

Covid-19 statistics applications

Part 1:

- Write a bash program that retrieves statistics for each country(except USA) in the world using REST APIs from the following link:
<https://documenter.getpostman.com/view/10808728/SzS8rjbc?version=latest> and saves them to **local** directory.
 - * Relevant fields to store print are “Date”, “Confirmed”, “Deaths”, “Recovered”, “Active”.
 - * Each country should be represented by a file in the local directory
 - * Using “jq” is **not** allowed
 - * Hint: Use `tr '\{\}' '\n'` to separate string into lines

Examples:

```
gabi@gabi-ubuntu:/opt/yocto/targil1$ ./get-covid-data-per-country.sh
Written ethiopia
Written niger
Written peru
Written syria
Written faroe-islands
Written saint-martin-french-part
Written svalbard-and-jan-mayen-islands
Written nicaragua
Written south-sudan
Written western-sahara
Written benin
Written fiji

gabi@gabi-ubuntu:/opt/yocto/targil1$ ll countries/
total 4484
drwxr-xr-x 2 gabi gabi 12288 Sep 28 16:34 ./
drwxr-xr-x 3 gabi gabi 4096 Sep 28 17:23 ../
-rw-r--r-- 1 gabi gabi 22486 Sep 28 17:26 afghanistan
-rw-r--r-- 1 gabi gabi 0 Sep 28 17:26 ala-aland-islands
-rw-r--r-- 1 gabi gabi 22002 Sep 28 17:25 albania
-rw-r--r-- 1 gabi gabi 22635 Sep 28 17:25 algeria
-rw-r--r-- 1 gabi gabi 0 Sep 28 17:26 american-samoa
-rw-r--r-- 1 gabi gabi 21486 Sep 28 17:25 andorra
-rw-r--r-- 1 gabi gabi 21325 Sep 28 17:25 angola
-rw-r--r-- 1 gabi gabi 0 Sep 28 17:26 anguilla
-rw-r--r-- 1 gabi gabi 0 Sep 28 17:24 antarctica
-rw-r--r-- 1 gabi gabi 20667 Sep 28 17:24 antigua-and-barbuda
-rw-r--r-- 1 gabi gabi 22927 Sep 28 17:25 argentina
-rw-r--r-- 1 gabi gabi 22418 Sep 28 17:25 armenia
```

```
israel + (/opt/...untries) - GVIM2
File Edit Tools Syntax Buffers Window Help

Confirmed:227100
Deaths:1441
Recovered:157537
Active:68122
Date:2020-09-26T00:00:00Z
Confirmed:231026
Deaths:1466
Recovered:159931
Active:69629
Date:2020-09-27T00:00:00Z
1245,1 Bot
```

Part 2:

- Write 3 C programs that read the data and perform the following(empty values can be skipped):
 1. Print all countries specific data according to:
 - i. Date
 - ii. Key (Confirmed, Death, Recovered, active)

```
gabi@gabi-ubuntu:/opt/yocto/targil1$ ./print_by_date.out --date 2020-09-27 --key Deaths
afghanistan: 1453
albania: 377
algeria: 1714
andorra: 53
angola: 174
antigua-and-barbuda: 3
argentina: 15749
armenia: 951
australia: 875
austria: 787
azerbaijan: 586
bahamas: 89
bahrain: 242
bangladesh: 5161
barbados: 7
belarus: 818
belgium: 9980
belize: 24
benin: 40
bhutan: 0
bolivia: 7858
bosnia-and-herzegovina: 822
botswana: 16
brazil: 141741
```

2. Print a “graph” according to:
 - i. country name
 - ii. Key (Confirmed, Death, Recovered, active)

(here displayed with resolution divided by 8 to fit the screenshot)



3. Export data by country to CSV:

```
gabi@gabi-ubuntu:/opt/yocto/targil1$ ./country_data_to_csv.out --country israel
gabi@gabi-ubuntu:/opt/yocto/targil1$ head -10 countries/israel.csv
Date;Confirmed;Deaths;Recovered;Active
2020-01-22T00;0;0;0;0
2020-01-23T00;0;0;0;0
2020-01-24T00;0;0;0;0
2020-01-25T00;0;0;0;0
2020-01-26T00;0;0;0;0
2020-01-27T00;0;0;0;0
2020-01-28T00;0;0;0;0
2020-01-29T00;0;0;0;0
2020-01-30T00;0;0;0;0
gabi@gabi-ubuntu:/opt/yocto/targil1$ libreoffice countries/israel.csv &
```

israel.csv - LibreOffice Calc

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Liberation Sans 10

C44 \sum = 0

	A	B	C	D	E	F
1	Date	Confirmed	Deaths	Recovered	Active	
239	2020-09-15T00	164402	1147	120727	42528	
240	2020-09-16T00	170465	1165	123219	46081	
241	2020-09-17T00	175256	1169	126329	47758	
242	2020-09-18T00	179071	1196	130024	47851	
243	2020-09-19T00	183602	1226	132449	49927	
244	2020-09-20T00	187902	1256	134069	52577	
245	2020-09-21T00	190929	1273	136780	52876	
246	2020-09-22T00	193374	1285	140751	51338	
247	2020-09-23T00	204690	1325	144963	58402	
248	2020-09-24T00	212115	1378	148813	61924	
249	2020-09-25T00	217899	1412	153574	62913	
250	2020-09-26T00	227100	1441	157537	68122	
251	2020-09-27T00	231026	1466	159931	69629	

- Write a shared library that provides functionalities like `load_db`, `load_country`, `iterate_by_key`, `get_next_element`, etc... this library should be compiled as a separate `.so` and used by all first 3 programs
 - input handling and printing should be done in the executables(.out) or as separate library(not the same one as described above)
- Write a makefile that compiles all C programs (3 binaries and the shared library)