

## **Extorting medicine for disease based on symptoms**

In this paper author proposing concept to extract medicine names and symptom from user clinical (medical) document.

This paper has following modules

1)Preprocessing : after uploading clinical document we will extract sentences from those documents using standford parser.

2)Negation annotator : Using NegEx we will remove those medicines and symptoms which user has to avoid. To further understand negation annotatorread below para in red lines

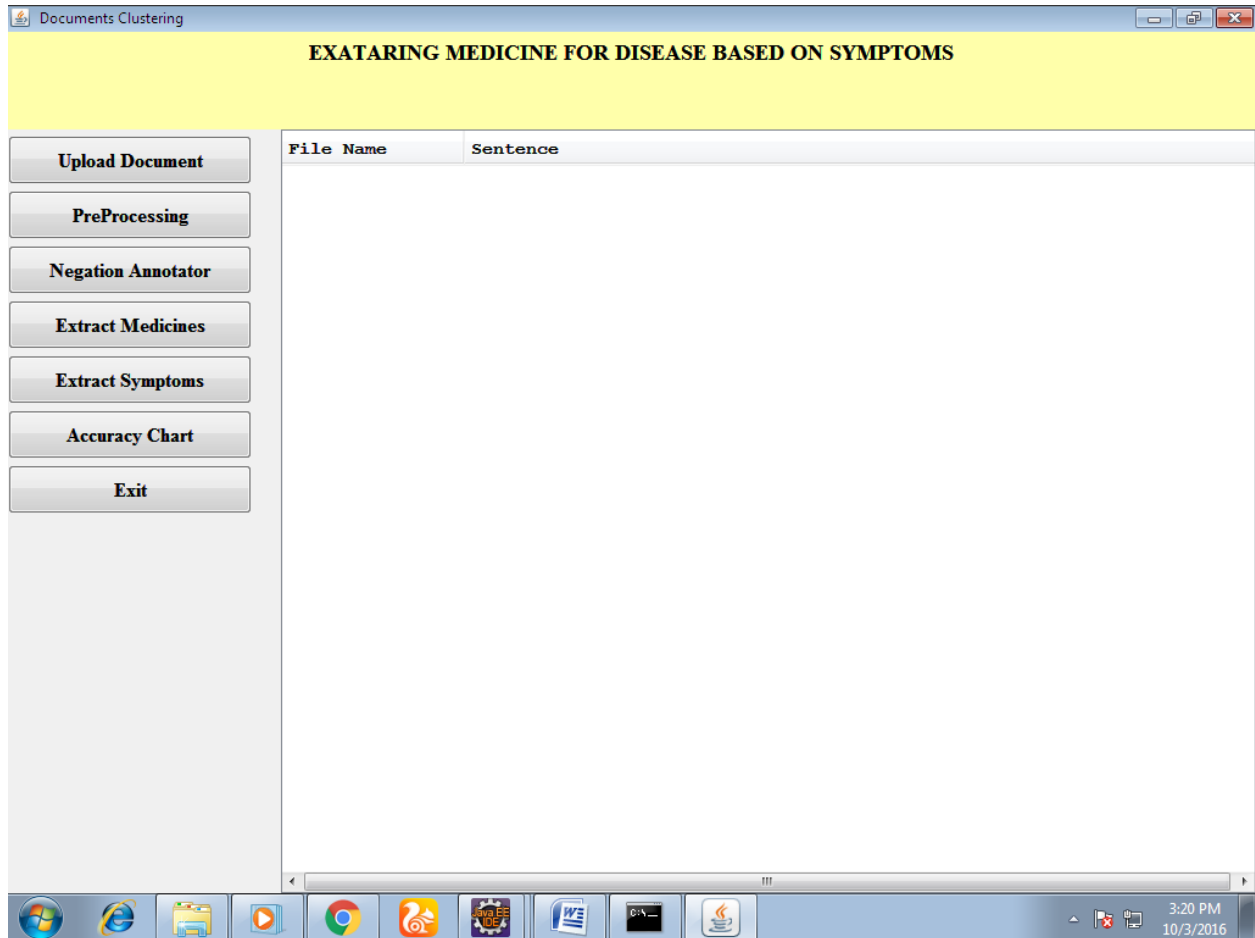
We also use negation annotator to remove negation symptom and medication names. An example is that “The patient was told to avoid taking aspirin or any other NSAIDs given his GI bleed”, we remove “aspirin” and “NSAIDs” because of the pre-negation words “avoid”. Pre-negation and post-negation are defined in Negation maker (NegEx: <http://www.dbmi.pitt.edu/chapman/NegEx.html>). Pre-negation is negation words like avoid, deny, cannot, without, and so on. Post-negation is negation words like free, was ruled out, and so on.

3)Extract medicines : Using this we will extract medicines from clinical data using MedEx API

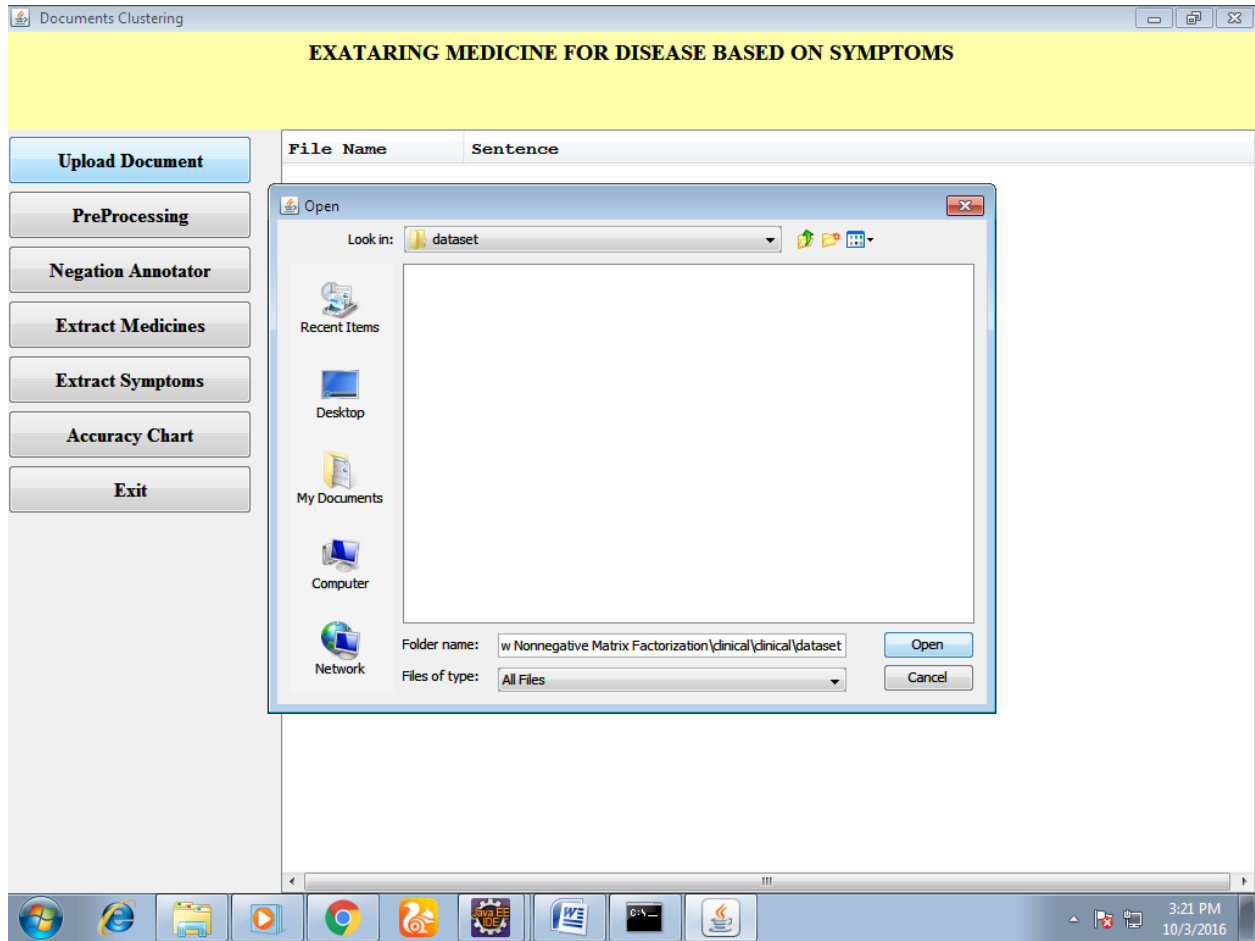
4)Extract Symptoms: Using this we will extract symptoms from clinical document. U can add new symptoms inside ‘symptoms.txt’ file

Screen shots

Note : Dataset is inside dataset folder. This folder contains some clinical documents



Now upload dataset folder



Now click on preprocessing to get sentence list

**EXATARING MEDICINE FOR DISEASE BASED ON SYMPTOMS**

**Upload Document**

**PreProcessing**

**Negation Annotator**

**Extract Medicines**

**Extract Symptoms**

**Accuracy Chart**

**Exit**

File Name	Sentence
1-year-old-exam-hp...	Patient given information on conjunctivitis .
1-year-old-exam-hp...	Tobramycin ophthalmic Dosage : 0.3 % ointment Sig : Apply to both eyes QID x 5 days Dispens
a-5-month-old-boy-...	Respiratory syncytial virus bronchiolitis with right otitis externa .
a-5-month-old-boy-...	Plan was to admit to bronchiolitis pathway , and ciprofloxacin for right otitis externa eardrops tv
abnormal-echocardi...	The patient admitted for gastrointestinal pathology , under working treatment .
abnormal-echocardi...	History of prior heart murmur with echocardiogram findings as above .
abnormal-echocardi...	Basically revealed normal left ventricular function with left atrial enlargement , large pleural ef
abnormal-echocardi...	From cardiac standpoint , conservative treatment .
abnormal-echocardi...	Possibility of a transesophageal echocardiogram to assess valvular insufficiency adequately we
abnormal-echocardi...	After extensive discussion , given her age 86 , limited activity level , and no intention of underg
abnormal-echocardi...	Based on the above findings , we will treat her medically with ACE inhibitors and diuretics and s
abnormal-echocardi...	She has a normal LV function .
abnormal-stress-tes...	The patient underwent cardiac catheterization with myself today which showed mild-to-moderate
abnormal-stress-tes...	Aspirin 325 mg once a day .
abnormal-stress-tes...	Metoprolol 50 mg once a day , but we have had to hold it because of relative bradycardia which
abnormal-stress-tes...	Nexium 40 mg once a day .
abnormal-stress-tes...	Zocor 40 mg once a day , and there is a fasting lipid profile pending at the time of this dictation .
abnormal-stress-tes...	I see that his LDL was 136 on May 3 , 2002 .
abnormal-stress-tes...	Plavix 600 mg p.o. x1 which I am giving him tonight .

Exatating medicine for disease based on symptoms

Now apply 'Negation annotator' to remove unwanted medicines and symptoms

**View Process Data**

1 : After extensive discussion , given her age 86 , limited activity level , and no intention of undergoing any treatment in this regard from a surgical standpoint , the patient does not wish to proceed with a transesophageal echocardiogram .

2 : He was kept off aspirin given his GI bleeding .

3 : After extensive discussion , given her age 86 , limited activity level , and no intention of undergoing any treatment in this regard from a surgical standpoint , the patient does not wish to proceed with a transesophageal echocardiogram .

4 : He was kept off aspirin given his GI bleeding .

[Click here to remove above negation sentences](#)

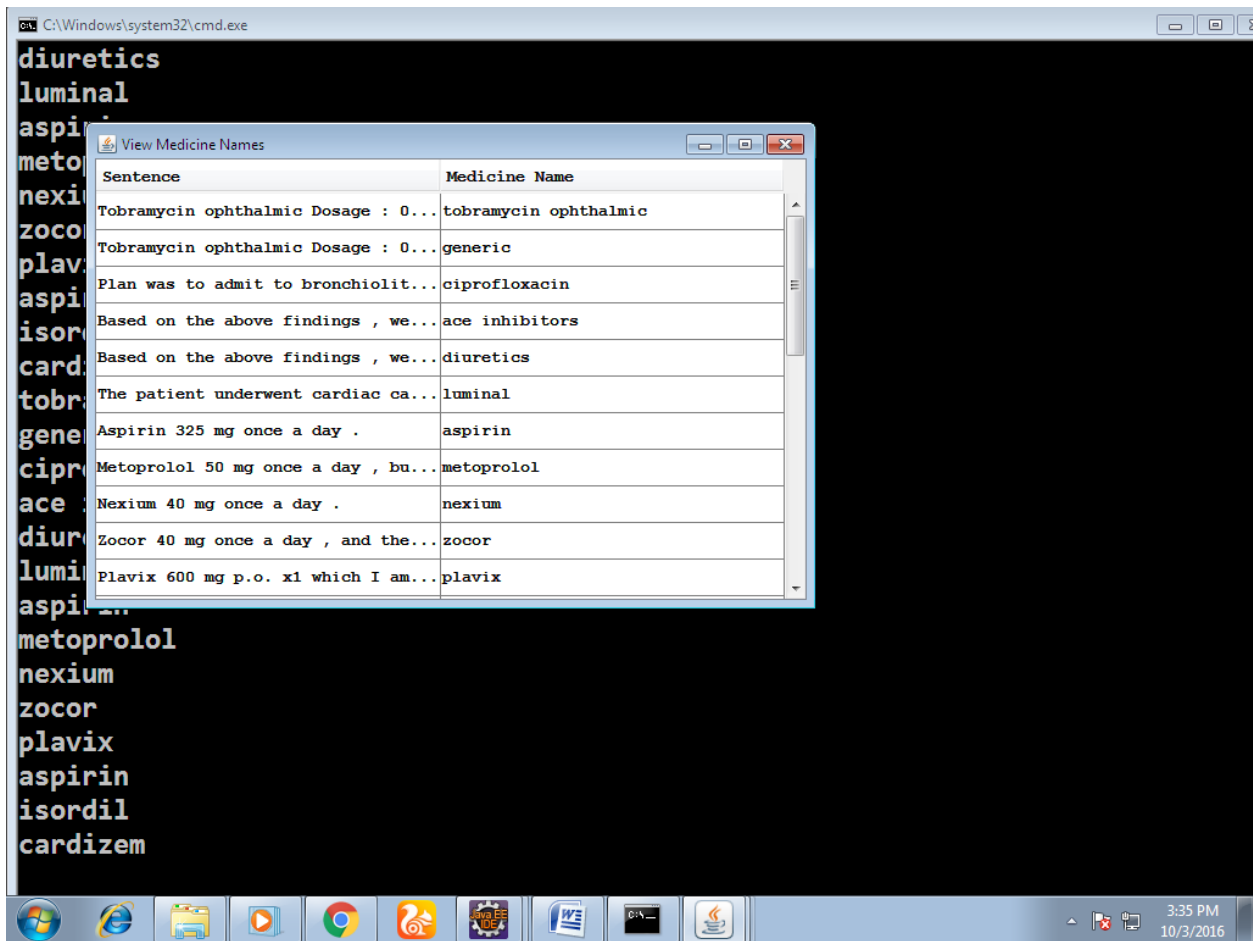
abnormal-echocardi...	After extensive discussion , given her age 86 , limited activity level , and no intention of undergoing any treatment in this regard from a surgical standpoint , the patient does not wish to proceed with a transesophageal echocardiogram .
abnormal-echocardi...	Based on the above findings , we will treat her medically with ACE inhibitors and diuretics and she has a normal LV function .
abnormal-echocardi...	She has a normal LV function .
abnormal-stress-tes...	The patient underwent cardiac catheterization with myself today which showed mild-to-moderate stenosis in the left anterior descending artery .
abnormal-stress-tes...	Aspirin 325 mg once a day .
abnormal-stress-tes...	Metoprolol 50 mg once a day , but we have had to hold it because of relative bradycardia which was treated with atropine .
abnormal-stress-tes...	Nexium 40 mg once a day .
abnormal-stress-tes...	Zocor 40 mg once a day , and there is a fasting lipid profile pending at the time of this dictation .
abnormal-stress-tes...	I see that his LDL was 136 on May 3 , 2002 .
abnormal-stress-tes...	Plavix 600 mg p.o. x1 which I am giving him tonight .

Click on that button to remove those two sentences from main table.

Now Click on 'Extract Medicines' button to get all medicines names. This process is little slow u need to wait for 2 mins to get all medicines. U can view processing of medicine in black console window

```
C:\Windows\system32\cmd.exe
. *.java
D:\server\New folder\Clinical Documents Clustering Based on MedicationSymptom
mes using Multi-View Nonnegative Matrix Factorization\clinical\clinical>java c
.Main
tobramycin ophthalmic
generic
ciprofloxacin
ace inhibitors
diuretics
luminal
aspirin
metoprolol
nexium
zocor
plavix
aspirin
isordil
cardizem
tobramycin ophthalmic
generic
ciprofloxacin
ace inhibitors
diuretics
```

U can see in above black window its started displaying names. Once it get all names then below screen will appear



In above screen u can see sentences and its extracted medicine names.

Now extract symptoms

**View Symptom Names**

Sentence	Symptoms
Patient given information on con...	conjunctivitis
Respiratory syncytial virus bron...	bronchiolitis
Plan was to admit to bronchiolit...	bronchiolitis
The patient admitted for gastroi...	gastrointestinal
The patient underwent cardiac ca...	coronary
The patient also has hypertensio...	hypertension
Patient given information on con...	conjunctivitis
Respiratory syncytial virus bron...	bronchiolitis
Plan was to admit to bronchiolit...	bronchiolitis
The patient admitted for gastroi...	gastrointestinal
The patient underwent cardiac ca...	coronary

**BASED ON SYMPTOMS**

conjunctivitis .

0.3 % ointment Sig : Apply to both eyes QID x 5 days Dispense

bronchiolitis with right otitis externa .

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esternal pathology , under working treatment .

an echocardiogram findings as above .

ventricular function with left atrial enlargement , large pleural eff

and supportive treatment .

an echocardiogram to assess valvular insufficiency adequately we

abnormal-echocardi... After extensive discussion , given her age 86 , limited activity level , and no intention of undergo

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abnormal-stress-tes... Zocor 40 mg once a day , and there is a fasting lipid profile pending at the time of this dictation .

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abnormal-stress-tes... Plavix 600 mg p.o. x1 which I am giving him tonight .

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10/3/2016

Now see word count and medicines and symptom count in chart



### EXATARING MEDICINE FOR DISEASE BASED ON SYMPTOMS

File Name	Sentence
1-year-old-exam-hp....	Patient given information on conjunctivitis .
abnormal-stress-tes...	Metoprolol 50 mg once a day , but we have had to hold it because of relative bradycardia which
abnormal-stress-tes...	Nexium 40 mg once a day .
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a eardrops tv  
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Accuracy Chart

Technique Name	Positive Reviews
Word Count	17
Medicines Count	28
Symptoms Count	12

Word Count Medicines Count Symptoms Count

Word Count Medicines Count Symptoms Count

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