

Lab Sheet – 3

- 1. Write a program to find the largest and smallest among three entered numbers and display whether the identified largest/smallest number is even or odd.**
- 2. Write a program to check whether the entered year is leap year or not (a year is leap if it is divisible by 4 and divisible by 100 or 400.)**
- 3. Write a program that asks a number and test the number whether it is multiple of 5 or not, divisible by 7 but not by eleven.**
- 4. Write a program to read the values of coefficients a, b and c of a quadratic equation $ax^2+bx+c=0$ and find roots of the equation.**

Problem 1. Write a program to find the largest and smallest among three entered numbers and display whether the identified largest/smallest number is even or odd.

Code:

```
#include <stdio.h>

int main(){

    int x, y, z, max, min;

    printf("Enter three number: ");

    scanf("%d %d %d", &x, &y, &z);

    // Find Maximum Value

    if (x > y){

        if (x > z){

            max = x;

        }else{

            max = z;

        }

    }else{

        if (y > z){

            max = y;

        }else{

            max = z;

        }

    }

}
```

```
// Find Minimum value
```

```
if (x < y){  
    if (x < z){  
        min = x;  
    }else{  
        min = z;  
    }  
}else{  
    if (y < z){  
        min = y;  
    }else{  
        min = z;  
    }  
}
```

```
printf("\nMaximum value is: %d\nMinimum value is %d\n\n", max, min);
```

```
// Check even or odd between max and min number
```

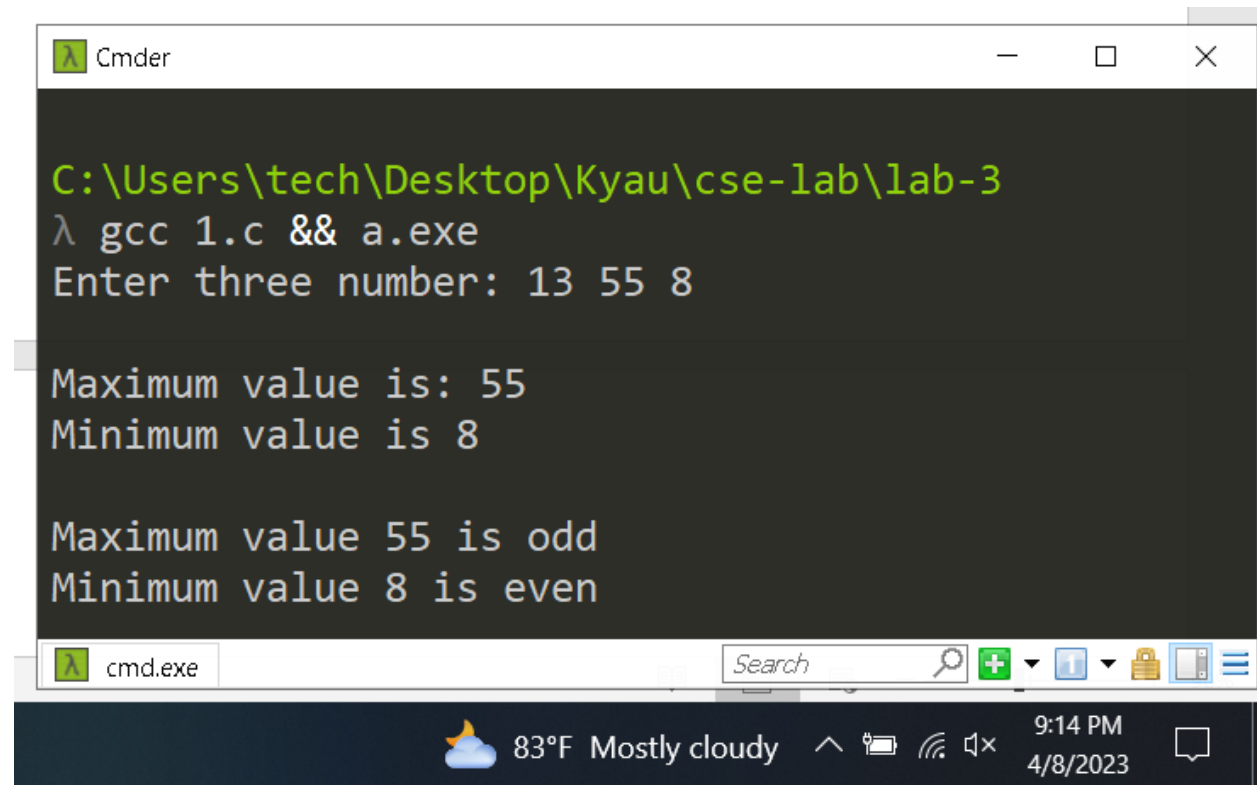
```
max % 2 == 0 ? printf("Maximum value %d is even\n", max) : printf("Maximum value %d is  
odd\n", max);
```

```
min % 2 == 0 ? printf("Minimum value %d is even\n", min) : printf("Minimum value %d is  
odd\n", min);
```

```
return 0;
```

```
}
```

Output:



The screenshot shows a Windows Command Prompt window titled "Cmder". The current directory is `C:\Users\tech\Desktop\Kyau\cse-lab\lab-3`. The user has entered the command `λ gcc 1.c && a.exe`. The program prompts for three numbers: "Enter three number: 13 55 8". The program then outputs the maximum and minimum values: "Maximum value is: 55" and "Minimum value is 8". Finally, it checks the parity of these values: "Maximum value 55 is odd" and "Minimum value 8 is even". The taskbar at the bottom shows the system clock as 9:14 PM on 4/8/2023, with weather information (83°F, Mostly cloudy) and various system icons.

```
Cmder

C:\Users\tech\Desktop\Kyau\cse-lab\lab-3
λ gcc 1.c && a.exe
Enter three number: 13 55 8

Maximum value is: 55
Minimum value is 8

Maximum value 55 is odd
Minimum value 8 is even
```

Problem 2: Write a program to check whether the entered year is leap year or not (a year is leap if it is divisible by 4 and divisible by 100 or 400.)

Code:

```
#include <stdio.h>

int main() {

    int year;

    printf("Enter a year: ");

    scanf("%d", &year);

    if(year % 400 == 0){

        printf("%d is a leap year\n" , year);

    }else{

        if(year % 4 == 0 && year % 100 != 0){

            printf("%d is a leap year\n" , year);

        }else{

            printf("%d is a not a leap year\n" , year);

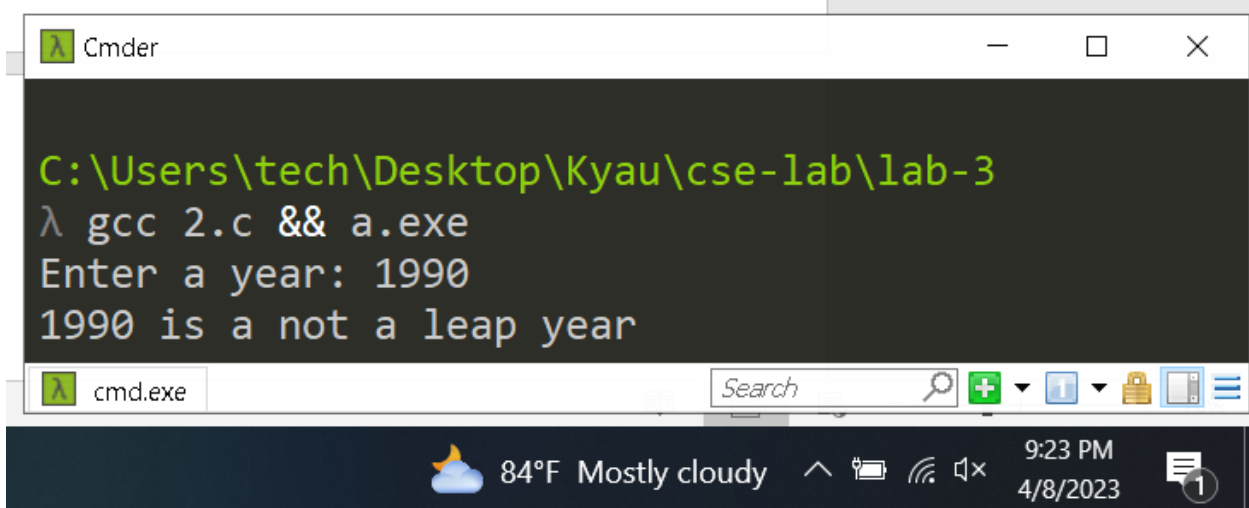
        }

    }

    return 0;

}
```

Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-3
λ gcc 2.c && a.exe
Enter a year: 1990
1990 is a not a leap year
```

Problem 3: Write a program that asks a number and test the number whether it is multiple of 5 or not, divisible by 7 but not by eleven.

Code:

```
#include <stdio.h>

//Write a program that asks a number and test the number whether it is multiple of 5 or
not,divisible by 7 but not by eleven.

int main() {

    int test_number;

    printf("Enter a test number: ");

    scanf("%d", &test_number);

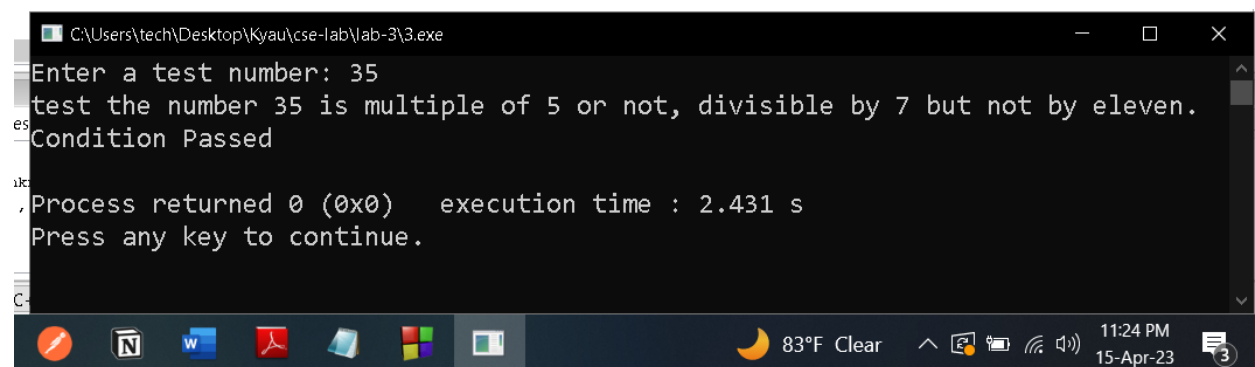
    if(test_number % 5 == 0 && test_number % 7 == 0 && test_number % 11 != 0){

        printf("test the number( %d )is multiple of 5 or not, divisible by 7 but not by eleven.\n",
test_number);

        printf("Condition Passed\n");
```

```
}else{  
  
    printf("test the number is not( %d )is multiple of 5 or not, divisible by 7 but not by  
eleven.\n" , test_number);  
  
    printf("Condition Failed\n");  
  
}  
  
return 0;  
  
}
```

Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-3\3.exe  
Enter a test number: 35  
test the number 35 is multiple of 5 or not, divisible by 7 but not by eleven.  
Condition Passed  
Process returned 0 (0x0) execution time : 2.431 s  
Press any key to continue.
```

Problem 4: Write a program to read the values of coefficients a, b and c of a quadratic equation $ax^2+bx+c=0$ and find roots of the equation.

Code:

```
#include<stdio.h>

#include<math.h>

int main(){

    double a, b, c, discriminant, root1, root2, realPart, imaginePart;

    printf("Enter coefficients a, b and c: ");

    scanf("%lf %lf %lf", &a, &b, &c);

    discriminant = (b * b) -( 4 * a * c);

    if(discriminant > 0){

        root1 = (-b + sqrt(discriminant)) / (2 * a);

        root2 = (-b - sqrt(discriminant)) / (2 * a);

        printf("root1 = %.2lf and root2 = %.2lf", root1, root2);

    }else if(discriminant == 0) {

        root1 = root2 = -b / (2 * a);

        printf("root1 = root2 = %.2lf;", root1);

    }else{

        realPart = -b / (2 * a);

        imaginePart = sqrt(-discriminant) / (2 * a);

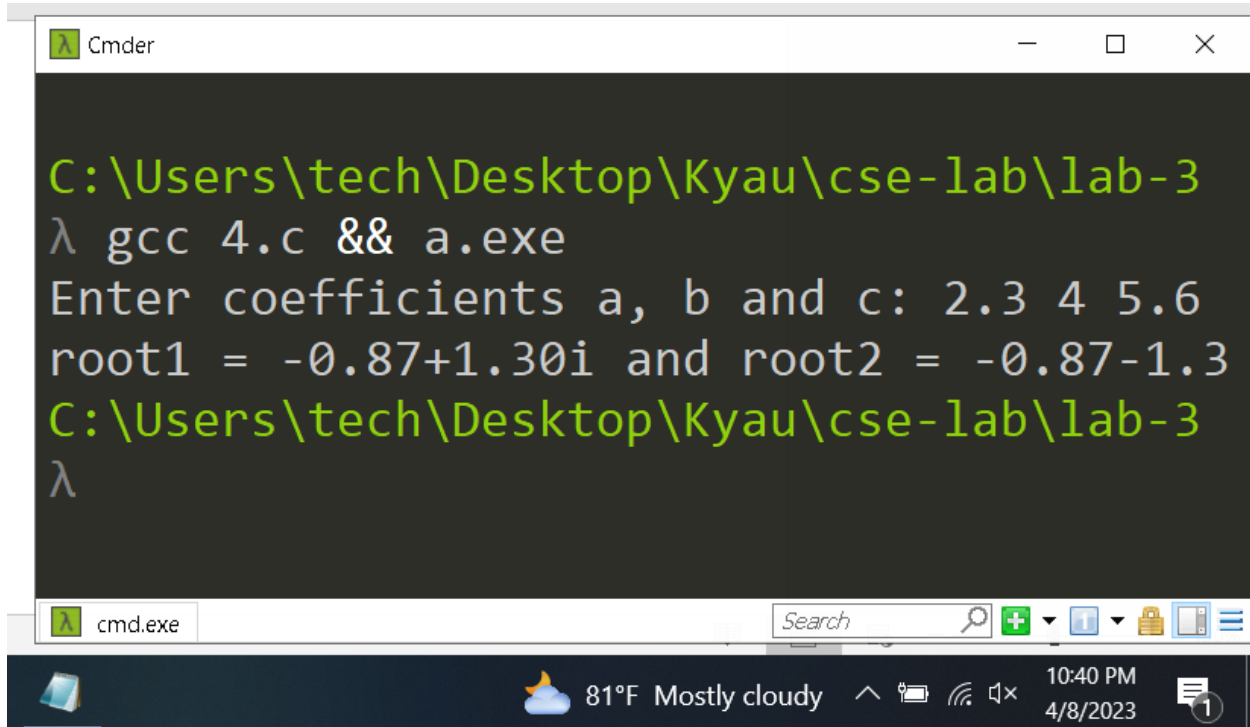
        printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi", realPart, imaginePart, realPart,

imaginePart);

    }

    return 0; }
```


Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-3
λ gcc 4.c && a.exe
Enter coefficients a, b and c: 2.3 4 5.6
root1 = -0.87+1.30i and root2 = -0.87-1.3
C:\Users\tech\Desktop\Kyau\cse-lab\lab-3
λ
```

The screenshot shows a Windows Command Prompt window titled "Cmder". The command prompt displays the current directory as `C:\Users\tech\Desktop\Kyau\cse-lab\lab-3`. The user enters the command `gcc 4.c && a.exe`, which compiles the file `4.c` and executes the resulting `a.exe`. The program prompts the user to "Enter coefficients a, b and c:", and the user enters `2.3 4 5.6`. The program then outputs the roots: `root1 = -0.87+1.30i and root2 = -0.87-1.3`. The command prompt window is open on a Windows desktop with a taskbar at the bottom showing the time as 10:40 PM on 4/8/2023 and the weather as 81°F Mostly cloudy.

