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Adv NLP
Assignment2 Autofill
Dr.Hanaa Mobarez | TA Ibrahim Ali

Submitted: AdvNLPAss2_11422023490857_Ahmed.zip
Main Files: trigram.py , server.py (Flask), main.py (root), search_view.html, AutofillProject.pdf

Trigram Functions

- collect_corpus()

Corpus from different categories in nltk brown data (news, science fiction, hobbies, reviews, editorial) about 299K words

- prepare_text(text)

Preprocess remove any special characters, not remove stop words as it affects during suggestions like, "he will be the " without "the" in the sentence can't suggest suitable words

- create_ngram_model(text, n)

Use Counter and generate tuple of words with the predicted word according to n(3) Trigram

- calculate_probability()

According to formula wordFreq / contextFreq for each word

- predict_word()

Use calculate_probability function to get the highest n words according to probability that word get after the found two words, Suggest 6 words with descending order according to probability

- build_model()

To Test all stages in console before deploy with backend server and web page

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Using HTML/CSS/JS, Flask To test trigram model how to predict following word
Flask Functions:
index()
To render html page using render_templates

autocomplete()
To uses trigram functionality that already implemented in trigram file

Web Functions:
Search_view page has its functionality and design using inline css, javascript

Adding predicted word to the partial input sentence and generating maximum 6 predicted clickable sentences. It can be any number but I choose 6 to prove the functionality of the model.

Some Results:

Autofill Search

Trigram model

It is recommended that the

- It is recommended that the city
- It is recommended that the next
- It is recommended that the couple
- It is recommended that the republicans
- It is recommended that the bill
- It is recommended that the ballot

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Autofill Search

Trigram model

he will be the service

- he will be the service he
- he will be the service pfaff
- he will be the service academies
- he will be the service announced
- he will be the service indicated
- he will be the service has

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Autofill Search

Trigram model

It is recommended

- It is recommended that
- It is recommended it

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Autofill Search

Trigram model

He is the

- He is the apparent
- He is the norm
- He is the most
- He is the national
- He is the elected
- He is the highly

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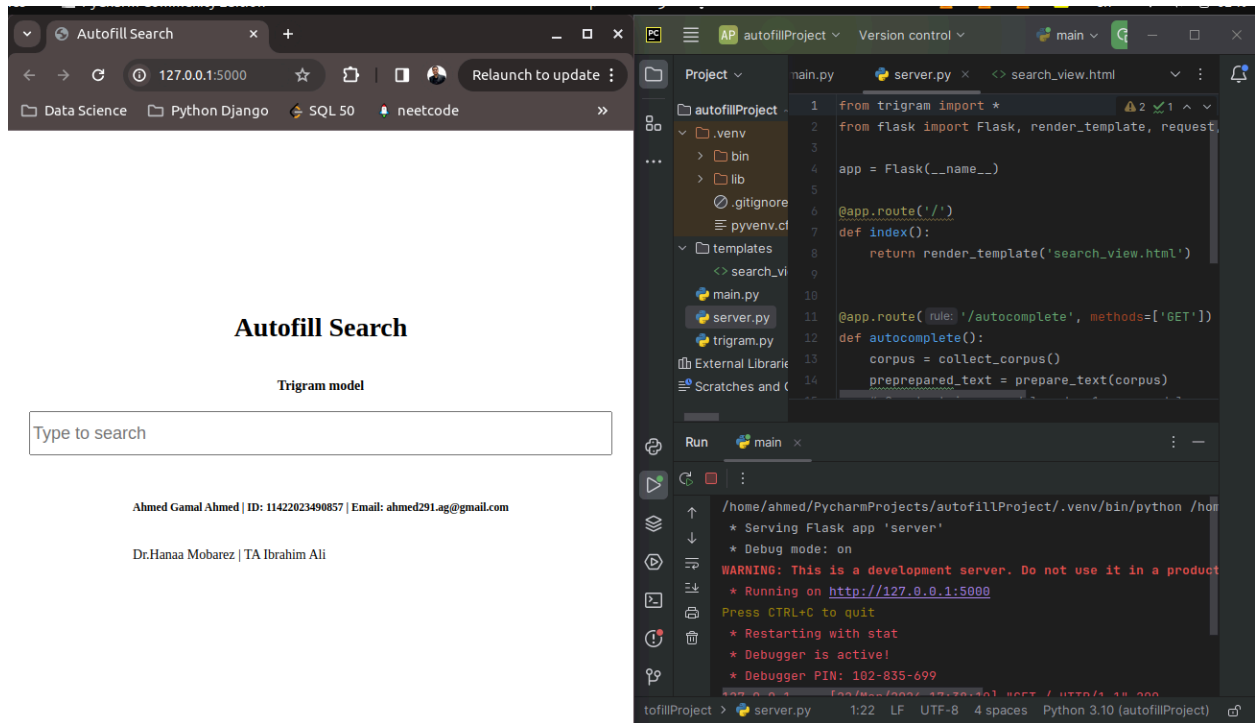
Autofill Search

Trigram model

He is the most

- He is the most serious
- He is the most positive
- He is the most populous
- He is the most impressive
- He is the most famous
- He is the most troublesome

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Autofill Search

Trigram model

Type to search

```
from trigram import *
from flask import Flask, render_template, request

app = Flask(__name__)

@app.route('/')
def index():
    return render_template('search_view.html')

@app.route( rule: '/autocomplete', methods=['GET'])
def autocomplete():
    corpus = collect_corpus()
    preprepared_text = prepare_text(corpus)
```

```
/home/ahmed/PycharmProjects/autofillProject/.venv/bin/python /hom
 * Serving Flask app 'server'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a product
 * Running on http://127.0.0.1:5000
Press CTRL+C to quit
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 102-835-699
```

Thank You!