Project Overview

1. Medical Data

The medical data for our project has been taken from the pdf containing numerous medical case studies and necessary information has been extracted in text format.

2. Medical Data Extraction

Using NLP, through the text file containing medical case studies, different medical data like age, sex, symptoms, past medications, physical examinations, tests, diagnosis and treatments of each record has been extracted and stored in structured form.

	1	2	3	4	5	6	7	8	9	10	...	60	61
Age	75-year-old	34-year-old	19-year-old	26-year-old	56-year-old	66-year-old	None	22-year-old	85-year-old	64-year-old	...	63-year-old	40-year-old
Sex	M	M	M	F	F	F	M	M	F	M	...	F	M
Symptoms	[blackouts, hypertrophy, dizziness, gout]	[myocardial infarction, chest pain, ill, sore ...	[', chest infections, infection]	[cough, whomhas hayfever, bronchitis betweenthe]	[pain, ulcer]	[tiredness, appetite, constipation, breathless...	[nausea, morning nausea hasbeen, weight loss, ...	[glandular fever, anorexia, feverish, pains]	[', itching and cramps, appetite, cerebrovascu...	[difficultto, depressed, bruising]	...	[', headaches, thyroid disease, itching, diabe...	[myocardial infarction, diabetes mellitus, cel...
Pre_Medication	[ibuprofen]	[cholesterol, thecholesterol]	[]	[]	[]	[]	[]	[ecstasy]	[]	[]	...	[onthyroxine]	[glucose]
Physical Examination Results	{'Pressure': '96/64 mmHg', 'Height': '3 cm'}	{'Pressure': '124/78 mmHg'}	{'Weight': '48 kg', 'Height': '1.6 m'}	{}	{'Weight': '115 kg', 'Pressure': '124/76 mmHg'}	{'Pressure': '148/90 mmHg'}	{'Pressure': '146/84 mmHg'}	{}	{}	{'Pressure': '168/104 mmHg'}	...	{'Pressure': '128/76 mmHg'}	{'Pressure': '72/50 mmHg'}
Test	[The ECG, cardiac output, ECG, the ventricular...	[The ECG, troponin measurements, antibody titr...	[genetic tests, Respiratory functionshould, Th...	[a meandiurnal variation, the exercise test, p...	[Chest X-ray, liver enzymes, Blood cultures, A...	[colonoscopy, Chest X-ray, Histology, abdomina...	[the sodium, the blood film, Further investiga...	[serological tests, enzyme levels, The raised ...	[A renal biopsy, Previous measurements, ultras...	[His ACTH level, A dexamethasone suppression t...	...	[TSH, These antibodies, gamma-glutamyl transpe...	[the rate, The blood glucose level, blood gluc...
Diagnosis	[loss of consciousness splits into neurologica...	[myocardial infarction, myocardial inflammatio...	[thegenetic abnormality, malabsorption, agamma...	[sinusitis, fibrosing alveolitis, atopic, Coug...	[acute cholecystitis, Jaundice, cholecystitis,...	[bleeding, weight loss, 18Carcinoma of the col...	[historyAlcoholic liver disease, bleeding, jau...	[drug-induced hepatitis, chronic disease, ', a...	[weight loss, IgA nephropathy, hypotension, de...	[Cushing's disease, bronchial carcinoma, depre...	...	[xanthomata, dry mouth, Itching, sicca syndrom...	[ketosis, rep-resenthyperglycaemic ketoacidoti...
Treatment	[a dual-chamber system pacing, The treatment, ...	[analgesics, thrombol-ysis, non-steroidal anti...	[fludrocortisone, gene-replacement therapy, lu...	[inhaled steroids, The inhaled steroid, methac...	[metronidazole, givenintravenous fluids, a cho...	[end-to-end anastamosis, a sigmoid colectomy]	[Diuretics]	[himappropriate support, antiviral therapy]	[reduced vitamin D levels, Conservative manage...	[corticosteroid treatment, appropriate treatme...	...	[cholestyramine, raised alkalinephosphatase, t...	[Insulin therapy, Antibiotics, acetoacetate, t...

Fig: Medical records in structured form after data extraction using NLP

3. Data Visualization

Tools used: Flask, Reactjs

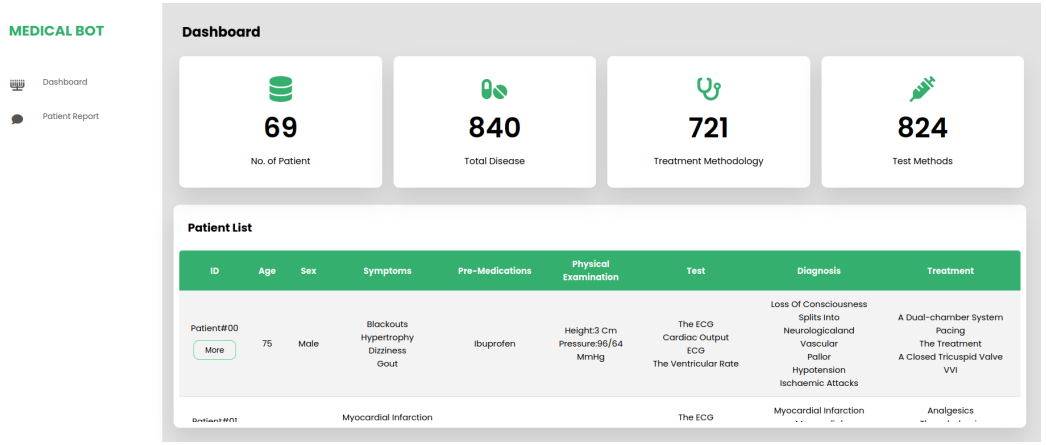

Fig: Patients records summary

Fig: Individual patient record

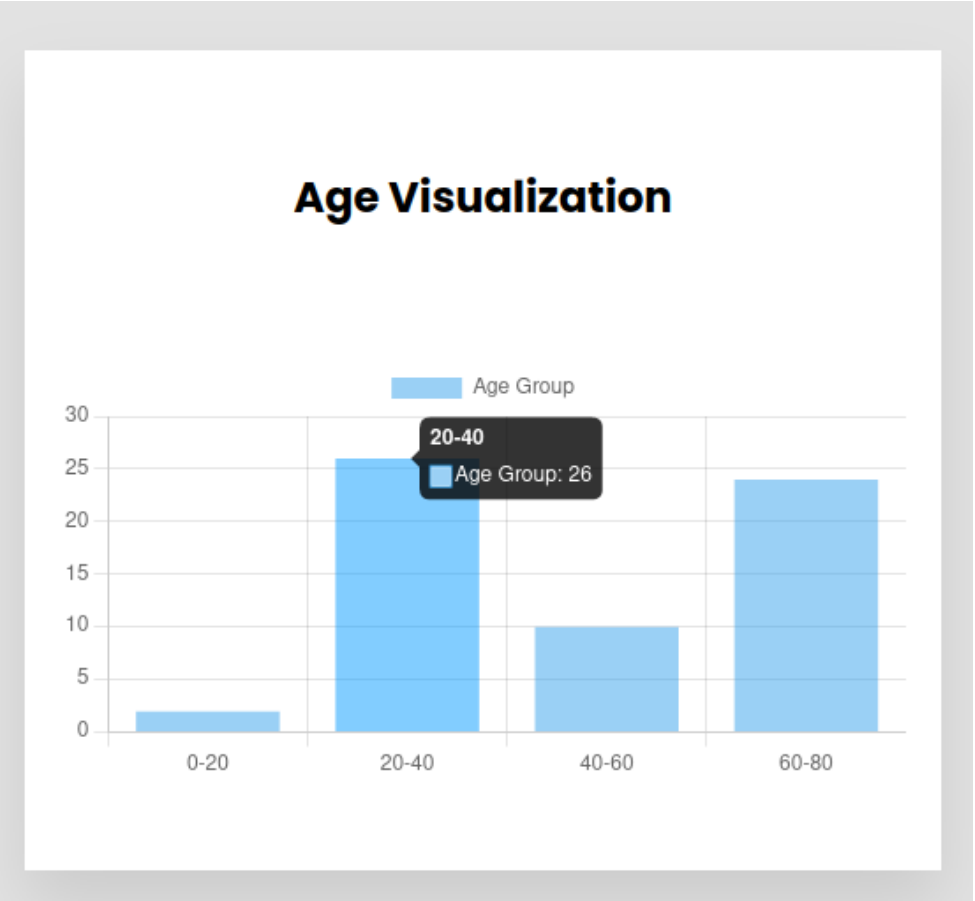

Fig: Bar graph representation of number of patients in different age groups in dataset

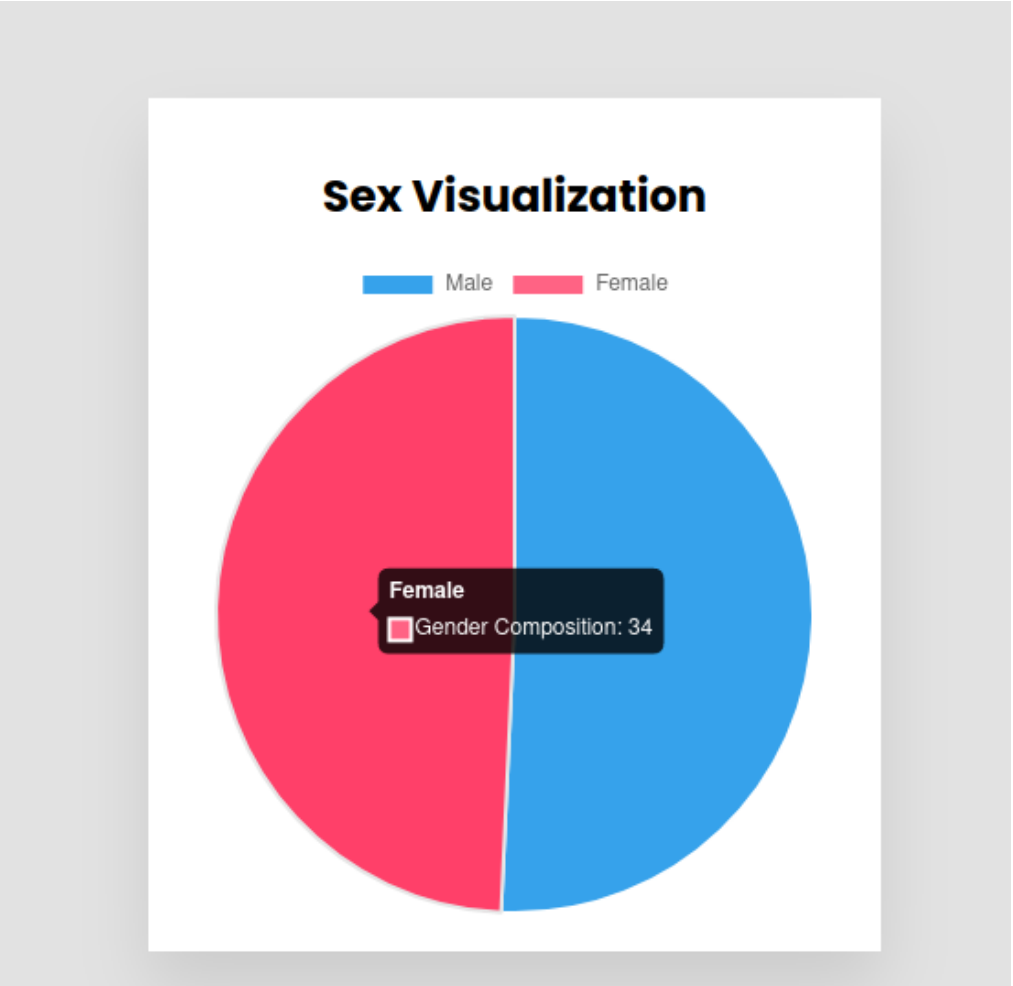

Fig: Pie chart representation of number of male and female in dataset

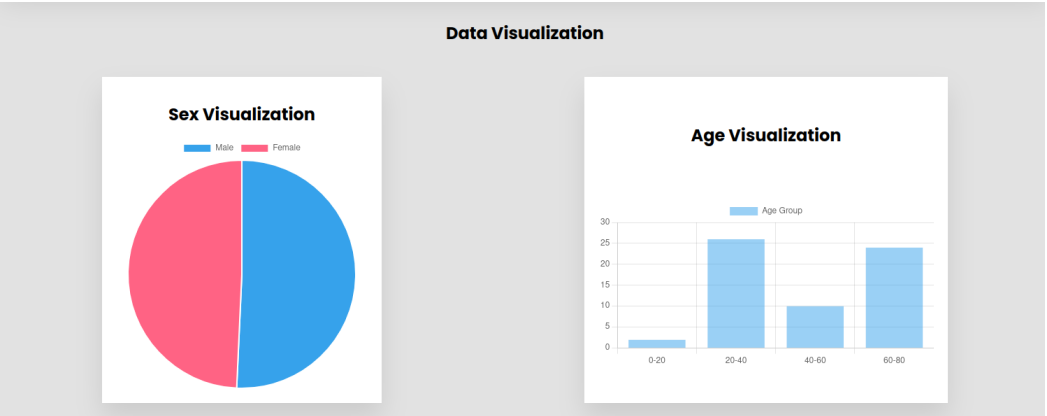

Fig: Data visualisation

Project Instruction

1. Git clone: **https://github.com/AronShrestha/NLP-Extracting-medical-Data-**
2. In Terminal
    a. **cd Backend**
    b. **pip install -r requirements. Txt**
    c. **python3 master.py**
    d. **cd ..**
    e. **cd frontend**
    f. **npm install**
    g. **npm start**