\nConsonants: %d\n", vowels, consonants);
    return 0;
}
```

```
Enter a word:
Hello world
Vowels: 2
Consonants: 3
```

Q7)

Lab8Q1.c | Lab8Q2.c | [*] Lab8Q3.c | Lab8Q4.c | Lab8Q5.c | Lab8Q6.c | Lab8Q7.c

```c
#include <stdio.h>
int main() {
    int arr[10],i,j;
    printf("Enter 10 integers:\n");
    for(i = 0; i < 10; i++)
        scanf("%d", &arr[i]);

    for(i = 0; i < 10; i++) {
        for(j = i + 1; j < 10; j++) {
            if(arr[i] == arr[j])
                arr[j] = -1;
        }
    }
    printf("Updated array:\n");
    for(i = 0; i < 10; i++)
        printf("%d ", arr[i]);
    return 0;
}
```

```
Enter 10 integers:
21
5
69
34
75
12
5
60
21
21
Updated array:
21 5 69 34 75 12 -1 60 -1 -1
```

Q8)

Lab8Q1.c | Lab8Q2.c | [*] Lab8Q3.c | Lab8Q4.c | Lab8Q5.c | Lab8Q6.c | Lab8Q7.c | Lab8Q8.c

```c
#include <stdio.h>
int main() {
    char str[100];
    printf("Enter non-alphabetic characters:\n");
    scanf("%[^A-Za-z]", str);

    printf("You entered:\n%s\n", str);
    return 0;
}
```

```
Enter non-alphabetic characters:
2
2
f
You entered:
2
2
```