Covid-19 Tracker

DS Project

We have made a Corona Virus Progression program, which shows the progress of the virus in 5 countries -:>

1) India
2) Italy
3) USA
4) Spain
5) China

This program Excessively uses Linked list, Stack, file handling, the knowledge of the conio.h library etc. We have also used a exponential growth algorithm to determine the growth of the virus for the upcoming days.

You can analyse the data between two dates, compare this data with the whole statistics of Covid-19.

You can see the overall information of Covid-19 in a country like, the total cases, recoveries, deaths, and also important headlines about the issue

After running the program you will be see a welcome screen with 2 options

1) Server side login
2) User login

1) THE SERVER SIDE -

This is the program which can be used to add new entries to the existing database.....
In the server side login, you will be taken to a login screen where you have to use the given credentials.

After entering the password you will be taken to a menu screen for selecting the country in whose database you'd like to add the entry.

After selecting a country you will be shown the last 3 entries in the database to which you can add the new one.

• The total number of cases on the date of the entry.

• The total number of deaths

• The number of people recovered on that particular day.

You will also be asked if you want to change the input, if not, Thank You for adding to the database.....

2) USER LOGIN -

This will take the user to a country selection screen where you will be asked to choose a country whose data the person wants to access, and then given 3 choices to choose from, which are ----:>

• The inBetween Dates Data:-

This function lets the user view the data ,i.e the total cases, recovered people, deaths etc for the country in a particular time selected by the user. This will also give a comparison of the growth rate of the virus between the selected Time period and the overall growth rate is done.

And result in this following form will be shown ——:>

Total cases: 82836 Cases in between: 82265 Deaths: 4616 Recovered: 78747

• The Information Centre ---:>

In this section, you will be shown the major news headlines for the selected country, like when was the first case appeared or the first death that was recorded etc.
The most important news that occurred in the country related to the virus along with the current status of cases, deaths, growth rate, and the number of recovered people will be displayed here.

The Covid - 19, helpline numbers for each country along with the helpline numbers of the Indian embassy of the country, for Indians who are currently living or visiting that particular country will be provided.

• The Growth Tracker --:>

The growth tracker will use the data from the last 7 days and will predict the progression of the virus for the next 15 days…

This will show calculating from mathematical methods that how many people are likely to be affected by the virus in the coming days

The model was tested various times, to predict the cases for some past days and checking if the model was precise, and the results were approximately accurate compared to the results of the tested date.

The comparison of previous tested results and the real data, from 28 April is attached here———————:::>

We are concerned with the number of cases here

Date	Original Cases	Our Prediction
1.5	37257	37836
2.5	39699	40133
3.5	42505	42569
4.5	46437	45154
5.5	49400	47895
6.5	52987	50802
7.5	56351	53886
8.5	59695	59157
9.5	62808	62427

The following results are subject to the lockdown and other government announced guidelines.

THINGS WE USED ----------::>

1) To make the menu to navigate through the program, conio.h library functions, such as, gotoxy(); _getch(); , getc(); , switch statements etc were used.

2) Data File Handling in C is used to read the data from the countries database that we made, analyse the data, calculate the growth rate of the disease.
3) Linked list is used to store the data which is obtained from the database, and calculate the results which are displayed.
4) A Mathematical algorithm was made to find how much growth will happen in the next few days, most accuracy achieved for data prediction within the next 15 days.
5) Stack is used for the prediction of the growth of the virus , basically, to store the previous data and leave the data for the last 7 days.

The working of the mathematical function is included in the folder as model_explanation.pdf, where the model is thoroughly explained.

In total, 1 .c, 4 .h files and 10 .txt were made namely——-:>

1) add.h
2) linked.h
3) menu.h
4) utilities.h
5) india.txt //database for Total recordes in India till 9 May
6) spain.txt //database for Total recordes in Spain till 9 May
7) china.txt //database for Total recordes in China till 9 May
8) italy.txt //database for Total recordes in Italy till 9 May
9) usa.txt //database for Total recordes in USA till 9 May
10) indiainfo.txt //Some main Headlines in India
11) spaininfo.txt //Some main Headlines in Spain
12) chinainfo.txt //Some main Headlines in China
13) italyinfo.txt //Some main Headlines in Italy
14) usainfo.txt //Some main Headlines in USA

This was made by ----------::>

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