

Project Name :

Course Booking

Doctor's advisors:

Dr. Ahmed Salem

Dr. Fahima El Maghraby

Project Team:

Name ID

Muath Hisham Ismail 19106673

Abdalkareem Mounir Assi 19106795

Abdelrahman Hany 19108297

Ahmed Ashraf 19104771

Karim Aly Ibrahim Elmoghazy 19106009

## ACKNOWLEDGEMENT

The path that led us to where we are today was not easy, but we got here eventually. We take this opportunity to thank Allah SWT for guiding and giving us the strength, as well as providing us with valuable resources, both people and information, that helped us complete this task in the way you will see.

## DECLARATION

We certify that this project that we are submitting for the Arab Academy for Science, Technology and Maritime Transport - College of Computing and Information Technology, is completely our own work that we went to extreme measures to complete at this level .

## ABSTRACT

Hot Course is a platform that helps users to access educational centers that are reliable and suitable for them without wasting their time and effort by searching for a suitable educational center for them and helps educational centers that have not gained their share of fame to reach users and offer their courses to them.

Table of Contents

1 Literature Review to Auto Summarization ..... 7

1.1 Introduction ..... 7

1.2 Types of Text Summarization ..... 8

1.2.1 Abstractive summarization ..... 8

1.2.2 Extractive summarization ..... 8

1.3 Comparison between NLTK and TextRank ..... 9

1.3.1 Advantage to NLTK ..... 9

1.3.2 Disadvantage to NLTK ..... 9

1.3.3 Advantage to TextRank ..... 10

1.3.4 Disadvantage to TextRank ..... 11

1.4 TextRank -Based Summarization ..... 11

1.5 Similarity function ..... 12

1.6 TextRank model ..... 12

1.7 Conclusion .....	14
2 Literature Review to course booking .....	15
2.1 Advantages: .....	16
2.2 Limitations: .....	16
3 Market and Business Analysis .....	17
1 SWOT .....	17
2 4Ps .....	17
3 Survey .....	18
4 SRS document .....	19
1 Introduction .....	19
1.1 Purpose .....	19
1.2 Intended Audience and Reading Suggestions .....	19
1.3 Intended Use .....	19
1.4 Project Scope .....	19
1.5 Definitions .....	20
2 System Description .....	20
2.1 Methodology .....	20
2.2 SYSTEM ANALYSIS & DESIGN .....	22

2.2.1 use case diagram .....	22
2.2.2 Sequence Diagram .....	
.	

A manual text summarization

process is arguably an effective way to preserve the meaning of text. [1]

The process of condensing a portion of a text into a shorter version, minimizing the size of the original text while retaining important informational aspects and substantive meaning, is called an abstract. An abstract is a reductive transformation of a source text into a summary

text by extraction. According to another definition, "Automatic summaries are coherent texts generated

by software that contain a substantial amount of relevant information from the source text.

This article explores the area of text summarization. Understand how the TextRank algorithm works and implement it in Python. Buckle up and this is going to be a fun ride. [3]

## 1.2 Types of Text Summarization

There is two main type of text summarization:

### 1.2.1 Abstractive summarization

The adjective 'abstractive' is used to denote a summary that is not a mere selection of a few existing passages or sentences extracted from the source, but a compressed paraphrasing of the main contents of the document, potentially using vocabulary unseen in the source document.

meaning of the passage and are often extracted but sentences later in the passage may also be extracted. Note that in the research community, text passages are often rewritten into

summaries by humans, so gold -annotated summaries are usually abstract in nature.

Abstractive Summary's supervised learning process is therefore straightforward because the goals are clearly defined. However, the sentence-by-sentence extract summarization may perform additional steps. [5]

Picking out sentences from the text that can best represent its summary.

2. Limited support for some languages: NLTK was developed primarily for working with English text, and while it does include support for other languages, this support may not be as extensive as for English. 3. Some features may be outdated: NLTK is an actively developed toolkit, but some of the algorithms and features included in the toolkit may be based on older research and may not be as up-to-date as more recent approaches. 4. May require more development time: Because NLTK is a general-purpose toolkit, you may need to spend more time developing and fine-tuning your natural language processing system compared to using a more specialized toolkit that is tailored to a specific task.

1.3.3 Advantage to TextRank

1.

1.3.4 Disadvantage to TextRank

1. It relies on the quality of the input data: TextRank works by building a graph of the relationships between words or phrases in the text. If the input data is of poor quality, such as being poorly written or having a lot of noise. 2. It can be computationally expensive: Building the graph of relationships

between words or phrases can be computationally intensive, especially for large datasets.

1.4 TextRank-Based Summarization

In the proposed method, the probability of moving from set A to set B is equal to the pairwise similarity of the sets.

Then, we connect between the similar sentence that is related to each other and removes the sentences that are not connected.

Next, we get the value of each sentence according to the number of edges outside it, each edge taking a value (number of sentences/1).

## 1.7 Conclusion

- TextRank models any document as an undirect graph using sentences as nodes.

anyone anyone Only experts

and

professional

instructors

Community

forum support supported Not supported supported

Course

summarization supported Not supported Not supported C h a p t e r T w o

## 2 Literature Review to course booking

E-learning has gotten better and better over time, and has brought about major changes in how we learn and who can achieve that learning. Advances in information technology (IT) have led to improvements in many areas, such as education. Education is growing rapidly, spurring the adoption of e-learning, which is a direct result of the integration of education and technology and is recognized as a powerful medium of learning (Al -Fraihat, Joy, & Sinclair, 2017 Year). In recent years, the application of e-learning for teaching and learning has increased significantly, especially after lockdowns.

### 2.1 Advantages:

- Courses are summarized
- courses are offered in both English and Arabic
- flexible learning schedule
- Courses can be bought individually
- Easy to enroll as an educational center
- Availability of different levels of content
- Students get instant, lifeti me access to the registered course

- Past courses' reviews and rating
- Posts on courses with latest updates and discussion forums

## 2.2 Limitations:

- There is a possibility that the course you searched for is not available
- There is a possibility that the cycle that was searched for will be repeated when more than one educational center

## Chapter three

### 3 Market and Business Analysis

#### 1 SWOT

##### SWOT

☐ We have

Facilities for

payment (cash,

credit card). ☐ Simple design.

#### 3 Survey

## Chapter four

### 4 SRS document

#### 1 Introduction

##### 1.1 Purpose

The program allows easy access to distinguished educational companies and the best courses at the best prices and discounts. Also, the user can summarize the large articles to make them smaller and easier to read to save his time and give him the same informational value.

##### 1.5 Definitions

- Can auto -summarize large books and articles .
- Educational companies can join our world and upload their own courses and publications, and students can access excellent educational companies quickly without effort or cost, and they can see the opinions of others about educational companies .
- Users who write negative comments that can be resolved by educational companies can make a report on the comment, and the necessary measures will be taken.

#### 2 System Description

##### 2.1 Methodology

In the proposed method, the probability of moving from set A to set B is equal to the pairwise similarity of the sets.

At first, combine the articles into a single text , then do the preparation and processing



of text to get rid of sentences that do not contain meaning , then in feature Ex.

## 2.2 SYSTEM ANALYSIS & DESIGN

### 2.2.1 use case diagram

### 2.2.2 Sequence Diagram

### 2.2.3 ERD Diagram

## 2.3 Assumptions and Dependencies

### 2.3.1 Assumptions:

- there is a company's have access to login to the system and make an account to add courses and posts is already added by them
- the (id) for the company and student are auto generated by the system
- the help and support have answers for the popular questions by the people

### 2.3.2 Dependencies:

- To login the user needs to create an account
- To view courses available the user has to log in.

## 2.4 Intended Technologies

Platform: flutter, Django

Tools: APIs, library summarizer from module summa

Languages: dart, python

## 3 System Requirements

### 3.1 Functional Requirements

- Users must be able to create their own accounts.

### 3.2 External Interface Requirements

#### 3.2.1 User Interfaces

We have three main users:

##### 3.2.1.1 Student

- login page: enter your email and password to log in, also you can click (forgot password) if you forget your password.
- create an account: enter your name, gender, city, country, email, password, phone number, and date of birth, and upload a profile picture, then click next to go to the major's page.
- major's page: choose your favorite fields, then click (next) to go to the home page.

and the rate of the course, then click (book) to choose the payment method.

- help page: in this page, we answer the most popular question, if the student has any other problem or question then he has to click the (contact us) button to fill the form and click (submit).
- student profile: in this page, the student can represent his profile picture, all his data, and all educational centers he follows, he can click to (edit) if he wants to edit any personal information.

## 2 educational center

- login page: enter your email and password to log in, also you can click (forgot password) if you forget your password.

- setting: in this page, he can answer to all reports, and answer to help requests.
- accept page: in this page, he approves or rejects the new educational centers and the new courses.
- home page: in this page, he shows all posts and courses from the

educational centers.

#### 3.3.1.2 Stimulus/Response Sequences

- He can see the old summaries he has summarized
- You can clear an old summary from history

#### 3.3.1.3 Functional Requirements

- Users should be able to summarize large books and articles.
- Users should be able to download files after automatic summaries.

#### 3.3.2.4 Other system features include:

major : choose your favorite fields

locations : choose all locations

### 3.4 Nonfunctional requirements

#### Performance

☐ Ensure that System features are highly responsive in a very short time so that the system works under high efficiency with an average time (3 seconds)

☐ the system and database can handle pdf files

☐ database able to meet the requirements of continuous data growth continuously to ensure fast response of data presentation

#### Safety and secure

☐ If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage

☐ user cannot use previously used password as new one

☐ the system never save the payment methods information such as credit or debit cards

☐ the system will always backup itself for easy restoration and data protection

Quality ☐ the system should auto -summarize the i nput in an understandable way that includes all important points that were originally mentioned in the original text.

#### 4 References

[1] A. A. L. K. N. S. C. D. M. H. M. K. M. F. MRIDHA, "A Survey of Automatic TextSummarization: Progress, Process andChallenges," researchgate, p. 29, 2021. [2] J. D. A. K. Y. Divakar Yadav, Automatic Text Summarization Methods: A Comprehensive Review, 2020. [3] P. Joshi, "An Introduction to Text Summarization using the TextRank Algorithm (with Python implementation)," 2022. [Online].