

FEECO - NEXT GEN FEEDBACK COLLECTION PORTAL

SWATI KANCHAN

ROLL - 15/CS/95

PROJECT GUIDE - DR. DEBASIS MITRA

**DEPT. OF COMPUTER SCIENCE AND ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, DURGAPUR**



ABSTRACT

- FEEDBACKS PROVIDE VALUABLE INFORMATION THAT WILL BE USED TO MAKE IMPORTANT DECISIONS FOR THE FUTURE.
- THE FEEDBACK FORM IS USED FOR ANY TYPE OF USER, CLIENTS, CUSTOMER TO RATE AN EVENT AND PROVIDE FEEDBACK BY USING THIS FORM.
- THIS IS A PROJECT IN WHICH A HASSLE-FREE PLATFORM IS CREATED FOR GENERATING FEEDBACK FORMS AND SENDING THOSE FORM LINKS TO PEOPLE ALONG WITH A ONE-TIME-PASSWORD (OTP) VIA MAILS. THE FORM RECEIVERS CAN THEN FILL THOSE FORMS BY CLICKING ON THE LINK PROVIDED AND USING THE OTP.
- AN AUTOMATIC FEATURE IS ADDED WHICH SUMMARIZES THE FEEDBACK COMMENTS (WHICH IS IN THE FORM OF TEXT) FOR THE FEEDBACK CREATOR.

LITERATURE REVIEW

- **SURVEYMONKEY** IS AN ONLINE SURVEY DEVELOPMENT CLOUD-BASED SOFTWARE AS A SERVICE COMPANY.
 - THE BASIC VERSION OF SURVEYMONKEY IS FREE;
 - CREATE AND SEND A SURVEY WITH **UP TO 10 QUESTIONS OR ELEMENTS**
 - **VIEW UP TO 100 RESPONSES PER SURVEY**
 - AN ENHANCED VERSION IS ALSO AVAILABLE AT A COST.
 - IT OFFERS A FREE ACCOUNT (BASIC PLAN) AND THREE PAID OPTIONS.
- **LIMESURVEY** IS A FREE AND OPEN SOURCE ONLINE STATISTICAL SURVEY WEB APP WRITTEN IN PHP
 - IT HAS ITS LIMITATIONS **WHEN IT COMES TO SOME COMPLEX QUESTION TYPES**, AS IT HAS ITS OWN SET OF DEFAULT QUESTIONS.

SOFTWARE REQUIREMENTS

- SYSTEM REQUIREMENTS:

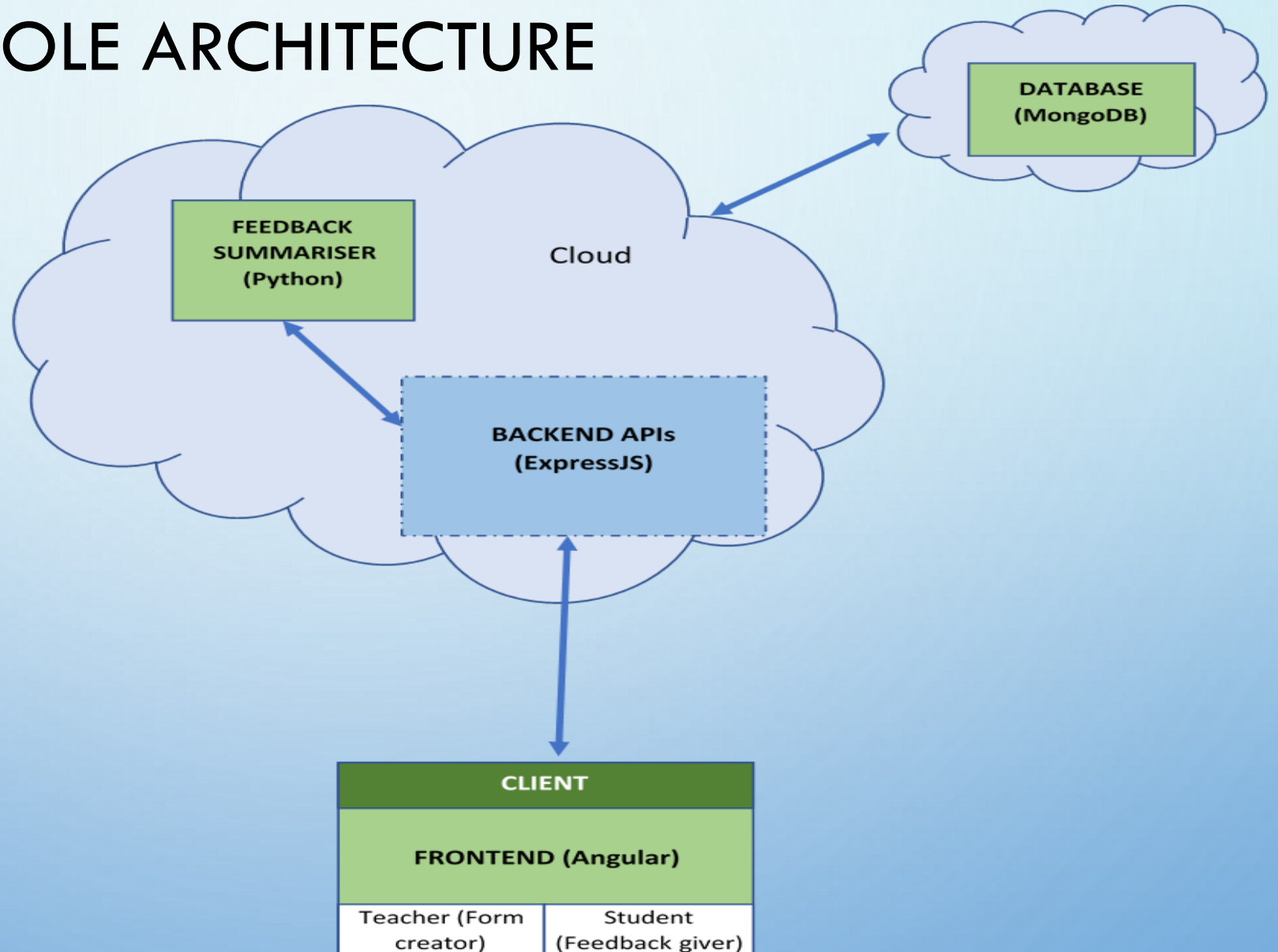
SERVER INSTALLED WITH NODEJS: THIS APPLICATION'S BACKEND WEBSITE NEEDS TO BE DEPLOYED ON A SERVER WHICH NEEDS TO BE INSTALLED WITH NODEJS FROM WHERE ALL THE APIS WOULD BE ACCESSIBLE FOR THE END-USERS COMPUTER OR MOBILE.

- TECHNOLOGY STACK:

- NODEJS V10.9.0 [4]
- EXPRESSJS ^4.16.4 [5]
- ANGULAR V6.1.3 [6]
- MONGODB V4.0.5 [7]
- MONGOOSEJS ^5.4.12 [8]
- SUMY [9]
- PYTHON 3 [10]

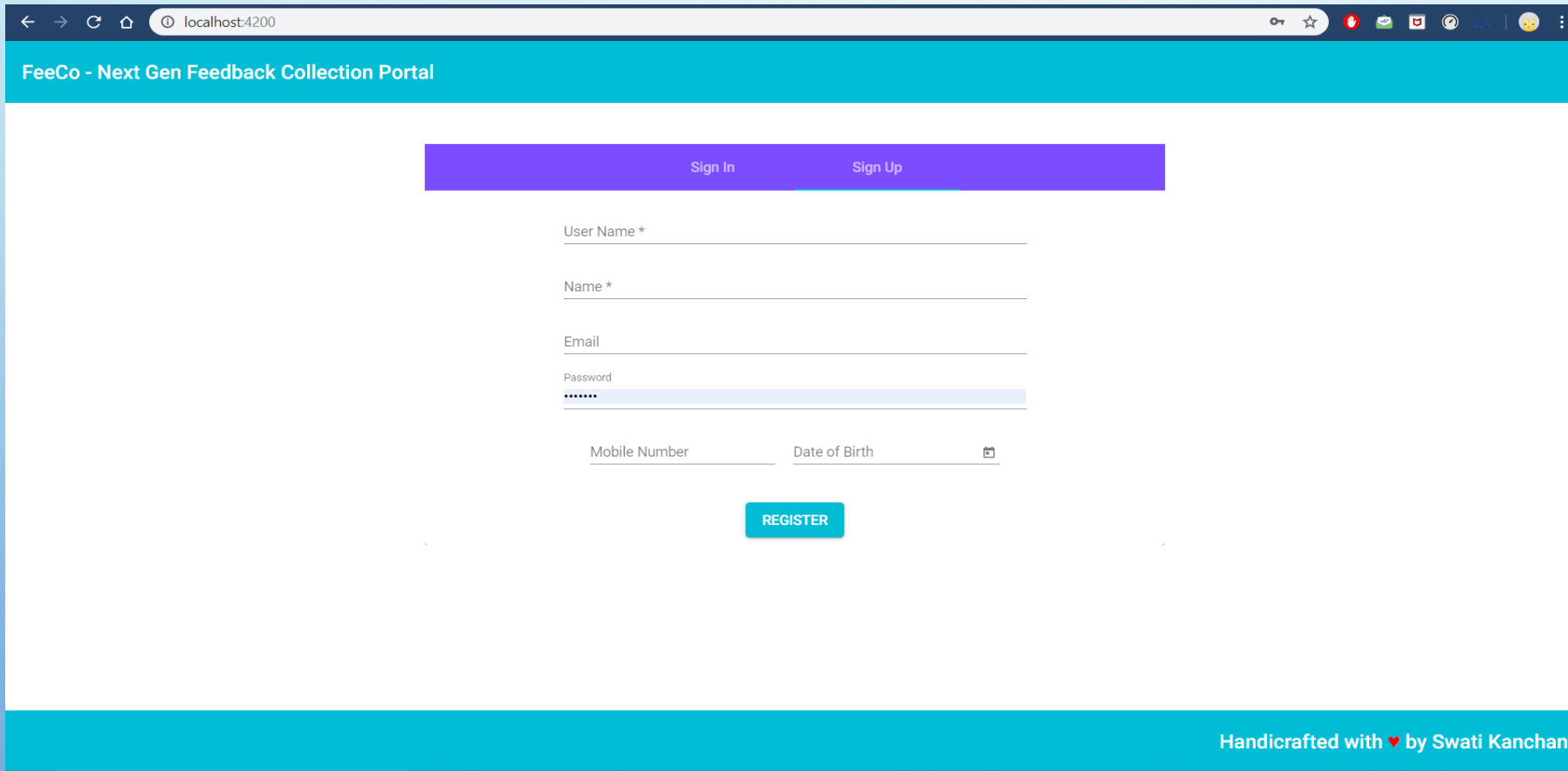
WHOLE ARCHITECTURE

The whole architecture of this project have 2 servers installed in the cloud, one for the backend APIs and feedback summarizer, and another for the MongoDB database. The client or the frontend can then be accessed through the hosted website's domain name or IP address.



DEMONSTRATION

Step 1: Register as a new user with the following details.



The screenshot shows a web browser window with the address bar displaying 'localhost:4200'. The page title is 'FeeCo - Next Gen Feedback Collection Portal'. The main content area features a registration form with a purple header bar containing 'Sign In' and 'Sign Up' links. The form fields are: 'User Name *', 'Name *', 'Email', 'Password' (masked with dots), 'Mobile Number', and 'Date of Birth' (with a calendar icon). A teal 'REGISTER' button is positioned below the form. The footer is a teal bar with the text 'Handicrafted with ❤️ by Swati Kanchan'.

localhost:4200

FeeCo - Next Gen Feedback Collection Portal

Sign In Sign Up

User Name *

Name *

Email

Password

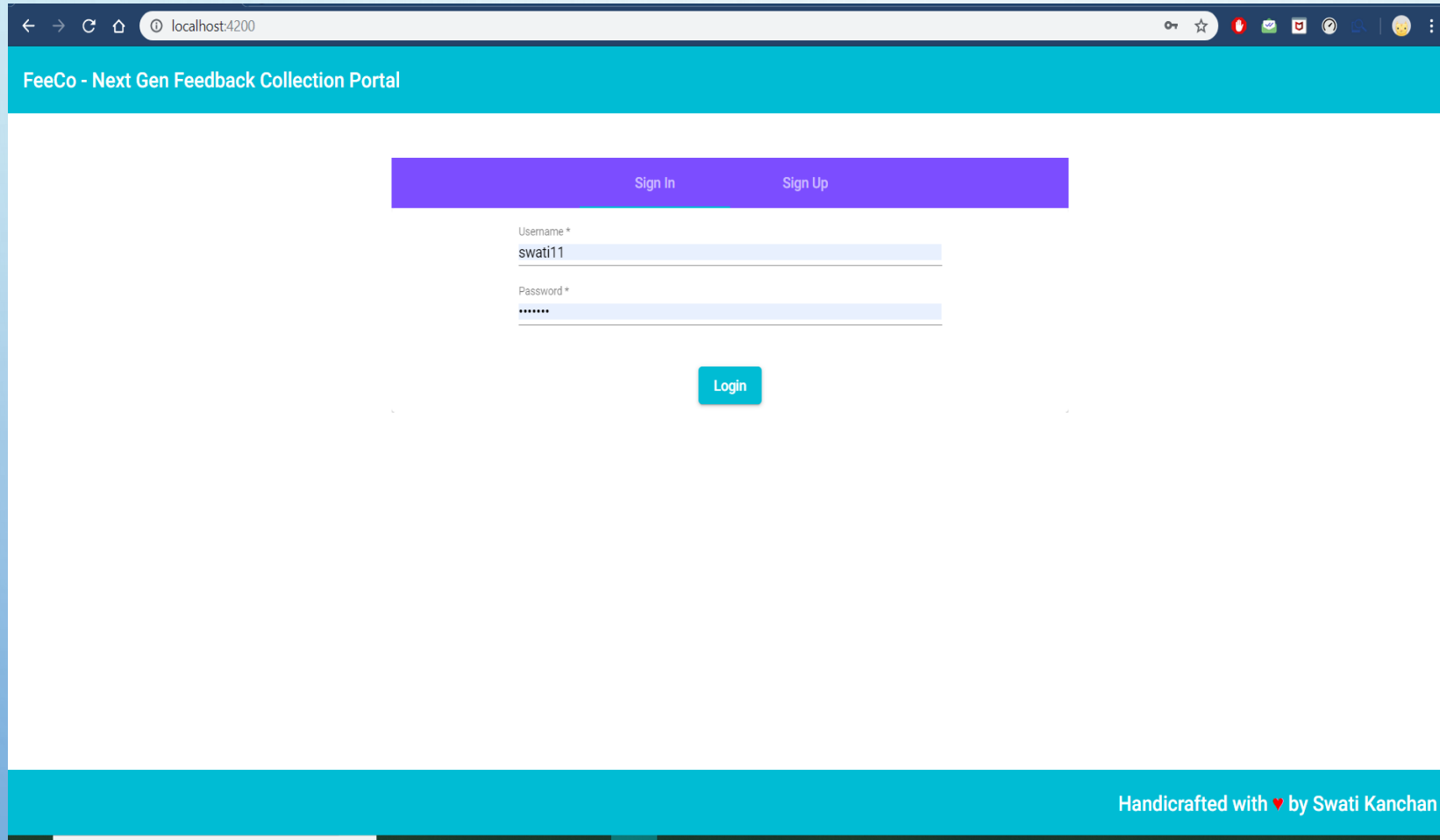
Mobile Number Date of Birth

REGISTER

Handicrafted with ❤️ by Swati Kanchan

DEMONSTRATION (..CONTINUED)

Step 2: Sign-up with the username and password you had set while registering



The screenshot shows a web browser window with the address bar displaying 'localhost:4200'. The page title is 'FeeCo - Next Gen Feedback Collection Portal'. The main content area features a purple header bar with 'Sign In' and 'Sign Up' buttons. Below this, there are two input fields: 'Username *' with the value 'swati11' and 'Password *' with masked characters '*****'. A teal 'Login' button is positioned below the password field. The footer of the page contains the text 'Handcrafted with ❤ by Swati Kanchan'.

FeeCo - Next Gen Feedback Collection Portal

Sign In Sign Up

Username *
swati11

Password *

Login

Handcrafted with ❤ by Swati Kanchan

DEMONSTRATION (..CONTINUED)

Step 3: This is the user Dashboard to view, edit, activate/deactivate or delete a form.

The screenshot displays the 'FeeCo - Next Gen Feedback Collection Portal' user dashboard. The interface includes a header with navigation links 'Home' and 'Signout'. The main content area lists 5 feedback forms, each with a 'Feedbacks' button, an 'Edit' button, a 'Delete' button, and an 'Activate/Deactivate' toggle switch. The following table summarizes the data shown in the dashboard:

Form ID	Form Name	Feedbacks Button	Edit Button	Delete Button	Activate/Deactivate Toggle
1	Feedback 1	Feedbacks	Edit	Delete	On
2	Form 2	Feedbacks	Edit	Delete	On
3	Student's feedback	Feedbacks	Edit	Delete	Off
4	B.Tech feedback	Feedbacks	Edit	Delete	Off
5	Form 3	Feedbacks	Edit	Delete	On

Annotations on the screenshot include:

- Create New button**: Points to the 'Create New +' button in the top left.
- Copy From Existing button**: Points to the 'Copy From Existing' button in the top right.
- Feedbacks button**: Points to the 'Feedbacks' button for the first form.
- Edit button**: Points to the 'Edit' button for the second form.
- Delete button**: Points to the 'Delete' button for the fourth form.
- Activate/Deactivate button**: Points to the 'Activate/Deactivate' toggle switch for the third form.
- Names of forms created by the current user**: Points to the list of form names in the first column.

Handicrafted with ♥ by Swati Kanchan

DEMONSTRATION (..CONTINUED)

Step 4: User can create new forms either a) by clicking on “Create New” or b) by clicking on “Copy From Existing” button.

The image consists of two side-by-side screenshots of a web application interface, demonstrating the process of creating a new form.

Left Screenshot: A modal dialog titled "Enter The Title of form" is displayed. It contains a text input field with the placeholder "Enter your form title here." and a checkbox labeled "Collect data Anonymously" which is checked. At the bottom right of the modal are "Close" and "Save" buttons. The background shows a list of existing forms with "Feedbacks", "Edit", and "Delete" buttons.

Right Screenshot: A similar modal dialog titled "Enter The Title of form" is shown. The text input field contains "My copied form". Below the input field is a checkbox "Collect data Anonymously" (unchecked) and a list of radio buttons for selecting a template: "Feedback 1" (selected), "Form 2", "Student's feedback", "B.Tech feedback", and "Form 3". "Close" and "Save" buttons are at the bottom right. The background shows the same list of forms.

DEMONSTRATION (..CONTINUED)

Step 5: Click on “Edit” button to edit it

The screenshot displays the 'FeeCo - Next Gen Feedback Collection Portal' interface. The header includes navigation links for 'Home' and 'Signout'. The main content area lists five feedback forms, each with a set of action buttons. The 'Create New' button is highlighted with a yellow circle. The 'Copy From Existing' button is also highlighted with a yellow circle. The 'Feedbacks' button for the first form is highlighted with a yellow circle. The 'Edit' button for the second form is highlighted with a yellow circle. The 'Delete' button for the fourth form is highlighted with a yellow circle. The 'Activate/Deactivate' button for the second form is highlighted with a yellow circle. The 'Names of forms created by the current user' are listed in a yellow oval: 'Feedback 1', 'Form 2', 'Student's feedback', 'B.Tech feedback', and 'Form 3'.

Form ID	Form Name	Feedbacks	Edit	Delete	Activate/Deactivate
1	Feedback 1	Feedbacks	Edit	Delete	On
2	Form 2	Feedbacks	Edit	Delete	On
3	Student's feedback	Feedbacks	Edit	Delete	Off
4	B.Tech feedback	Feedbacks	Edit	Delete	Off
5	Form 3	Feedbacks	Edit	Delete	On

Names of forms created by the current user

Handicrafted with ❤ by Swati Kanchan

DEMONSTRATION (..CONTINUED)

Step 7: Add questions. Finally Click on “Save” button to save the changes. To make more changes click on “Form Settings” button

The screenshot displays a web application interface for 'FeeCo - Next Gen Feedback Collection Portal'. The browser address bar shows 'localhost:4200/form/5cceb178b4b2d31d24407497'. The interface features a teal header with the title and 'Home' and 'Signout' buttons. Below this is a cyan bar with 'Student's feedback' and 'Add Question', 'Save', and 'Form Settings' buttons. The main content area contains a table of sample questions:

Question	Text: Sample Text Question?	▼
Question	Multi Select: Sample Multi Select Question?	▼
Question	Single Select: Sample Single Select Question?	▼
Question	Number Rating: Sample Number Rating Question?	▼
Question	Number: Sample Number Question?	▼
Question	Text: Sample Text Question?	▼
Question	Multi Select: Sample Multi Select Question?	▼
Question	Single Select: Sample Single Select Question?	▼
Question	Number Rating: Sample Number Rating Question?	▼
Question	Number: Sample Number Question?	▼

At the bottom of the table area is an 'Add Question' button. The footer is teal and contains the text 'Handcrafted with ❤ by Swati Kanchan'.

DEMONSTRATION (..CONTINUED)

**Step 8: Enable/Disable the form, get the form link, send emails with form links.
Also see if the form collects responses anonymously or not.**

The screenshot displays the 'FeeCo - Next Gen Feedback Collection Portal' interface. The browser address bar shows 'localhost:4200/form_settings/5cceb193b4b2d31d244074b2'. The page has a teal header with 'Home' and 'Signout' buttons. A yellow callout box highlights the 'Status of form's Anonymous Form Collection flag' with the text 'This form collect reponses unanonymously'. Below this, the 'Activate/Deactivate form collection' section features a blue toggle switch. The 'Link of the form hosted' section shows the URL 'http://localhost:4200/response/5cceb193b4b2d31d244074b2'. The 'Form link has been sent to the below emails' section lists three email addresses: 'email1@xyz.cu', 'email2@abc.cu', and 'email3@xyz.cu', with a note that 'Form link with unique OTPs is already sent to these email IDS'. The 'Send form link' section includes a text input field with a placeholder 'Enter the email addresses seperated by semi-colon ','' and a 'Send' button. The footer states 'Handicrafted with ❤ by Swati Kanchan'.

localhost:4200/form_settings/5cceb193b4b2d31d244074b2

FeeCo - Next Gen Feedback Collection Portal

Home Signout

This form collect reponses unanonymously

Status of form's Anonymous Form Collection flag

Activate/Deactivate form collection

Link of the form is <http://localhost:4200/response/5cceb193b4b2d31d244074b2>

Link of the form hosted

Form link has been sent to the below emails

email1@xyz.cu

email2@abc.cu

email3@xyz.cu

Form link with unique OTPs is already sent to these email IDS

Send form link

Enter the email addresses seperated by semi-colon ','

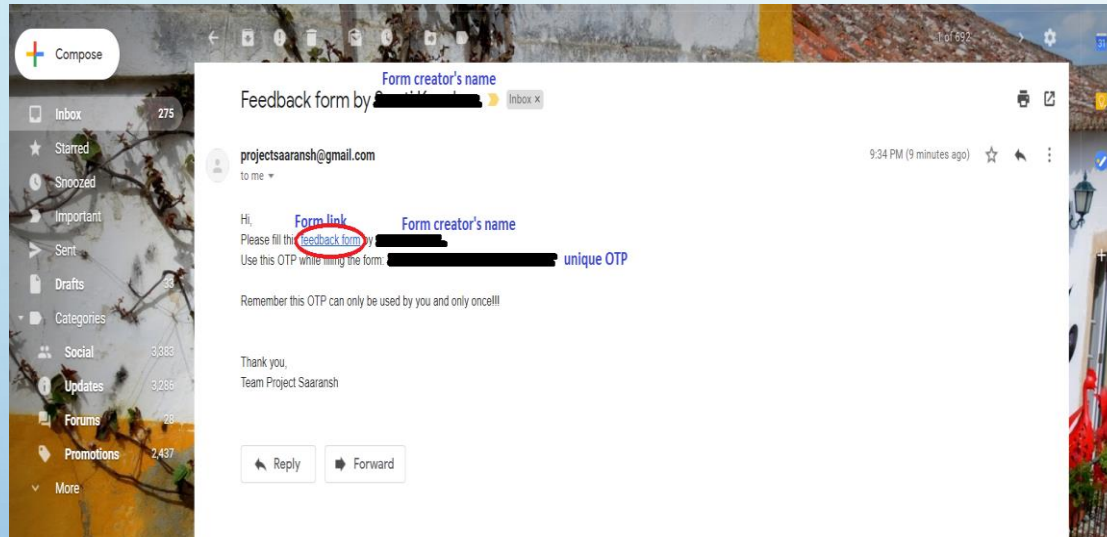
Enter the email IDS here to whom the form link needs to be sent

Send

Handicrafted with ❤ by Swati Kanchan

DEMONSTRATION (..CONTINUED)

Step 9: Emails are received in this way, with a form link, form-creator's name and a unique OTP. Click on the form link



Step 10: Enter the OTP sent in the mail to get access of the form and fill.

OTP verification

[Enter the OTP to submit the feedback](#)

251065a2629494eebc9df0a3b504cbd0

Submit

DEMONSTRATION (..CONTINUED)

Step 11: Fill the form

The screenshot shows a web browser window with the address bar displaying 'localhost:4200/response/5cceb193b4b2d31d244074b2'. The browser's title bar and address bar are visible. The page content is a form titled 'Form 3' in a blue header. The form contains five question types, each in a white box with a light gray border:

- Sample Text Question?**
Enter Answer
- Sample Multi Select Question?**
 - ☐ Option 1
 - ☐ Option 2
 - ☐ Option 3
- Sample Single Select Question?**
select your choice
- Sample Number Rating Question?**
A horizontal slider with a black dot at the start.
- Sample Number Question?**

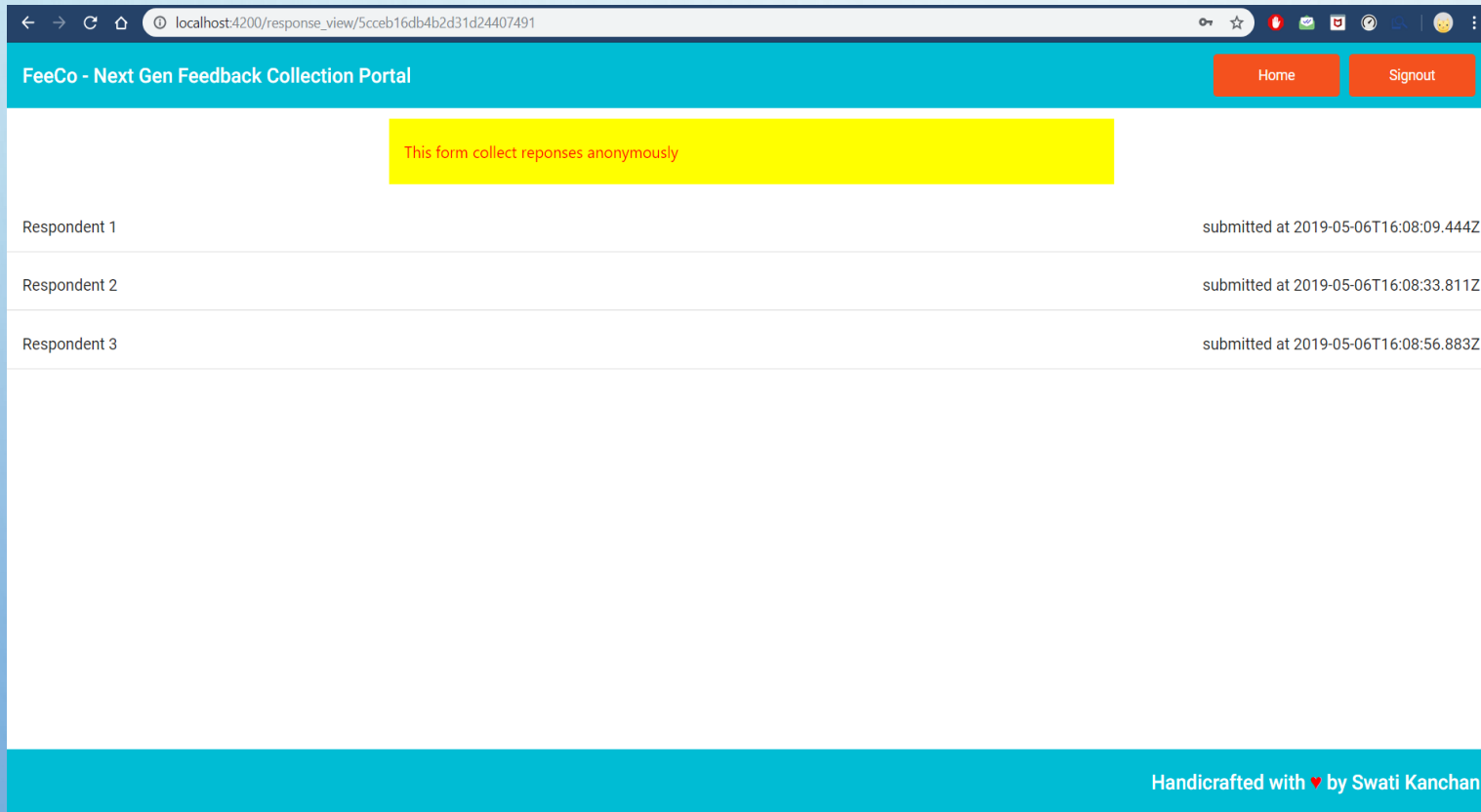
DEMONSTRATION (..CONTINUED)

Step 12: View the responses by clicking on “Feedbacks” button of form on the Dashboard.

Non-anonymously -> respondents’ email IDs

Anonymously -> just the term “Respondent #”

Click on a respondent to view their response.



The screenshot shows a web browser window with the URL `localhost:4200/response_view/5cceb16db4b2d31d24407491`. The page title is "FeeCo - Next Gen Feedback Collection Portal". There are two buttons in the top right: "Home" and "Signout". A yellow banner at the top states "This form collect reponses anonymously". Below this is a table with three rows of feedback data.

Respondent 1	submitted at 2019-05-06T16:08:09.444Z
Respondent 2	submitted at 2019-05-06T16:08:33.811Z
Respondent 3	submitted at 2019-05-06T16:08:56.883Z

At the bottom right, it says "Handicrafted with ❤ by Swati Kanchan".

DEMONSTRATION (..CONTINUED)

Step 13: View the response of the respondent. Each question is mapped with its answer given.

localhost:4200/response_view/response/5cd05be909bf022744301e2b

FeeCo - Next Gen Feedback Collection Portal

Home Signout

This form collect reponses anonymously

Question: Sample Text Question?
Answer: apple

Question: Sample Multi Select Question?
Answer: 0

Question: Sample Single Select Question?
Answer: Option 3

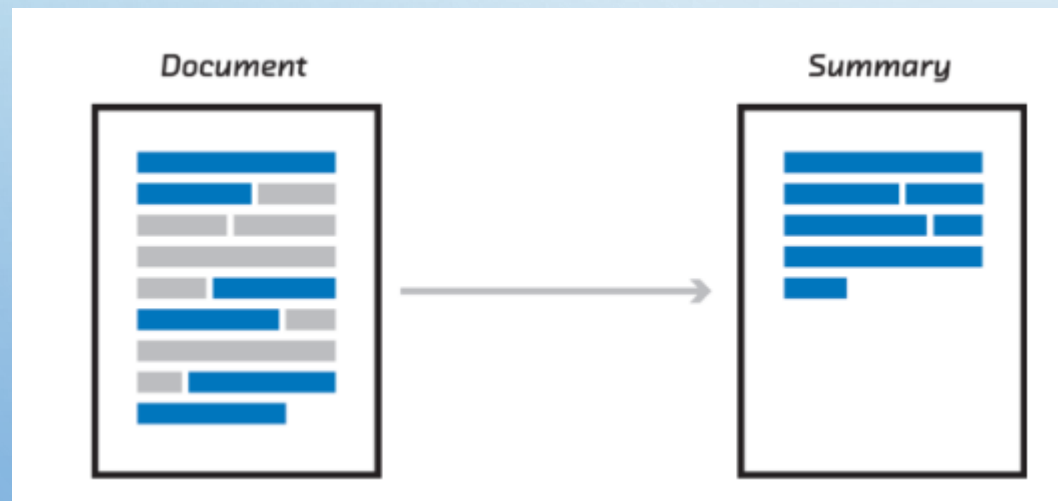
Question: Sample Number Rating Question?
Answer: 3

Question: Sample Number Question?
Answer: 12

Handicrafted with ❤ by Swati Kanchan

TEXT SUMMARIZER IMPLEMENTATION

WE HAVE USED EXTRACTIVE TEXT SUMMARIZATION TECHNIQUES WITH **SUMY** WHICH PERFORM SUMMARIZATION BY PICKING PORTIONS OF TEXTS AND CONSTRUCTING A SUMMARY.



SUMY

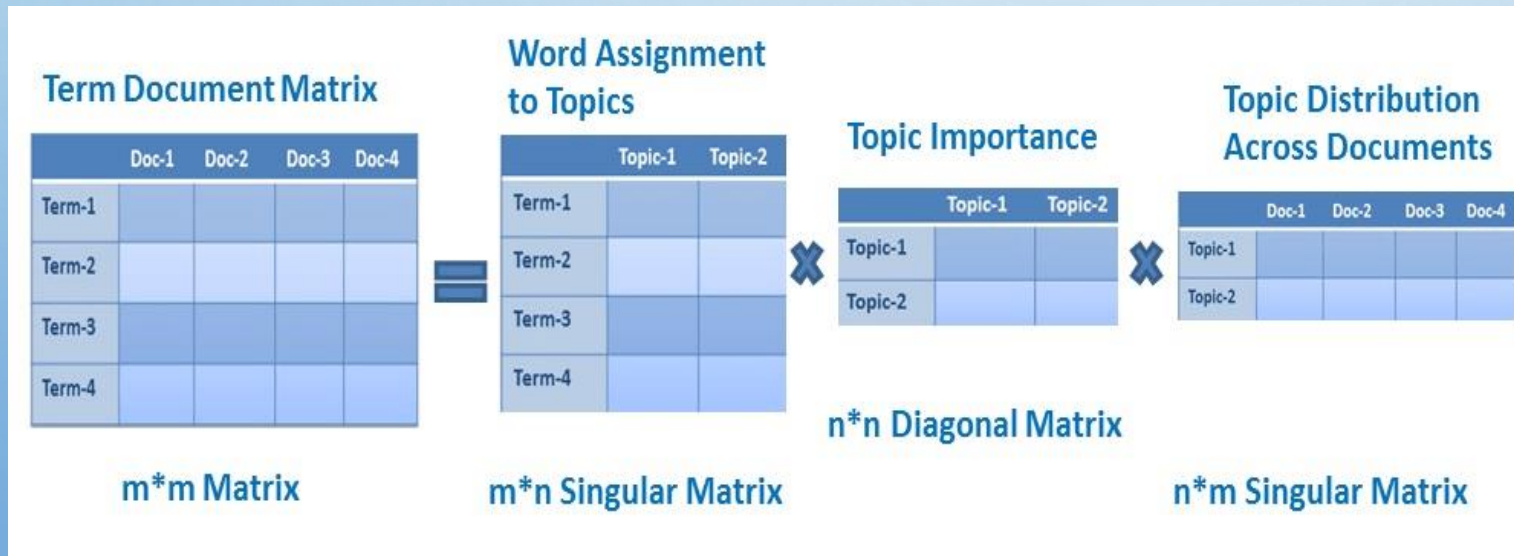
- SIMPLE LIBRARY AND COMMAND LINE UTILITY FOR EXTRACTING SUMMARY FROM HTML PAGES OR PLAIN TEXTS.
- CONTAINS VARIOUS IMPLEMENTATIONS SUCH AS LUHN, TEXT RANK, LEX RANK, LSA, ETC.
- THE GITHUB LINK: [SUMY](#)
- THE SUMMARIZATION TECHNIQUE WE HAVE USED IS **LATENT SEMANTIC ANALYSIS (LSA)**.

LATENT SEMANTIC ANALYSIS

- UNSUPERVISED METHOD OF SUMMARIZATION
- COMBINES TERM FREQUENCY TECHNIQUES WITH SINGULAR VALUE DECOMPOSITION TO SUMMARIZE TEXTS
- ALSO KNOWN AS LSI (LATENT SEMANTIC INDEX) LSA USES BAG OF WORD (BOW) MODEL, WHICH RESULTS IN A TERM-DOCUMENT MATRIX (OCCURRENCE OF TERMS IN A DOCUMENT)

LATENT SEMANTIC ANALYSIS (CONTINUED...)

- **BAG OF WORDS MODEL (BOW)**
- ROWS REPRESENT TERMS AND COLUMNS REPRESENT DOCUMENTS.
- LSA LEARNS LATENT TOPICS BY PERFORMING A MATRIX DECOMPOSITION ON THE DOCUMENT-TERM MATRIX USING SINGULAR VALUE DECOMPOSITION.
- TYPICALLY USED AS A DIMENSION REDUCTION OR NOISE REDUCING TECHNIQUE.



LATENT SEMANTIC ANALYSIS (CONTINUED...)

- SUPPOSE THE **INPUT** DOCUMENT
CONTAINS THE FOLLOWING TEXT:

LATENT SEMANTIC ANALYSIS (CONTINUED...)

"I THINK IT WOULD HAVE BEEN MORE ENGAGING IF MORE BOARD WORK WAS INVOLVED LIKE DATA STRUCTURES CLASS. ALSO THE ABSENCE OF STRESS ON ATTENDANCE AND AVAILABILITY OF SLIDES LED TO STUDENTS FEELING LIKE THEY COULD DO WITHOUT ATTENDING THE CLASSES. THE ASSIGNMENTS WERE NOT DISCUSSED LATER FOR THOSE WHO WERE UNABLE TO DO IT ON THEIR OWN. **GREAT LEARNING ABOUT VLSI, ESPECIALLY TO KNOW WHERE IT IS APPLICABLE IN COMPUTER SCIENCE.** ALTHOUGH THE COURSE, AS WELL AS THE INSTRUCTORS, WERE QUITE GOOD, THE PROBLEM WAS STUDENTS NOT ATTENDING CLASSES(INCLUDING ME). I MISSED FEW CLASSES IN BETWEEN AS A RESULT OF WHICH I COULDN'T CATCH UP WITH TOPICS. I'VE A DEEP REGRET THAT I COULDN'T LEARN HARDWARE TOPICS WELL [INCLUDING COMPUTER ARCHITECTURE IN 4TH SEM(FEW TOPICS WERE SKIPPED BECAUSE OF LACK OF TIME AS STUDENTS WERE BUSY IN RECS AND OTHER STUPID STUFFS), DIGITAL ELECTRONICS(TAUGHT BY ECE DEPT - ONLY THINGS WE WERE TAUGHT WERE NUMBER SYSTEM CONVERSION, BOOLEAN EXPRESSION, K-MAP, ETC SKIPPING IMPORTANT TOPICS LIKE FLIP-FLOP. I STILL HAVE VERY LESS IDEA ABOUT FLIP-FLOPS)] I'VE GOT A BIG REGRET THAT I DIDN'T STUDY THOSE TOPICS WELL(MANY OTHER TOPICS AS WELL) PROFESSORS/TEACHERS ARE DOING GOOD. THE PROBLEM IS LACK OF SERIOUSNESS IN STUDENTS AND CONFIDENCE IN THE FACT THAT THEY CAN PASS THE EXAM IN ONE NIGHT. DM SIR HAS ALWAYS BEEN THE PERFECT AND MOST KNOWLEDGEABLE INSTRUCTOR AND PROFESSOR. HE ALWAYS INSTILLS THE REQUIRED INFORMATION ABOUT THE TOPIC. I FEEL PRIVILEGED TO BE ABLE TO ATTEND HIS CLASSES. EXTREMELY ENJOYED THE COURSE. **I HAD ALWAYS BEEN UNDER THE IMPRESSION THAT VLSI IS A CORE HARDWARE SUBJECT AND HAS GOT NOTHING TO DO WITH SOFTWARE RELATED STUFF.** I WAS REALLY AMAZED TO SEE HOW PROBLEMS FROM HARDWARE DOMAIN IS MAPPED TO SOFTWARE/COMPUTING DOMAIN AND SOLVED. LEARNED A LOT OF THINGS FROM THIS CLASS. **HERE ARE A FEW THINGS WHICH I FELT DURING THIS COURSE: I FEEL THE COURSE WOULD HAVE BEEN BETTER IF THE INSTRUCTOR WOULD HAVE NOT USED SLIDES AND HAD WRITTEN POINTS ON BOARD.** BEING A LAZY STUDENT MYSELF, SLIDES TEND TO MAKE ME MORE LAZY. IT GIVES A FEELING THAT 'OH EVERYTHING IS THERE IN SLIDES, I CAN ALWAYS GO TO HOSTEL ROOM AND STUDY' AND THIS SOMETIMES MAKES MY BRAIN LAZY DURING THE CLASS WHICH SHOULD NOT BE THE CASE. **TWO ASSIGNMENTS WERE GIVEN DURING THE COURSE TO BE SOLVED BY STUDENTS WHICH ARE REALLY FUN AND INTERESTING.** WOULD BE NICE IF SOME MORE PROJECTS (OR SIMULATIONS) WERE GIVEN TO GET OUR HANDS A BIT MORE DIRTY. OVERALL THE COURSE WAS EXCELLENT."

LATENT SEMANTIC ANALYSIS (CONTINUED...)

- THE **OUTPUT** OF THE SUMMARISER WAS:

“GREAT LEARNING ABOUT VLSI, ESPECIALLY TO KNOW WHERE IT IS APPLICABLE IN COMPUTER SCIENCE.

I HAD ALWAYS BEEN UNDER THE IMPRESSION THAT VLSI IS A CORE HARDWARE SUBJECT AND HAS GOT NOTHING TO DO WITH SOFTWARE RELATED STUFF.

HERE ARE A FEW THINGS WHICH I FELT DURING THIS COURSE: I FEEL THE COURSE WOULD HAVE BEEN BETTER IF THE INSTRUCTOR WOULD HAVE NOT USED SLIDES AND HAD WRITTEN POINTS ON BOARD.

IT GIVES A FEELING THAT 'OH EVERYTHING IS THERE IN SLIDES, I CAN ALWAYS GO TO HOSTEL ROOM AND STUDY' AND THIS SOMETIMES MAKES MY BRAIN LAZY DURING THE CLASS WHICH SHOULD NOT BE THE CASE.

TWO ASSIGNMENTS WERE GIVEN DURING THE COURSE TO BE SOLVED BY STUDENTS WHICH ARE REALLY FUN AND INTERESTING.”

SUMMARY OUTPUT IN SPYDER CONSOLE

```
In [6]: from sumy.summarizers.lsa import LsaSummarizer
...: summarizer_2 = LsaSummarizer()
...: summary_2 = summarizer_2(parser.document,5)
...: for sentence in summary_2:
...:     print(sentence)
```

Great learning about VLSI, especially to know where it is applicable in computer science.

I had always been under the impression that VLSI is a core hardware subject and has got nothing to do with software related stuff.

Here are a few things which I felt during this course: I feel the course would have been better if the instructor would have not used slides and had written points on board.

It gives a feeling that 'oh everything is there in slides, I can always go to hostel room and study' and this sometimes makes my brain lazy during the class which should not be the case.

Two assignments were given during the course to be solved by students which are really fun and interesting.

FUTURE WORK

- **MULTILINGUAL FORMS:** SUPPORT OF MANY REGIONAL AND INTERNATIONAL LANGUAGES FOR THE RESPONDENT.
- **QUESTION TYPES:** CURRENTLY OUR FORM SUPPORTS 5 TYPES OF QUESTION, WE CAN ADD MORE QUESTION TYPES AS PER THE REQUIREMENT
- **VISUALIZE DATA RESPONSE:**
 - CREATE STATISTICS AND ENGAGING GRAPHS WITH A FEW CLICKS FOR ALL QUESTIONS OF OUR FEEDBACK FORM.
 - FILTER THE RESULTS BASED ON CERTAIN RESPONSES. EXPORT THE STATISTICS TO EXCEL OR PDF.
- **DYNAMIC QUESTIONS:** CREATE QUESTIONS BASED ON PREVIOUS ANSWERS. USE ANSWERS GIVEN TO YOUR PREVIOUS QUESTIONS TO VALIDATE AND REFINE YOUR RESULTS
- **ADDING PLUGINS LIKE TRELLO, GOOGLE CALENDAR, ETC.**

REFERENCES

- [HTTPS://ANGULAR.IO/DOCS](https://angular.io/docs)
- [HTTPS://WWW.TUTORIALSPOINT.COM/CSS/WHAT IS CSS.HTM](https://www.tutorialspoint.com/css/what_is_css.htm)
- [HTTPS://MEDIUM.FREECODECAMP.ORG/WHAT-EXACTLY-IS-NODE-JS-AE36E97449F5](https://medium.freecodecamp.org/what-exactly-is-node-js-ae36e97449f5)
- [HTTPS://WWW.JAVATPOINT.COM/WHAT-IS-EXPRESSJS](https://www.javatpoint.com/what-is-expressjs)
- [HTTPS://WWW.MONGODB.COM/WHAT-IS-MONGODB](https://www.mongodb.com/what-is-mongodb)
- [HTTPS://MEDIUM.COM/@ONDENYI.ERIC/EXTRACTIVE-TEXT-SUMMARIZATION-TECHNIQUES-WITH-SUMY-3D3B127A0A32](https://medium.com/@ondenyei.eric/extractive-text-summarization-techniques-with-sumy-3d3b127a0a32)