

Lab Sheet – 2

1. Write a C program to prompt the user to input three integer values and print these values in forward and reversed order.
2. Write a program to calculate compound interest.
3. Write a program to swap two variables values with and without using third variables
4. Write a program to print the size of char, float, double and long double data types in C
5. Write a program to check odd or even number (a) using modulus operator (b) using bitwise operator (c) without using bitwise and modulus operator (d) using conditional operator.
6. Write a program to calculate year, month and days of given days.
7. Write a program to take input your date of birth and calculate age.

Problem 1: Write a C program to prompt the user to input three integer values and print these values in forward and reversed order.

Code:

```
#include <stdio.h>

int main()
{
    int a, b, c;

    printf("Enter three integer number: ");

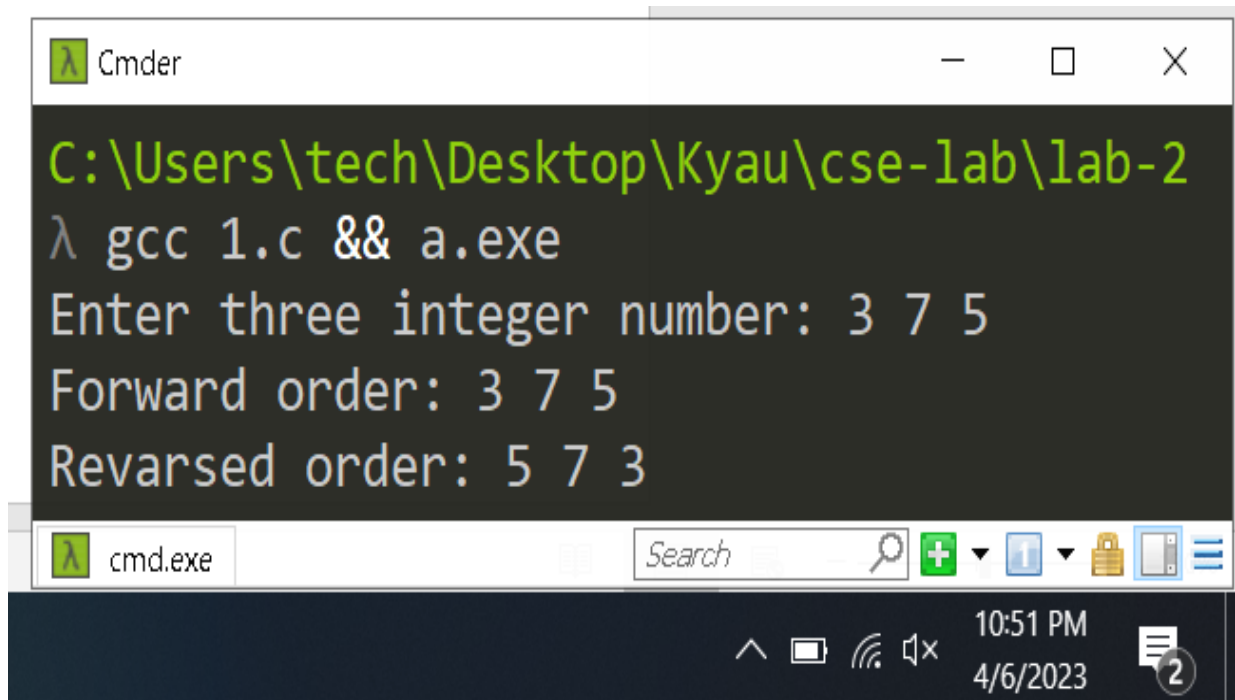
    scanf("%d %d %d", &a, &b, &c);

    printf("Forward order: %d %d %d\n", a, b, c);

    printf("Reversed order: %d %d %d\n", c, b, a);

    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-2". The user has entered the command "gcc 1.c && a.exe". The program prompts "Enter three integer number:" and the user has entered "3 7 5". The program then outputs "Forward order: 3 7 5" and "Reversed order: 5 7 3". The taskbar at the bottom shows the time as 10:51 PM on 4/6/2023, along with system icons and a notification badge.

```
Cmder
C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc 1.c && a.exe
Enter three integer number: 3 7 5
Forward order: 3 7 5
Reversed order: 5 7 3
```

Problem 2: Write a program to calculate compound interest.

Code:

```
#include <stdio.h>

#include <math.h>

int main()
{
    float principle, rate, time, compount_interest;

    printf("Enter the principle: ");

    scanf("%f", &principle);

    printf("Enter the rate of interest: ");

    scanf("%f", &rate);

    printf("Enter the time :");

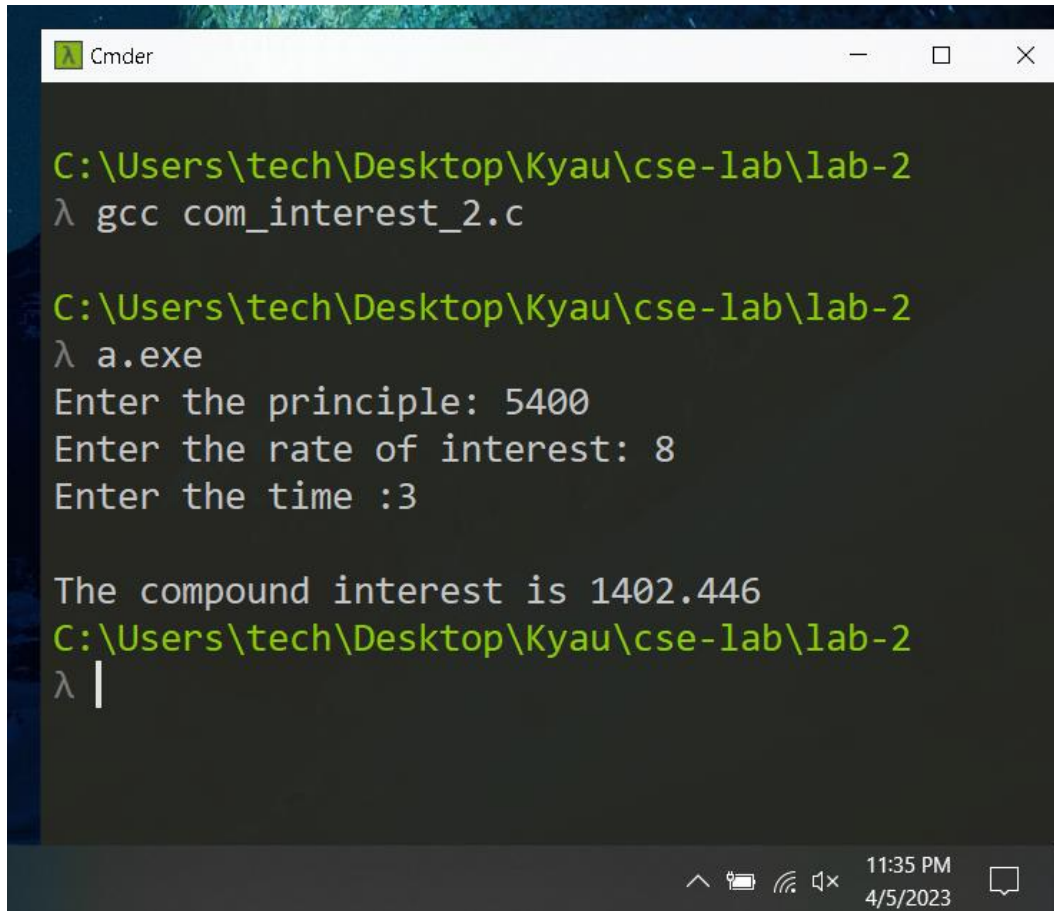
    scanf("%f", &time);

    compount_interest = principle * pow((1 + rate / 100), time) -
principle;

    printf("\nThe compound interest is %0.3f", compount_interest);

    return 0;
}
```

Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc com_interest_2.c

C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ a.exe
Enter the principle: 5400
Enter the rate of interest: 8
Enter the time :3

The compound interest is 1402.446
C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ |
```

The screenshot shows a Windows Command Prompt window titled "Cmder". The current directory is `C:\Users\tech\Desktop\Kyau\cse-lab\lab-2`. The user has compiled a C program using `gcc com_interest_2.c` and then executed it with `a.exe`. The program prompts for three inputs: the principle (5400), the rate of interest (8), and the time (3). It then outputs the result: "The compound interest is 1402.446". The taskbar at the bottom shows the system time as 11:35 PM on 4/5/2023.

Problem 3: Write a program to swap two variables values with and without using third variables

Code:

```
#include <stdio.h>

int main()
{
    int a = 10, b = 20;

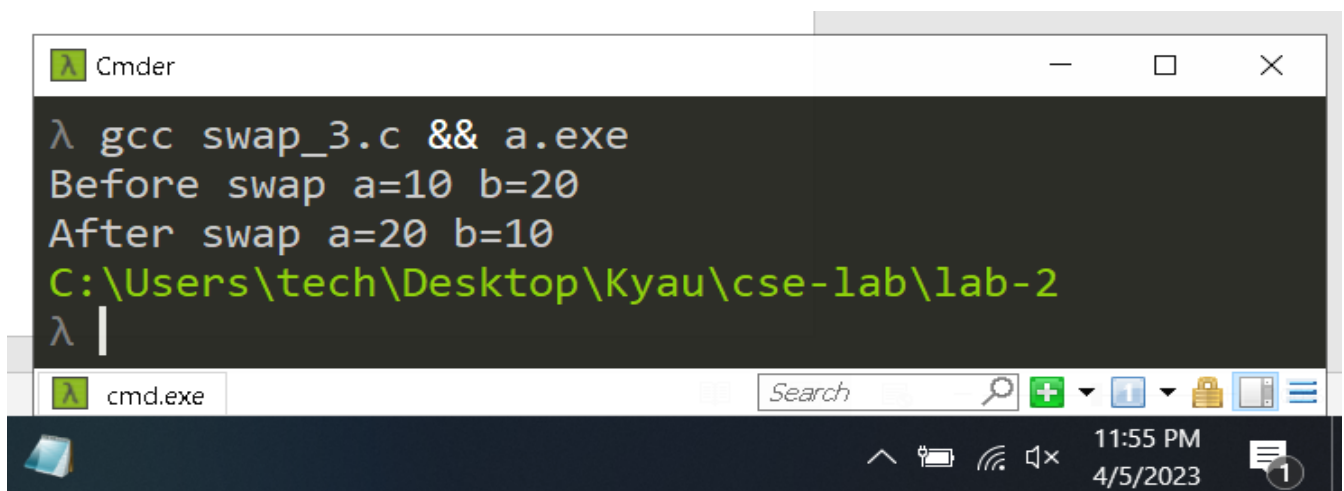
    printf("Before swap a=%d b=%d", a, b);

    a = a + b;
    b = a - b;
    a = a - b;

    printf("\nAfter swap a=%d b=%d", a, b);

    return 0;
}
```

Output:



The screenshot shows a Windows Command Prompt window titled "Cmder". The command prompt displays the following text:

```
λ gcc swap_3.c && a.exe
Before swap a=10 b=20
After swap a=20 b=10
C:\Users\tch\Desktop\Kyau\cse-lab\lab-2
λ |
```

The window's taskbar shows the file "cmd.exe" and a search bar. The system tray at the bottom right indicates the time is 11:55 PM on 4/5/2023.

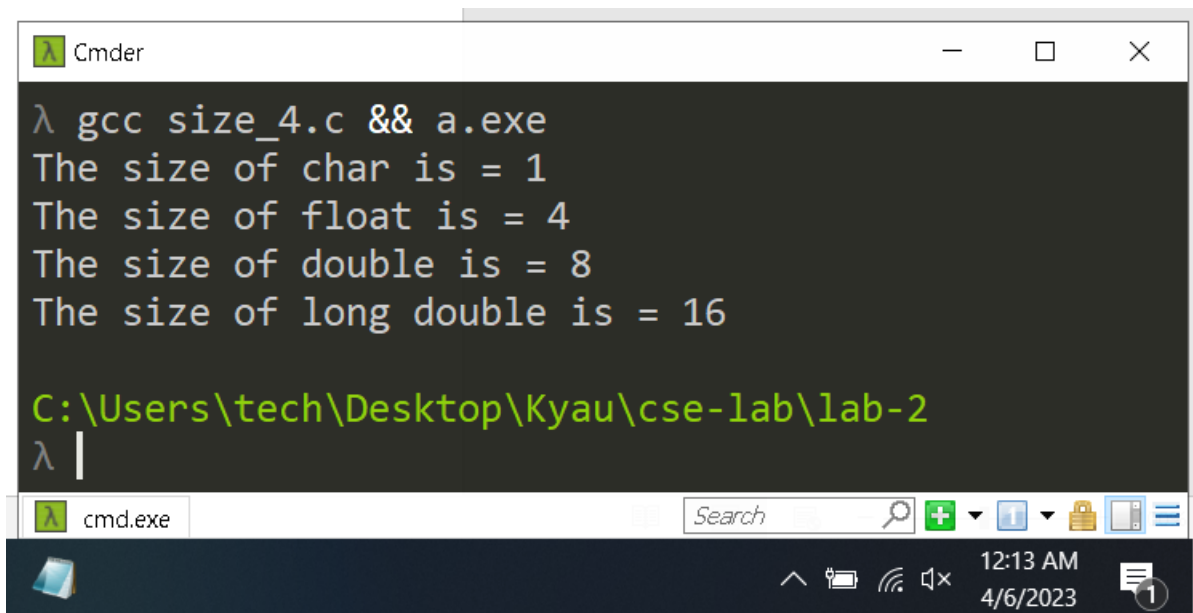
Problem 4: Write a program to print the size of char, float, double and long double data types in C

Code:

```
#include <stdio.h>

int main()
{
    printf("The size of char is = %d\n", sizeof(char));
    printf("The size of float is = %d\n", sizeof(float));
    printf("The size of double is = %d\n", sizeof(double));
    printf("The size of long double is = %d\n", sizeof(long double));
    return 0;
}
```

Output:



```
Cmder
λ gcc size_4.c && a.exe
The size of char is = 1
The size of float is = 4
The size of double is = 8
The size of long double is = 16

C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ |
```

The screenshot shows a Windows Command Prompt window titled 'Cmder'. The command prompt displays the execution of a C program. The output shows the sizes of various data types: char is 1, float is 4, double is 8, and long double is 16. The current directory is C:\Users\tech\Desktop\Kyau\cse-lab\lab-2. The taskbar at the bottom shows the time as 12:13 AM on 4/6/2023.

Problem 5: Write a program to check odd or even number (a) using modulus operator (b) using bitwise operator (c) without using bitwise and modulus operator (d) using conditional operator.

Answer (a) (using modulus operator)

Code:

```
#include <stdio.h>

int main(){

    int number;

    printf("Enter a number to check even or odd: ");

    scanf("%d", &number);

    printf("\tUsing modulus operator\n");

    if (number % 2 == 0)

        printf("%d is a even number\n", number);

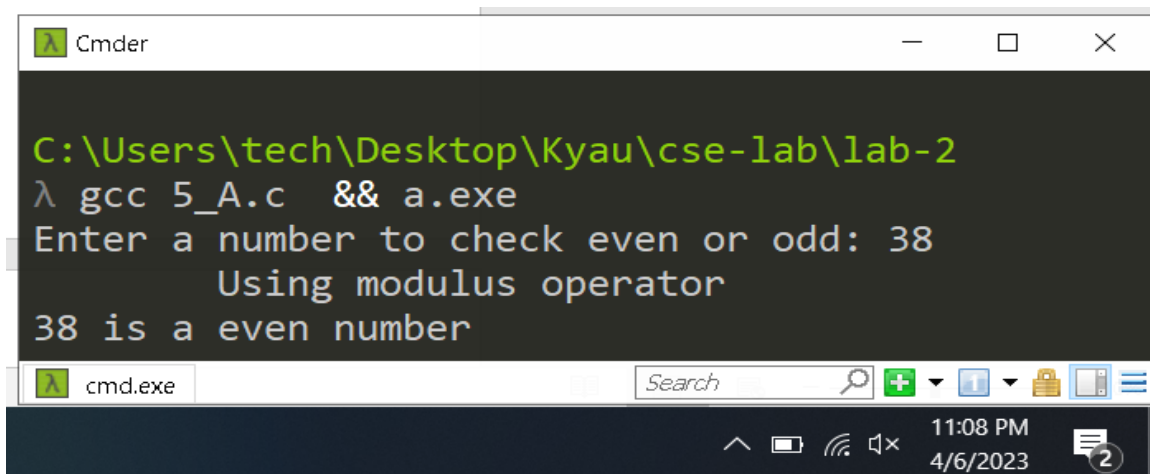
    else

        printf("%d is a odd number\n", number);

    return 0;

}
```

Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc 5_A.c && a.exe
Enter a number to check even or odd: 38
    Using modulus operator
38 is a even number
```

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-2'. The user has entered the command 'gcc 5_A.c && a.exe'. The program then prompts 'Enter a number to check even or odd: 38'. The program output is 'Using modulus operator' followed by '38 is a even number'. The taskbar at the bottom shows the time as 11:08 PM on 4/6/2023.

Answer (b) (using bitwise operator)

Code:

```
#include <stdio.h>

int main(){

    int number;

    printf("Enter a number to check even or odd: ");

    scanf("%d", &number);

    printf("\tUsing Bitwise operator\n");

    if ((number & 1) == 0)

        printf("%d is a even number\n", number);

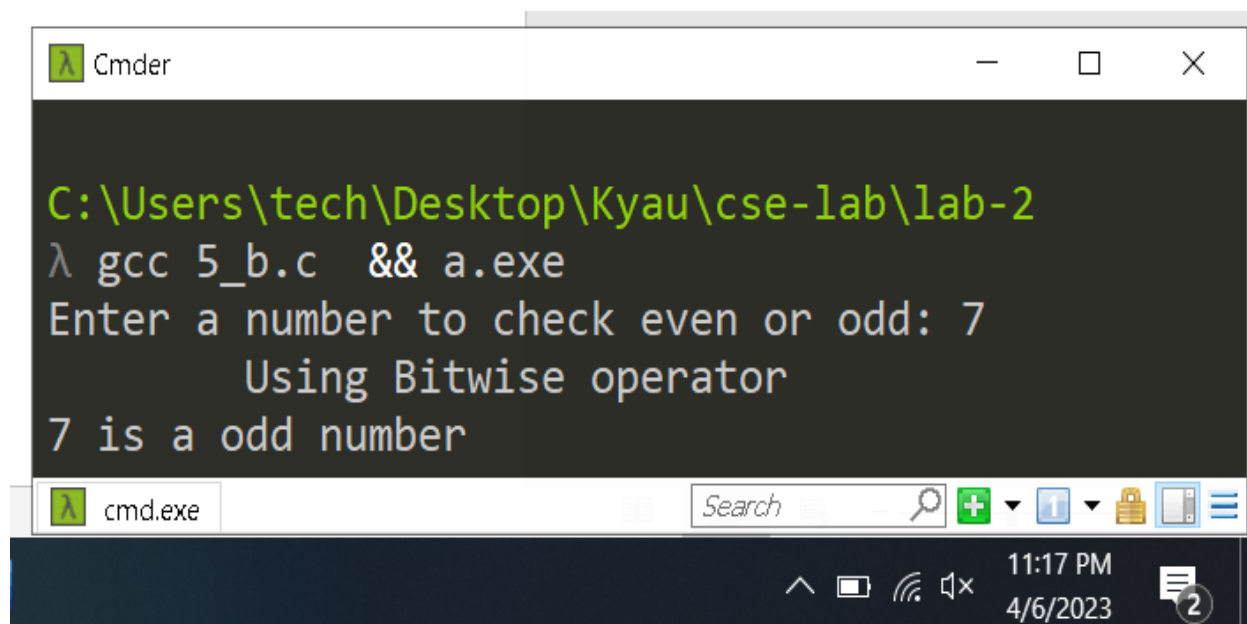
    else

        printf("%d is a odd number\n", number);

    return 0;

}
```

Output:



```
Cmder

C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc 5_b.c && a.exe
Enter a number to check even or odd: 7
    Using Bitwise operator
7 is a odd number

cmd.exe
```

11:17 PM
4/6/2023

Answer (b) (without using bitwise and modulus operator)

Code:

```
#include <stdio.h>

int main(){

    int number;

    printf("Enter a number to check even or odd: ");

    scanf("%d", &number);

    printf("\twwithout using bitwise and modulus operator\n");

    if ((number / 2) * 2 == number)

        printf("%d is a even number\n", number);

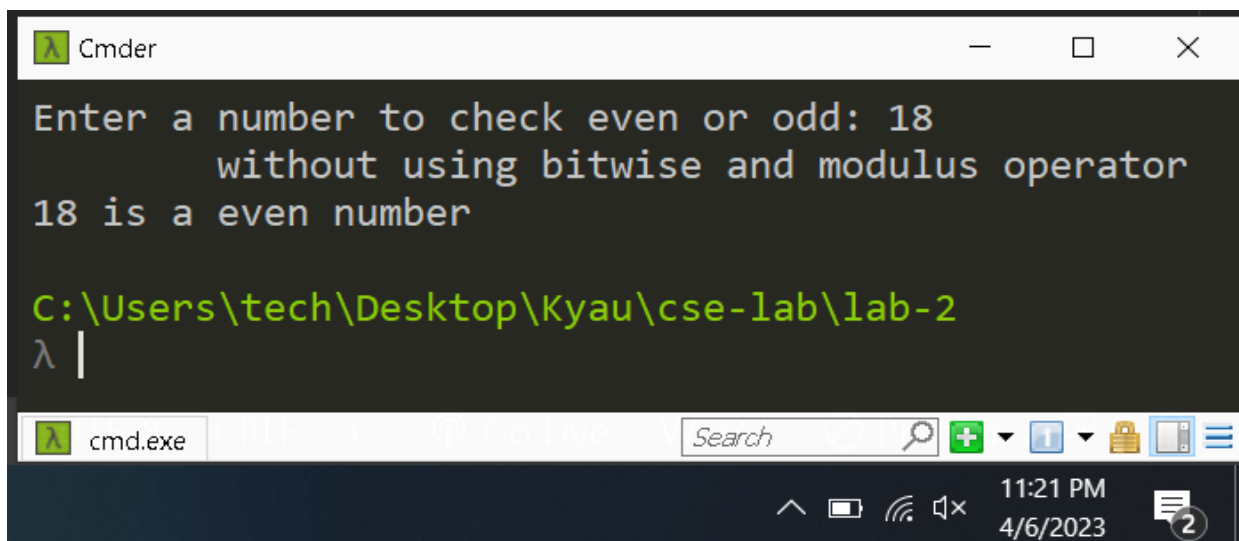
    else

        printf("%d is a odd number\n", number);

    return 0;

}
```

Output:



```
Cmder

Enter a number to check even or odd: 18
        twwithout using bitwise and modulus operator
18 is a even number

C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ |

cmd.exe Search 11:21 PM 4/6/2023
```

Answer (d) (using conditional operator.)

Code:

```
#include <stdio.h>

int main(){

    int number;

    printf("Enter a number to check even or odd: ");

    scanf("%d", &number);

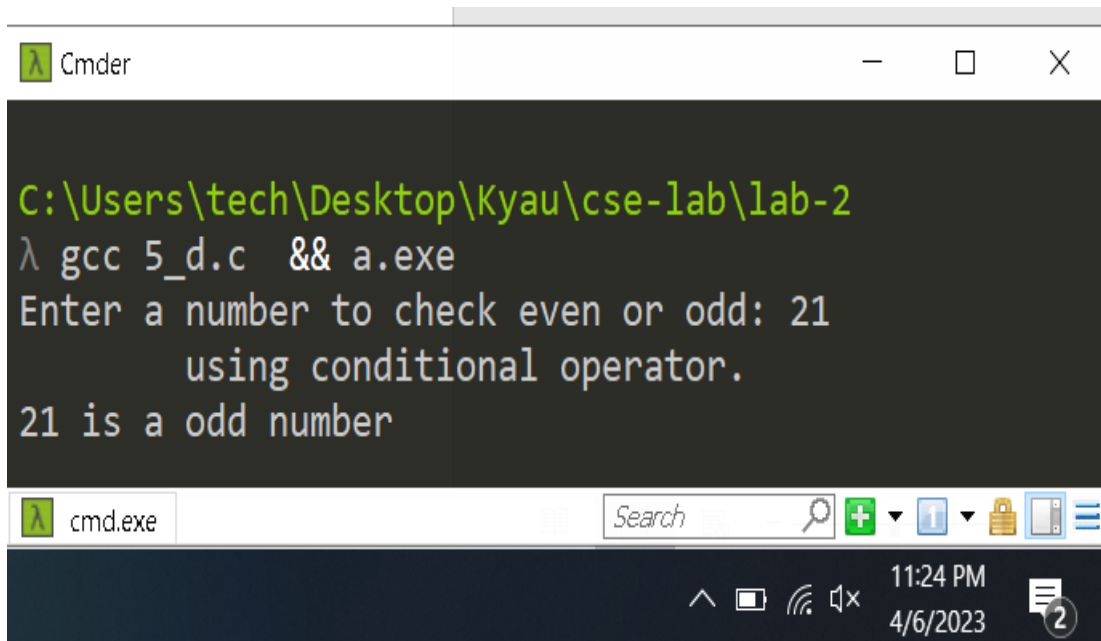
    printf("\tusing conditional operator.\n");

    number % 2 == 0 ? printf("%d is a even number\n", number) : printf("%d is a odd number\n", number);

    return 0;

}
```

Output:



```
Cmder

C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc 5_d.c && a.exe
Enter a number to check even or odd: 21
    using conditional operator.
21 is a odd number

cmd.exe
```

11:24 PM
4/6/2023

Problem 6: Write a program to calculate year, month and days of given days.

Code:

```
#include <stdio.h>

int main()
{
    int userInput, year, month, day;

    printf("Enter a number: ");

    scanf("%d", &userInput);

    year = userInput / 365;

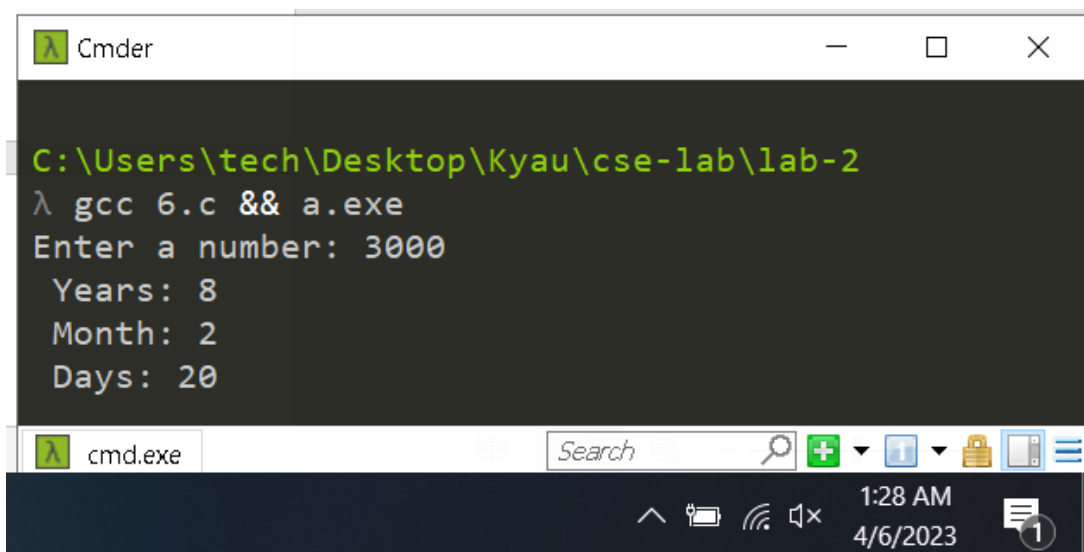
    month = (userInput - year * 365) / 30;

    day = (userInput - year * 365) - (month * 30);

    printf(" Years: %d\n Month: %d\n Days: %d\n", year, month, day);

    return 0;
}
```

Output:



```
C:\Users\tech\Desktop\Kyau\cse-lab\lab-2
λ gcc 6.c && a.exe
Enter a number: 3000
Years: 8
Month: 2
Days: 20
```

The screenshot shows a Windows Command Prompt window titled 'Cmder'. The current directory is 'C:\Users\tech\Desktop\Kyau\cse-lab\lab-2'. The user has executed the command 'gcc 6.c && a.exe'. The program prompts 'Enter a number: 3000' and outputs 'Years: 8', 'Month: 2', and 'Days: 20'. The taskbar at the bottom shows the system time as 1:28 AM on 4/6/2023.

7. Write a program to take input your date of birth and calculate age.

Code:

```
#include <stdio.h>

// function to calculate current age

void age(int present_date, int present_month, int present_year, int birth_date,
int birth_month, int birth_year) {

    int month[] = { 31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31 };

    if (birth_date > present_date) {

        present_date = present_date + month[birth_month - 1];

        present_month = present_month - 1;

    }

    if (birth_month > present_month) {

        present_year = present_year - 1;

        present_month = present_month + 12;

    }

    int final_date = present_date - birth_date;

    int final_month = present_month - birth_month;

    int final_year = present_year - birth_year;

    printf("\nPresent Age Years: %d Months: %d Days: %d", final_year, final_month,
final_date);

}
```

```
// main function

int main() {

    int present_date , present_month ,present_year;

    int birth_date ,birth_month ,birth_year;

    printf("Enter current Day/Month/Year: ");

    scanf("%d %d %d" ,&present_date, &present_month, &present_year);

    printf("Enter Birth Day/Month/Year: ");

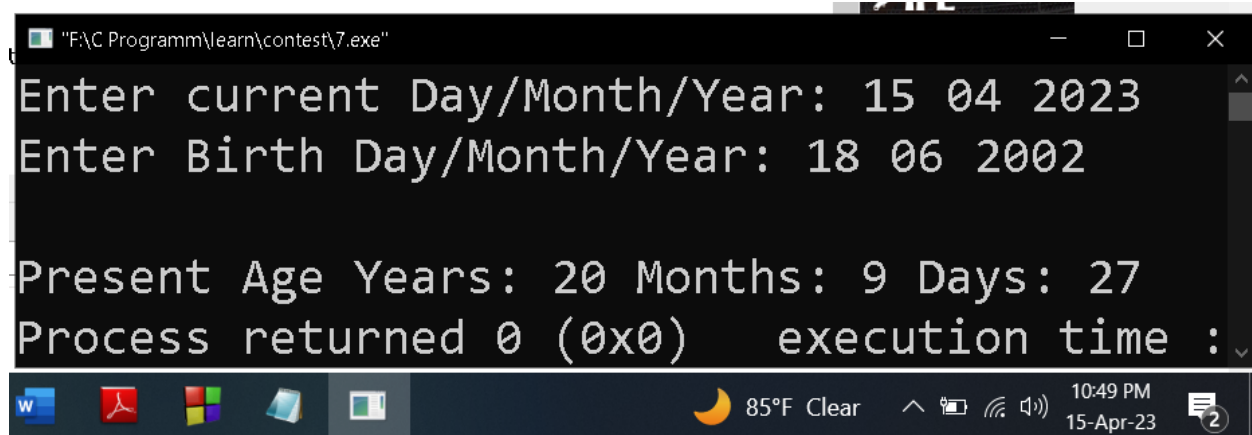
    scanf("%d %d %d" ,&birth_date, &birth_month, &birth_year);

    age(present_date, present_month, present_year, birth_date, birth_month,
    birth_year);

    return 0;

}
```

Output:



```
"F:\C Programm\learn\contest\7.exe"
Enter current Day/Month/Year: 15 04 2023
Enter Birth Day/Month/Year: 18 06 2002

Present Age Years: 20 Months: 9 Days: 27
Process returned 0 (0x0)   execution time :
10:49 PM
15-Apr-23
```