Project Title: Health and Disease analysis.

Problem statement:

Implement A Project Based on Python, R, SQL which analyze disease , health .which takes input from users on the basis of hospital or disease that how much patients are found for every month and store it in database. show this data in the form of charts by using R language on the basis of location, date, age, gender, time wise to user

It gate updated every month the GUI is build using python framework Django for processing python is used and for data analysis R is used.

Introduction

Introduction is one of the important aspect,it gives brief information

about what we are going to demonstrate in the project.

   In this project we have done analysis on various disease occurring in various locations.We have taken real time data.Hospitals can sign-up in site,they can add, acess data when they want.Normal user can see various terms in the site.

We have analyzed disease report from year 2001 to 2018 according to the various

Aspects involving in it.

They are as follows:

1)According to the month.

2)Male-Female wise.

3)Sesonwise data analyzation.

4)Most spreading disease.

5)Disease wise graphs such as pie-charts,graphs.

6)top- least most disease caused according to month.

Scope and Objectives

a)Hospital-

1)New hospital can resister.

2)Registered hospital can add monthly data of their hospital.

3)They can view past submitted data.

4)Hospital have assign their descripted profile,they can modify it.

5)They can acess their report.

B)Normal User-

1)Normal user can see their report generated by system.

2)If they want,can get soft-copy of report.

c)System Adminstrator-

1)They have access to add new disese or remove it.

2)Also have acess to add new hospital and remove previous hospital data.

3)He have privilege to change analysis of algorithm.

4)Can modify Viewing structure of project.

Objectives-

1)To get whole report of disese which are most spreading disease and

Which disesase are spreaded in various Sesons.

2) To know which year-nonth wise diseases sprading disease.

Limitations

1)Analysis is done only for resistered hospital data that we have got due to

 What accuracy of analyzing data may be affected to some extent.

2)Out of hospital that have registered,they may provide wrong data which further

Lead to miss-interpretation of data.

3)We dosent have data of all hospitals so we generated report not as per the the similar to actual condition,it may vary.

Requirement

a)Hardware requirement-

1)Server

2)NIC

B] Network -

Continuous internet connection with static ip address

C] software requirement-

1]python

2]OS

Implementation:

- ➢ This project accept data from hospital by providing the secret ID to each hospital also it can get from government record for old records.
- ➢ Store it in data base with location, date-time and hospital name.
- ➢ Access this data for showing result to user as his requirement.
- ➢ For processing data use R language and for accept use python language is used. Used for storing data use SQL and for GUI Django is get use.

Applications:

- ➢ Used for study about specific disease that how much it is spread.
- ➢ Find a location that where the quantity of that disease is more in quantity and after founding that the health camp can be arranged on that places.
- ➢ Some diseases occurred in specific time so we can study basis of time period and find out those diseases and we can give prescription on that before they get occurred.

Design of disease data analysis

HOSPITAL

id	name
1	A
2	B
3	C

DIEASES

id	name
1	D
2	D2
3	D3

DATA

hospital id	disease id	date	quntity
1	1	5-6-18	35 K
2	2	6-6-18	18 K
2	1	8-9-15	25 K

geting data by using below parameters
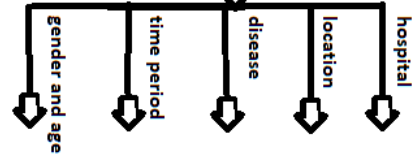
insert data using hospital and Disease

gender and age | time period | disease | location | hospital

Male
Female

DISEASE6 21 %
DISEASE5 23 %
DISEASE7 13 %
DISEASE1 12 %
DISEASE 2 25 %
DISEASE4 45 %
DISEAS 3 11 %
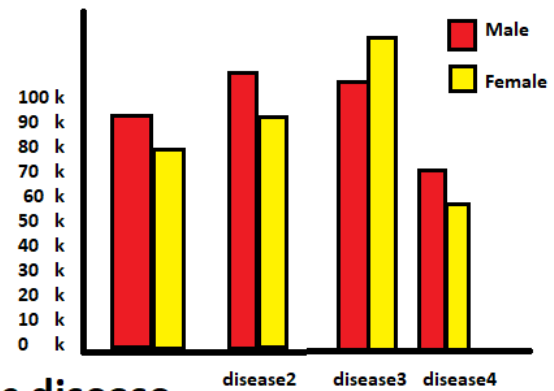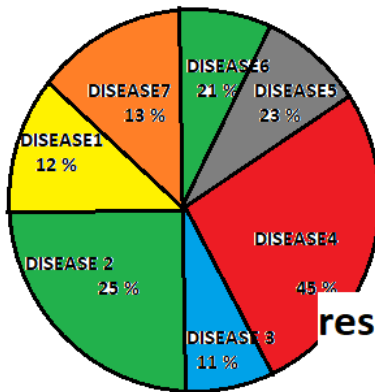
$$result = \frac{specific\ disease}{total\ disease} \times 100$$

disease2   disease3   disease4

100 k
90 k
80 k
70 k
60 k
50 k
40 k
30 k
20 k
10 k
0 k

Web View Of project

-- Hospital --

Login

Signup Step 1 Out 2

Signup step2 out of 2

Hospital: Add New Data

Screenshot 1 — 127.0.0.1/hospital/add/

HOSPITAL MAIN PAGE   VIEW DATA   ADD DATA

WELCOME ADMIN1   LOGOUT

enter data of year 2018 and month september ?

disease	male	female
Acquired syndrome	5675	7657
Actinomycosis	5675	5
Adenovirus infection	5	5
Amebiasis	5675	675
Anthrax	675	76576
Pulmonary	5	567
Arthropod fevers	5675	675
Ascariasis	65	655
Aspergillosis	male	4
Cat-scratch fever	354	356
Chickenpox	689656	3455
Genital	87	643
Cholera	7	89654
cavity infection	377	976
Pneumoni	354	5897
Colorado tick fever	male	female
Congenital rubell	male	female
Dengue	male	female
Ebola	male	female
Endometritis	male	female

Screenshot 2 — 127.0.0.1/hospital/add/

HOSPITAL MAIN PAGE   VIEW DATA   ADD DATA

WELCOME ADMIN5   LOGOUT

data of year 2018 and month september of diseases 5 submitted successfully ?

your records of this months are submitted recently by you there is only once in month records can be submitted for any query contack admin@kk.com

PUBLIC   PROFILE

Hospital viewing their old data

Hospital Profile with Help text:

-- Admin --

Admin : view Hospitals

ID	Login_Id	Email	password	Hospital	Actions
1	admin	nileshnmahajan@gmail.com	9657681290	Ramnarain Ruia Hospital	Edit
2	admin2	None	9657681290	Ram Narain Ruia Govt. HOSPITAL	Edit
3	ZBI3J&r6	None	Gn73lWgA	General Hospital	Edit
4	YZO4YtTE	None	#WbdvS_O	Government Women & Children Hospital	Edit
5	VoM5ZSfF	None	L_apn7Vx	Railway Hospital	Edit
6	SM46#9Bx	None	jIY$gPwM	Government Headquarters Hospital	Edit
7	BME7MvYJ	None	otcSZEUY	Headquarters Hospital	Edit
8	7yc8iZxW	None	Apmw_ANJ	Headquarters Hospital	Edit
9	hfO9KkJ_	None	f87tw@Um	Hospital	Edit
10	ZH11On5#	None	cEdDxI@Q	Headquarter Hospital	Edit
11	sdg11GEmq	None	DvruHJXh	Medwin Hospital	Edit
12	L29126bM6	None	KE@vUA7@	Pant Hospital	Edit
13	eJk135$T3	None	bFl4N$@x	Assam Medical College Hospital	Edit
14	GPB145KnV	None	r5to6Zmw	Medical College & Hospital	Edit
15	m_I15uSCP	None	pOK&uPYo	Civil Hospital	Edit
16	afi167leR	None	InpSqjZU	Civil HospitalDhubri	Edit
17	mz3173edH	None	oLd5jCQf	Civil Hospital	Edit
18	xdO182HaV	None	aO4Dp4ML	Civil Hospital	Edit
19	9&m19yVcR	None	5GcclbjO	Civil Hospital	Edit
20	3UV2055QQ	None	JH3$r%%@	Civil Hospital	Edit
21	r6z21#DkL	None	0$T0I@Uo	Civil Hospital	Edit
22	Cfw22BdKC	None	B_jGc$yc	Civil Hospital	Edit
23	E8U23IRGI	None	okkVtR@O	Darbhanga Medical College & Hospital	Edit
24	SsW24#6oH	None	SWdOEWT3	Pilgrim Hospitals	Edit
25	#Vb257ypo	None	E_iDoOYP	Eligin Hospital Gaya	Edit
26	5t826v4nI	None	5mwWoV8A	Arrah Sadar Hospital Arrah	Edit
27	Ugw27eEIx	None	$%rS$DEo	Chapra Sadar Hospital	Edit
28	Da3283VkB	None	1C_iMLlm	Moti Hari Sadar Hospital	Edit
29	qYd29u6Qa	None	y6OS4&&#	Muzaffarpur Sadar Hospital	Edit
30	f_v30VKIK	None	r8O%caF0	Bhagalpur Sadar Hospital	Edit

Admin: view Diseases

ADMIN MAIN PAGE   VIEW USERS   VIEW DISEASES

WELCOME   LOGOUT

ALL HOSPITALS USER DETAILS

ID	name	Actions
1	Acquired syndrome	Edit
2	Actinomycosis	Edit
3	Adenovirus infection	Edit
4	Amebiasis	Edit
5	Anthrax	Edit
6	Pulmonary	Edit
7	Arthropod fevers	Edit
8	Ascariasis	Edit
9	Aspergillosis	Edit
10	Cat-scratch fever	Edit
11	Chickenpox	Edit
12	Genital	Edit
13	Cholera	Edit
14	cavity infection	Edit
15	Pneumoni	Edit
16	Colorado tick fever	Edit
17	Congenital rubell	Edit
18	Dengue	Edit
19	Ebola	Edit
20	Endometritis	Edit
21	mononucleosis	Edit
22	Food poisoning	Edit
23	Botulism	Edit

Admin: update disease
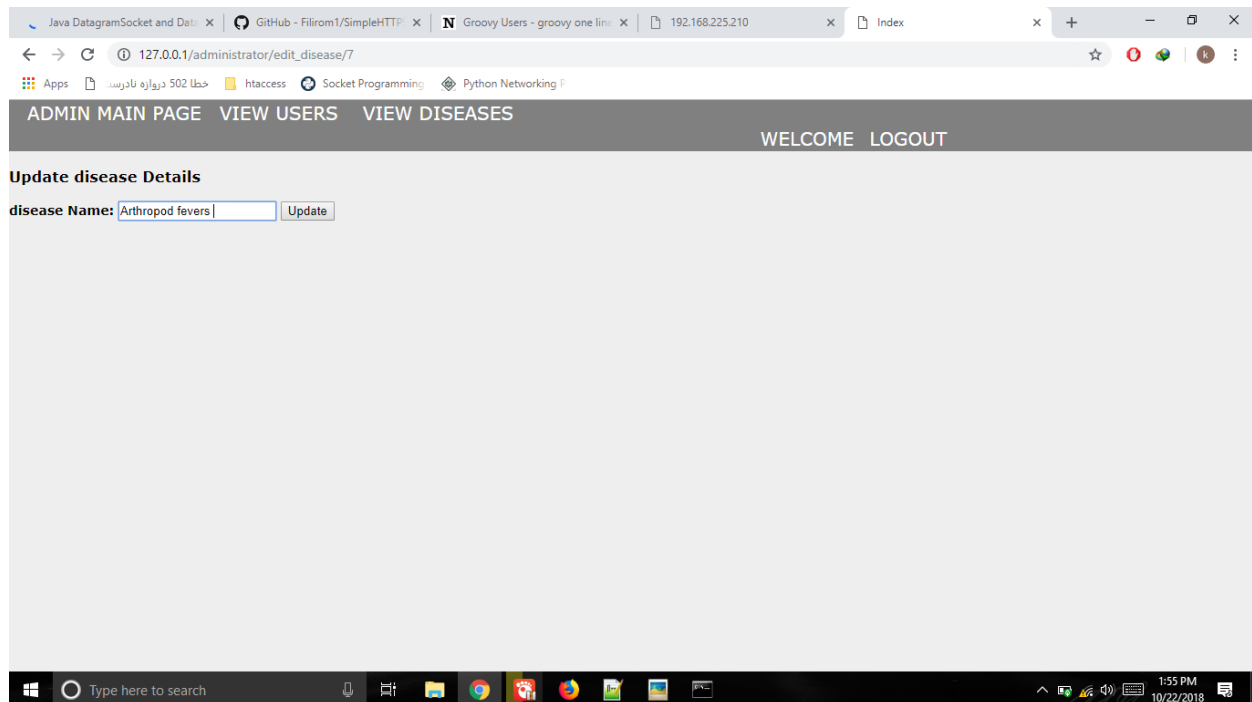
-- Analysis –
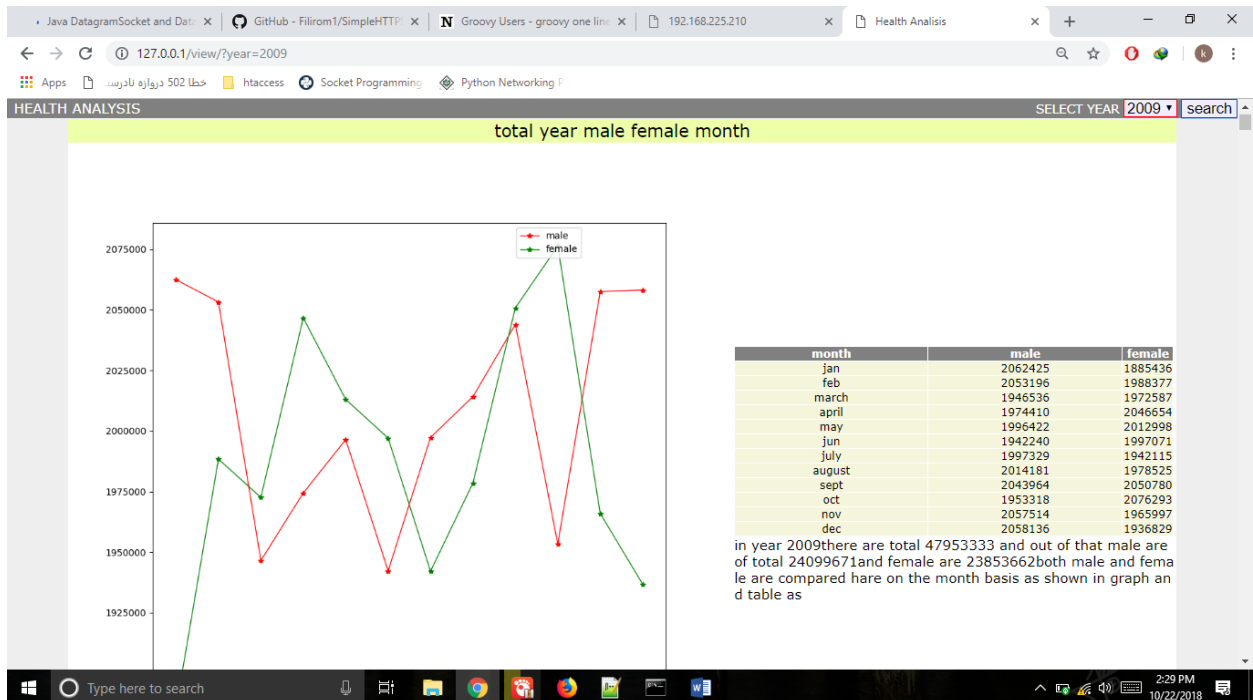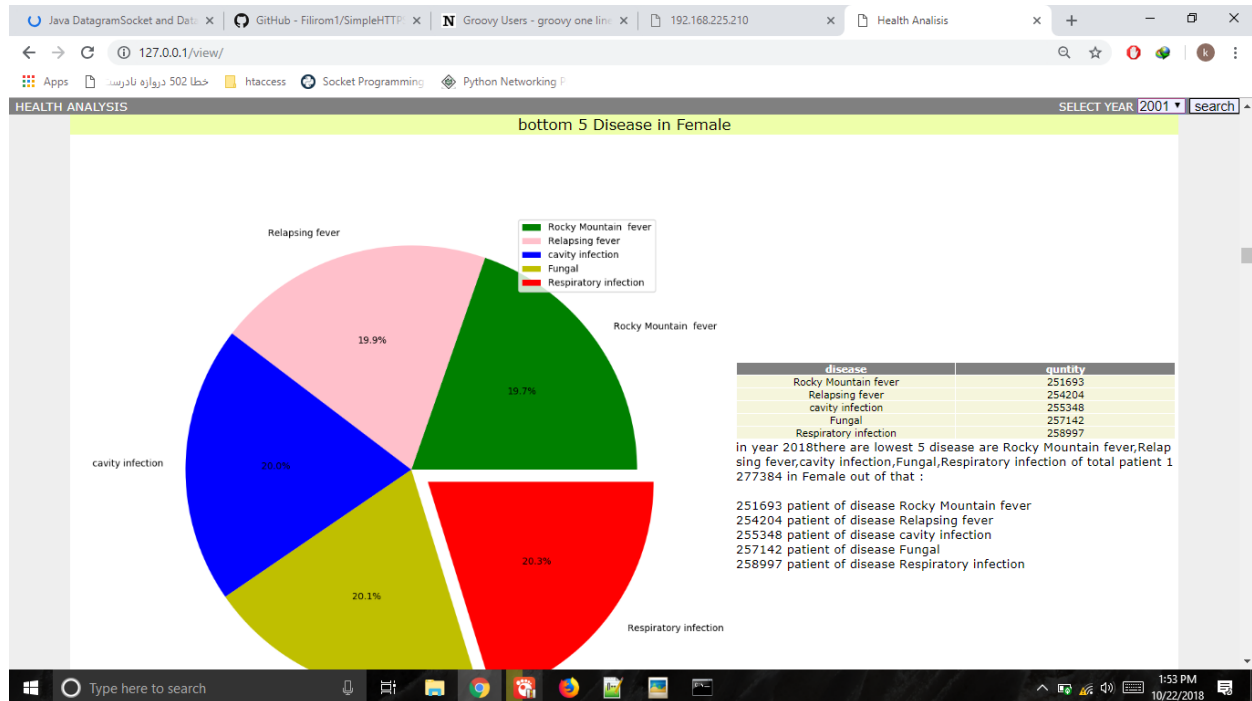
Data description

Disease:

We have take list of 100 disease in CSV format then stored them it in Sqlite with ID.

Patient:

We took patient data from internet in CSV format.it is with year,month,no of male, no of female.It is very huge amount of data so we have don't used CSV file due to time-space complexity also while inserting data multi-instance is not supported by file

So further we use Sqlite and stored this data in tabular form in Sqlite Again it takes some extra time for comparison and data selection due to huge no of rows so further we divided database in year basis.And created separate database each year.

In each record there is unique id assingned.it have month,disease,hospital,no of male-female details.

Hospital:

We have hospital database in which there is hospital name,hospital address are stored and for identifying hospital there is one unique id given to each hospital.

Users:

When new hospital registered his credintials are stored in databse.After we get hospital detail from him and stored them in hospital database.And this hospital_id assigned to user in this user table.

Data Processing:

Validating and inserting data-

We get monthly data fronm hospital.hospital disease will give information that you want.he can keep blank or assign non-delete value.

After getting data it will check that it greater than zero and less than define max length and it must be in integer format.

Getting data:

All data stored in SQL databse so for getting data use sql queries with required conditons using python sqlite library.

Graphical Presentation

Total year male-female months:
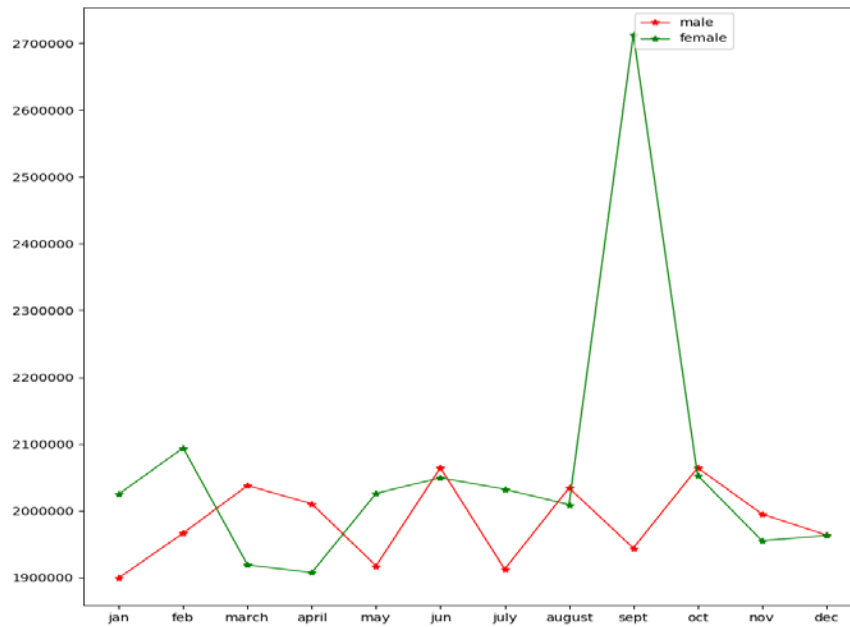
In year 2018 there are total 48558086 and out of that male are of total 23810635 and female are 24747451 both male and female are compared here on the month basis as shown in graph and table as

month	male	female
jan	1899532	2025053
feb	1966595	2094192
march	2037773	1919048
april	2010483	1907363
may	1917504	2026121
jun	2064516	2049371
july	1912508	2032308
august	2034261	2009327
sept	1944090	2058644
oct	2064443	2053030
nov	1995183	1955276
dec	1963692	1963154

Function Code:

```
for month in range(1,13):
```

```
q='select sum(male),sum(female) from patient where month = '+str(month)
            for row in cur.execute(q):
                    male[month-1]=male[month-1]+row[0]
                    female[month-1]=female[month-1]+row[1]
                        count=count+1
```
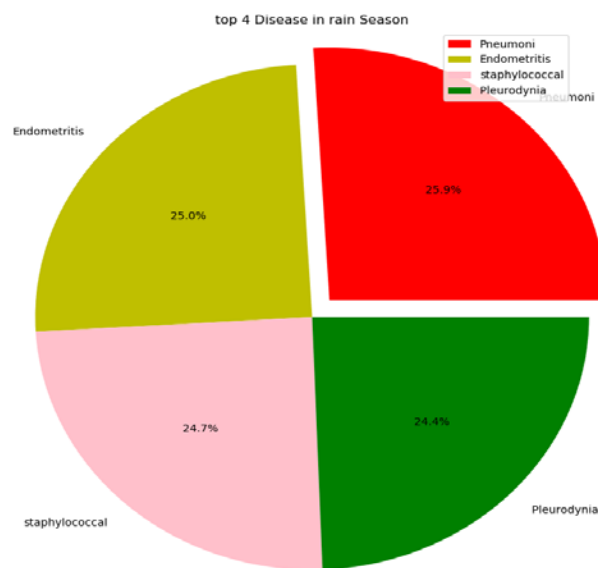
Top 4 Disease in rain Season:

top 4 Disease in rain Season

In year 2018 there are highest spread 4 diseases total is 907682 are Pneumoni, Endometritis, staphylococcal Pleurodynia in rain season out of that it in details as

235360 patient are Pneumoni

226852 patient are Endometritis

223966 patient are staphylococcal

221504 patient are Pleurodynia

disease	quantity
Pneumoni	235360
Endometritis	226852
staphylococcal	223966
Pleurodynia	221504

Function Code:

```
for row in cur.execute('select dis_id,sum(male+female) as total from patient where month IN
(7,8,9,1)group by dis_id order by total desc limit 4'):

        data.append(row[1])

        q="select dname from disease where id = "+str(row[0])

        for row2 in cur2.execute(q):

                rog.append(row2[0])
```
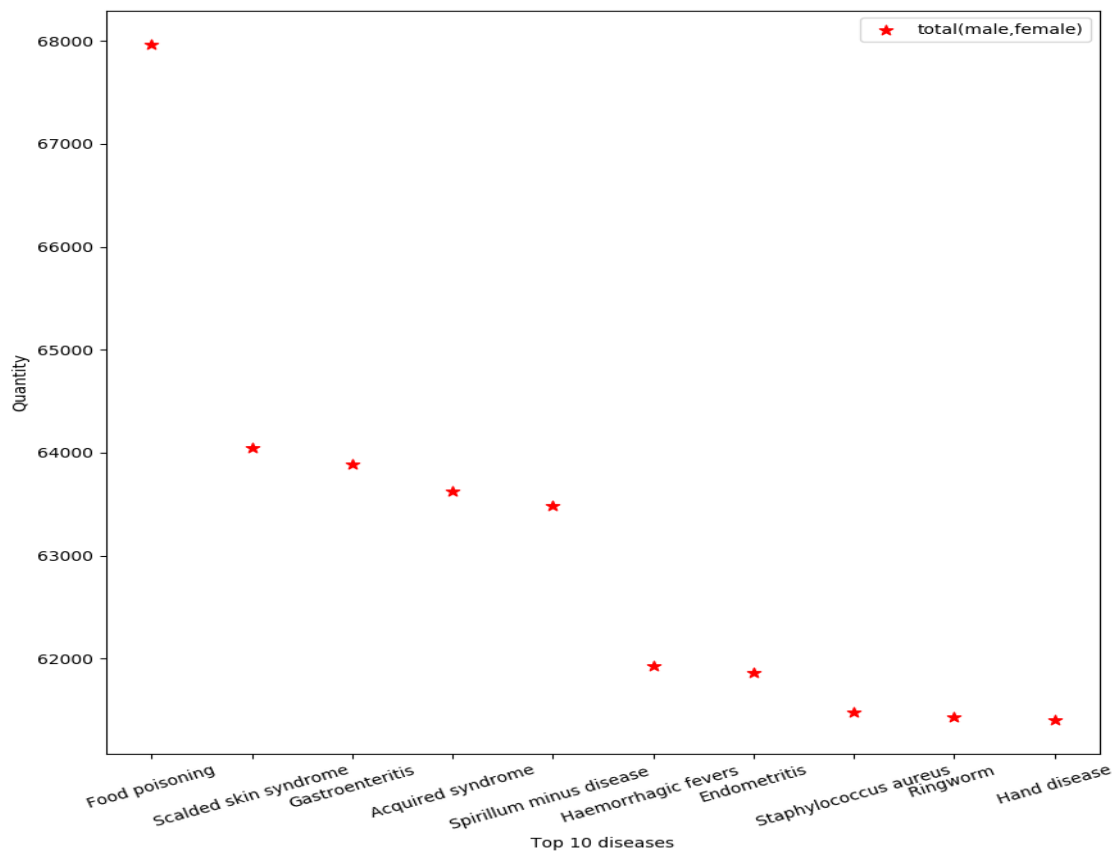
Top 10 Disease in jan 2018:

In year 2018 there are top 10 disease in jan month are Food poisoning,Scalded skin syndrome,Gastroenteritis,Acquired syndrome,Spirillum minus disease ,Haemorrhagic fevers ,Endometritis,Staphylococcus aureus,Ringworm ,Hand disease of total patient 631114 in total year out of that :

    67964 patient of disease Food poisoning
    64049 patient of disease Scalded skin syndrome
    63891 patient of disease Gastroenteritis
    63622 patient of disease Acquired syndrome
    63488 patient of disease Spirillum minus disease
    61932 patient of disease Haemorrhagic fevers
    61860 patient of disease Endometritis
    61476 patient of disease Staphylococcus aureus
    61429 patient of disease Ringworm
    61403 patient of disease Hand disease

disease	quantity
Food poisoning	67964
Scalded skin syndrome	64049
Gastroenteritis	63891
Acquired syndrome	63622
Spirillum minus disease	63488
Haemorrhagic fevers	61932
Endometritis	61860
Staphylococcus aureus	61476
Ringworm	61429
Hand disease	61403

Function Code:

```
    for row in cur.execute('select dis_id,sum(male+female) as total from patient where month=1
group by dis_id order by total desc limit 10'):

        data.append(row[1])

        q="select dname from disease where id = "+str(row[0])

        for row2 in cur2.execute(q):

                rog.append(row2[0])
```

Conclusion

After Completing This Project, it conclude that it can be helpful to analysis real time data. And it is directaly openly available to public to view and can be get it download after some updation in it.

After all this project is fully dependant on hospital and data given by them so there may be chance to this data may not be fully correct so the result being get produce is may be vary from actual reality.

Beyond that this project can be get use it need to be host in online server and it be most usefull for hospital ,public, and govt.

And the Project Conclussion is Get form in almost in each result and it is a final but it can again get derived and form more advance result from that. Currently it taking 20-30 second for output it can also get decrease if high Processor is get used.

Reference

1. **https://kkbuilds.com/project/all.php**
2. **https://javatpoint/python-tutorial**
3. **https://geeksforgeeks.org/sqlite-embed-in-python**