LEADING UNIVERSITY

estd. 2001

Data Algorithm Report

CSE: 2117

# Library Management System

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**Submitted by**

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**Submitted to**

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## Contents

## 1. Introduction

**Library Management System** is a software-based program which enables its users to donate and borrow books to and from one another. It is developed in order to create a platform which will help giving and taking of books a lot easier.An accurate implementation of a working library can be conducted using this program.

### 1.1 Purpose

The Library Management is developed with the intention to help users of this program to keep track of the books and other library related things.

We all know the struggles of a new student when he first admits into an university. Buying course related books every semester is very costly. After four months, we can give away these books to juniors who would need to buy these books. So, we tried to solve this problem by developing a program in which you can donate books and others in need can borrow it.

### 1.2 Project Scope

The Library Management System is not only going ease the pain of buying new books every semester but also going to help in-need students, to get the books for free which can surely save a lot of money. And this program keeps privacy because you can directly see the available books in the borrowing section with the contact information of the person who is donating.

### 1.3 Project Goals

1. To ease the pain of borrowing books.
2. To help the in-need students by letting them borrow books for free.
3. To ease the process of donating a book.

## 2. Product Description

### 2.1 Product Features

**SignUp\LogIn –**

The **SignUp** feature will help you to make your own profile with some of your Basic information. And the **LogIn** feature will enable you to log into your profile where if you want you can donate books or check out all the available books for borrow. During signup you will be asked to give your name, email, mobile number. During login the program will ask you about the information you gave earlier if they match, only then you can login to your profile. This will protect your privacy and information.

**Donate**

The **Donate** feature can be used to donate a book. When an user donates a book then the name of his donated book(s) will be added to the available booklist.

**Borrow**

The **Borrow** feature contains 2 important parts.

**List of all available books**

This feature would allow you to see all the available books that you can borrow. Even if you don't know the name of the book, you can just look for it in the list.

**Search**

This feature just directly enables you to search for the book you are looking. If this book is available for borrowing, you will find the list of people who are donating this book along with their contact number.

## 2.2 Functions/Environments used

We wrote the whole using the IDE named, **Codeblocks.** Multiple functions is used in this program and particular functions was called to do particular jobs.

**File**

**File** is basically used in a program for data collection. It was also used here for the same purpose. At first a file was made which will contain the name of all the books which are available for borrowing. Now every time a book got listed for donation. A file of the same name as the book would be built. Which contains the name and contact number of its donor.

**Map**

**Map** is used to keep count of elements in a program. In our project map was used to count the number of book(s) available in the inventory.

When user donates a book(s) the name of that book is added in our previously built file which contains all available books name. When this book name is added in the list we use a (+) sign beside it. Which means a book of this name has been added in the list. Similarly, if a book is borrowed and the donor confirms it, we also put this book(s) name in to the list but this time with (-) sign.

**String**

**String** is a function which is used to input information from the user. Here, we used strings to take information from the user like, user's name, E-mail, contact number, passwords and book names as well.

Getline() function was used when given string contains more than one word.

**Return**

**Return** functions was used so that user can smoothly go back and forth from his current displayed page.

### 2.3 Designing and Implementations

**GotoXY**

The function **gotoXY** is used to declare the coordinates X and Y in the console where positions of all the outputs are determined. We used gotoXY to print the outputs in an particular position in the console, so that it looks neat and gives a structure.

**Basic Coloring**

We used some colors just to give the program a different and give it a little taste. Basic coloring function in the C-language library was used. The exact color which was used is '5F', which tells the console to print the background 'Purple' and the text in the foreground 'Bright White'.

### 2.4 Recreational

**A simple game of Cricket**

Favorite game of our Team Leader Md. Hridoy Chowdhury, Cricket was added just give our own little taste. It is actually a barebone version the game where you can play by giving inputs through your keyboard. The rules of the game is provided inside the program.

## 3. Members Contribution

**Md. Hridoy Chowdhury**

Being a team leader, I had to outline the project task first and assign each task to my team members. Collecting and evaluating their task was part of my job. I had to debug some of their code and make it smooth and more optimized for the project. Many of the time I had to give Logical support to my team members.

The later part of the game was created by me. Where I had to make it more dynamic. If user loses toss, then computer automatically decides who would bat/ball first.

Users and computers scores were kept in an array. After end of 2nd innings these scores were compared to declare the Winner!!

**Naimur Rashid Rahib**

He was Given the designing and Implementation sector. He used gotoXY and basic coloring to do so. He also built the Donation function, where users give the name of the book he wants to donate. The name of this book is taken and are being listed on the Book list.

**Nakib Islam Chowdhury**

He created the SignUp function. For that user basic information were taken from him and then it was kept on a file which was built with the user name. He was also given the task to use map and then show which books are available in what numbers.

**Mahbuba Khanom**

She was given the task to create the Log In function. Earlier when User signed up, he gave his information. To log in he was asked to give his name, email and password of the account.

Earlier the file which was created by the user name is opened and his earlier given email and password is now checked with the email and password that he gave now to log in. If Email and password matches user can successfully log in.

Since she already knows how to read a file she was given the task to read and show all the available book list.

**Umma Oyra Shimu**

She was given the task to build the Edit Function. This also asks the user to give all necessary Information. But instead of creating a new file using the user name, this time the already existing file is appended

**Tanjina Islam**

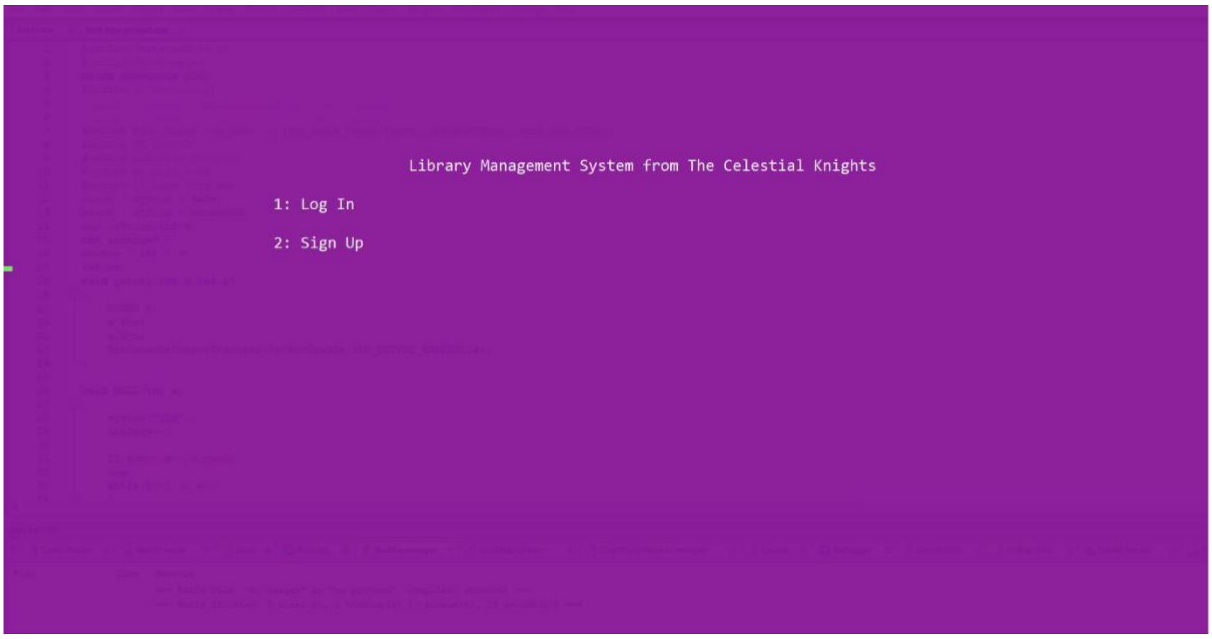
She was given the task to finish the initial part of the game. Which requires toss and Choosing to “BAT or Ball”. For this task she created a new function and used rand() function for generating random numbers.

## 4. User Interface

### 4.1 Inputs and outputs

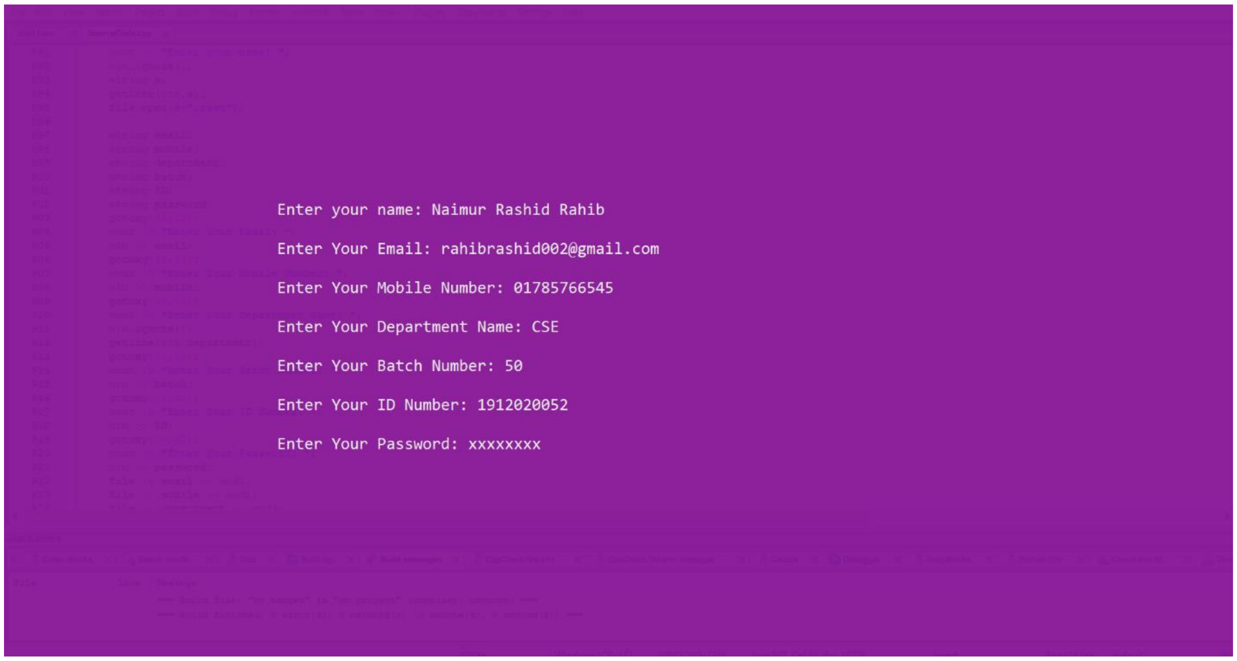
**ScreenShots of the actual program**

**SignUp/LogIn Page:**



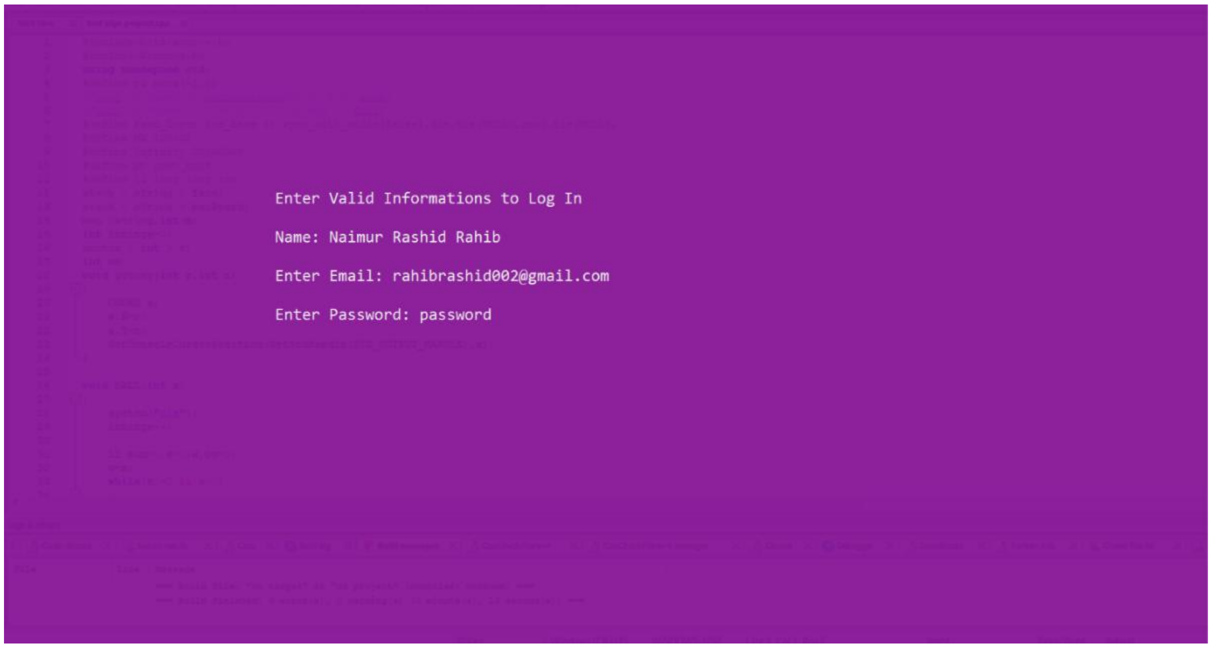
```
                    Library Management System from The Celestial Knights
          1: Log In
          2: Sign Up
```

**Sign up:**



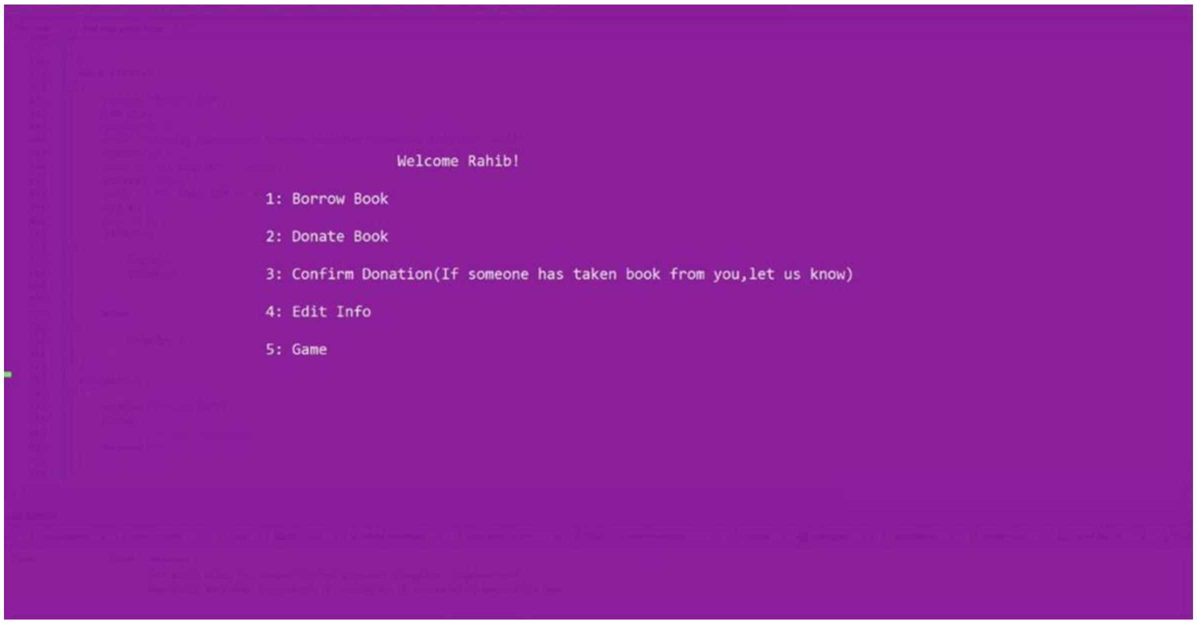
```
Enter your name: Naimur Rashid Rahib

Enter Your Email: rahibrashid002@gmail.com

Enter Your Mobile Number: 01785766545

Enter Your Department Name: CSE

Enter Your Batch Number: 50

Enter Your ID Number: 1912020052

Enter Your Password: xxxxxxxx
```

**LogIn:**



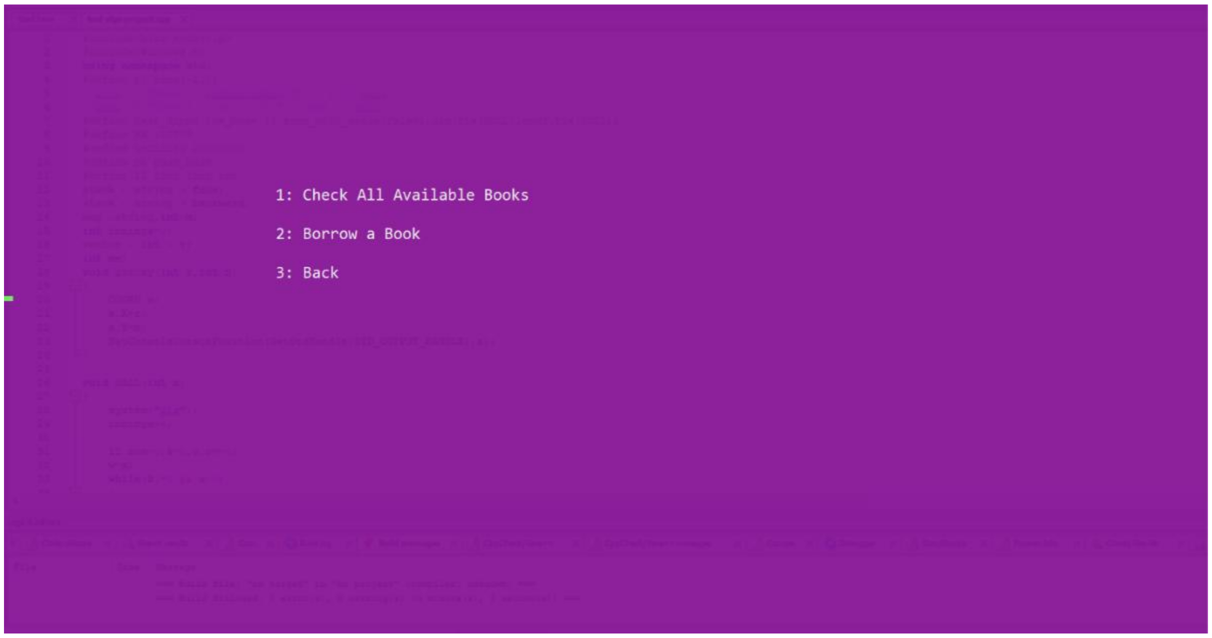
```
Enter Valid Informations to Log In

Name: Naimur Rashid Rahib

Enter Email: rahibrashid002@gmail.com

Enter Password: password
```

**Main Menu:**



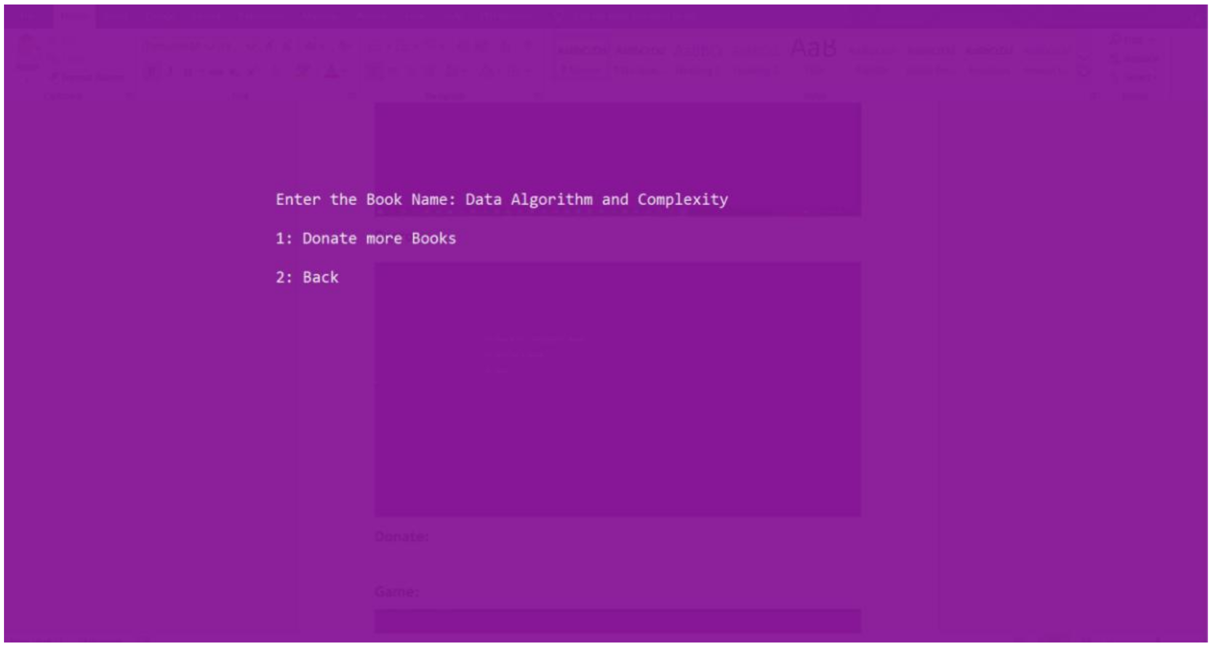
```
                    Welcome Rahib!

1: Borrow Book

2: Donate Book

3: Confirm Donation(If someone has taken book from you,let us know)

4: Edit Info

5: Game
```

**Borrow:**



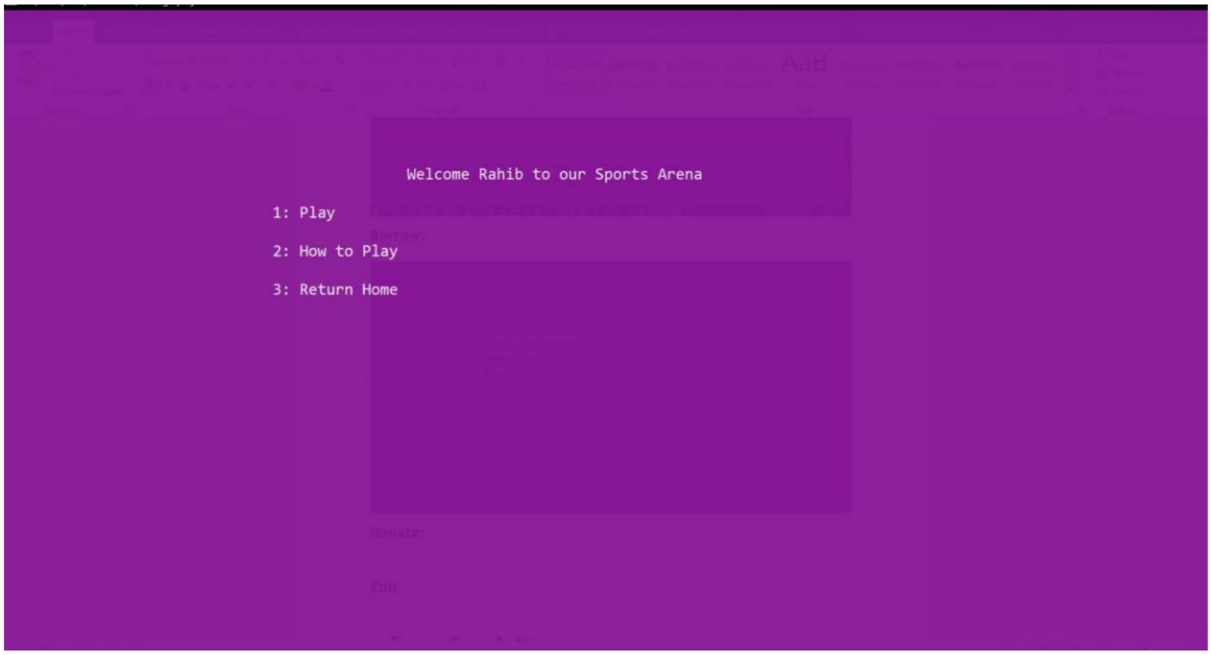
```
1: Check All Available Books

2: Borrow a Book

3: Back
```

**Donate:**



```
Enter the Book Name: Data Algorithm and Complexity

1: Donate more Books

2: Back
```

**Game:**



```
          Welcome Rahib to our Sports Arena

1: Play

2: How to Play

3: Return Home
```

## 6. Conclusion

This whole project was started with the intention to help and ease our problems of getting new books. We all face the problems of buying books that we need only for a limited amount of time. This project was aimed towards solving those problems and to minimize the efforts of borrowing a book. If we can use this **Library Management System** to its full potential then we should meet the goal that we set in the beginning of this project. Thank You for believing in us. I hope we did well. “Stay home, Stay safe” during this epidemic.

## 5. Reference

File Tutorial;

https://www.youtube.com/playlist?list=PLm6UpFb35TJ5ntNKXyPWinCx tqf8V5jGn

C programme to change Output text and background colour

https://youtu.be/q_jRca7woxE

C++ GotoXY function

https://youtu.be/fv54E9kZUvA

Random Number Generator

https://stackoverflow.com/questions/822323/how-to-generate-a-random-int-in-c#:~:text=The%20rand()%20function%20in,seed)%20to%20set%20a%20seed