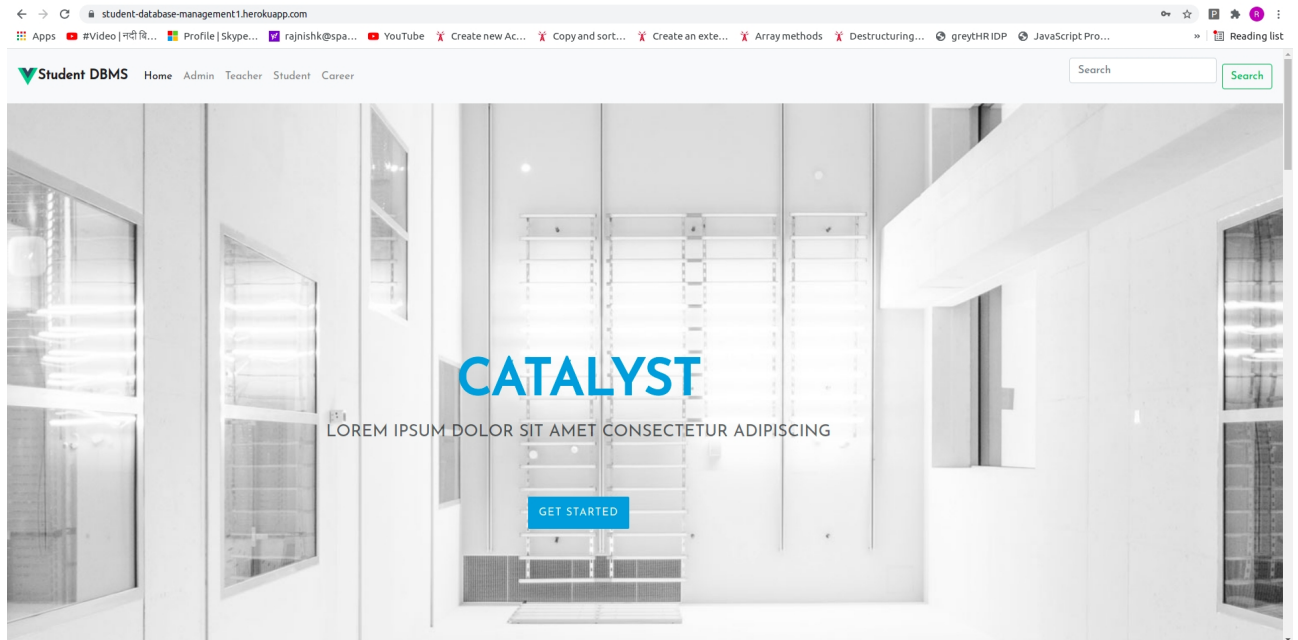# Student Database Management

SECTION A: Common Features

1. Home Page

***Home Page contains:
a. Logo and Title(Student DBMS)
b. Home on clicking on it user will stay on the same page i.e Home page)
c. Admin
d. Teacher
e. Student
f. Career Section(link to apply for a teacher job)

Note: After clicking on Admin,Teacher and Student link user will be redirected to common Login Page.

*** For the basic understanding of VUEJS watch this:
https://www.youtube.com/watch?v=qZXt1Aom3Cs&t=1767s

*** For the home page creation:
https://www.youtube.com/watch?v=wBTnD_ob12M

*** For complete Production level understanding:
https://www.youtube.com/watch?v=HgpVgFdBS2E&list=PLAl8os33KyOVD4asd0Sf7BcuE41fu7i6c&index=1

Note: For payment details use paytm payment bank(don't use regular bank details) . For the free Amazon web services they will charge Rs. 2 but will be returend. To use free Add-ons in Heroku you will be charged Rs. 66 but again will be returened so don't worry.

2. Common Login Page:

*** There is a common login page based on the role of user.
*** Threre are three Roles in the application which are Admin,Teacher and Student.

***watch this one to create login page in vuejs:
https://www.youtube.com/watch?v=k2HzNKAI8QY&list=PLhBD-2kqNQTgGYG0fqQ1huLrcOrELCHNa&index=3

*** Password hashing using Bcrypt npm package:
https://www.youtube.com/watch?v=sTHWNPVNvm8&list=PLpPqplz6dKxVC1RlVMH_LcZz2vUheC1-i&index=2

Note: At the bottom of the common login page there is a link to forget password page.

*** watch this one to completely understand forget/reset password logic and implementation
https://www.youtube.com/watch?v=72JYhSoVYPc

*** Sending Emails from node.js app:
https://www.youtube.com/watch?v=nF9g1825mwk

3. Forget Password Page:

*** After verifying the email and the role a reset passoword link will be sent to user on mail. After clicking the link on the mail reset password page will open.
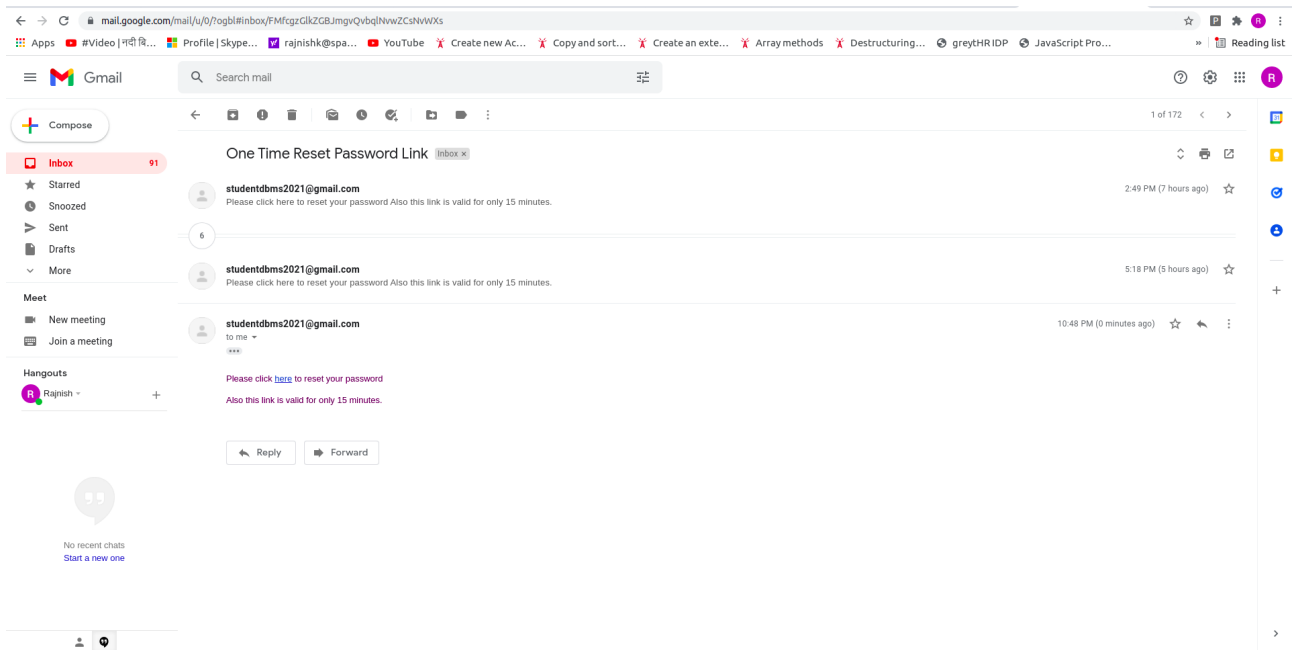
4. Reset Password Page:

*** After entering new password and confirm new password, password will be updated.

Section B : Admin

1. Admin Dashboard:

After entering the correct details in the common login page user will be redirected to Admin Dashboard.

*** On the leftmost side of the dashboard Profile Picture,Email and Phone Number will is displayed

*** On right side of dashboard all the registration details of student, teacher and admin is displayed

*** Admin Dashboard contains:

a. **Logout** (on clicking user will be logged out and redirected to common login page)

b. **Register Student** (Admin will register new student through this link)

c. **Register Teacher** (link for the teacher registration)

d. **Register Admin** (link for the admin registration)

e. **Issue a Notice** (link to Issue a notice)

f. **Job Application** (all the job application will be displayed to the admin with resume of each applicant)

g. **Upload Image** (admin will choose a profile pictue which will be displayed on the dashboard)

2. Register Student Page:

Note: This page is protected. Only admin can open this page.
Json web token is used for the authentication

*** Why should we use JWT:
https://www.youtube.com/watch?v=7Q17ubqLfaM

*** JWT authentication:
https://www.youtube.com/watch?v=Pg7p2F8zI5I&list=PLwGdqUZWnOp3t3qT7pvAznwUDzKbhEcCc&index=16

*** storing json web token in cookie:
https://www.youtube.com/watch?v=Pg7p2F8zI5I&list=PLwGdqUZWnOp3t3qT7pvAznwUDzKbhEcCc&index=16

*** Protecting(authenticate before serving a page) a page using JWT:

https://www.youtube.com/watch?v=u19Qdq7fhTk&list=PLwGdqUZWnOp3t3qT7pvAznwUDzKbhEcCc&index=34

*** After clicking on the register button student data will be stored in the student_registration table in the database and an email will be sent to the user having information regarding password.

*** Creating Registration page (frontend code):

https://www.youtube.com/watch?v=7Q17ubqLfaM

*** Backend Code for Registration:

https://www.youtube.com/watch?v=S-nC83myMIs&t=2180s

3. Register Teacher Page:

*** This page is protected and only admin can open it.

*** After clicking on the register button teacher data will be stored in teacher_registration table in the database and an email will be sent to the user having information regarding password.

4. Register Admin Page:

*** This page is also proteced. Only Admin can open it.

*** After clicking on register button data will be stored in admin_registration table in the database and an email will be sent to the user having information regarding password.

5. Notice Page:
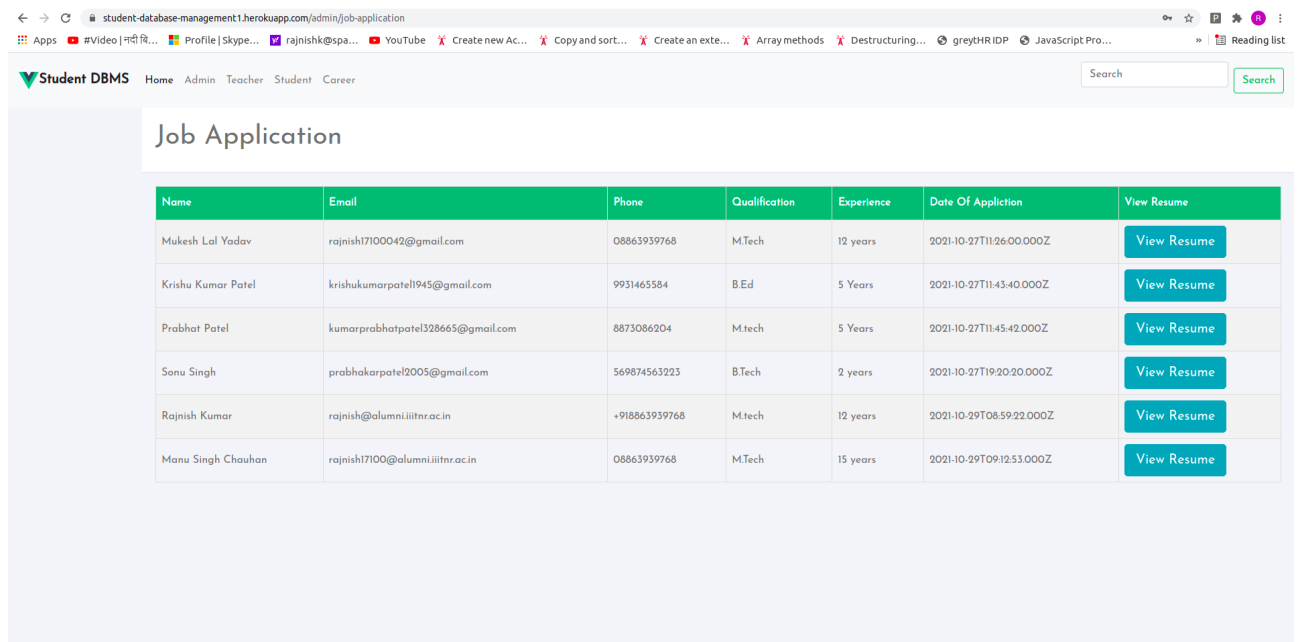
*** This is a protected page. Only Teacher and Admin can open this page.

*** There are three groups to which notice can be sent:

a. Student

b. Teacher

c. Common(notice will be sent on the mail of all the registered user)

6. Job Application Page:

*** This is a protected page. Only admin can open it.

*** All the job application will be displayed on this page.

*** Admin can download the resume and review it. One advancement to it can be directly displaying the resume without download.

7. Upload Image Page:

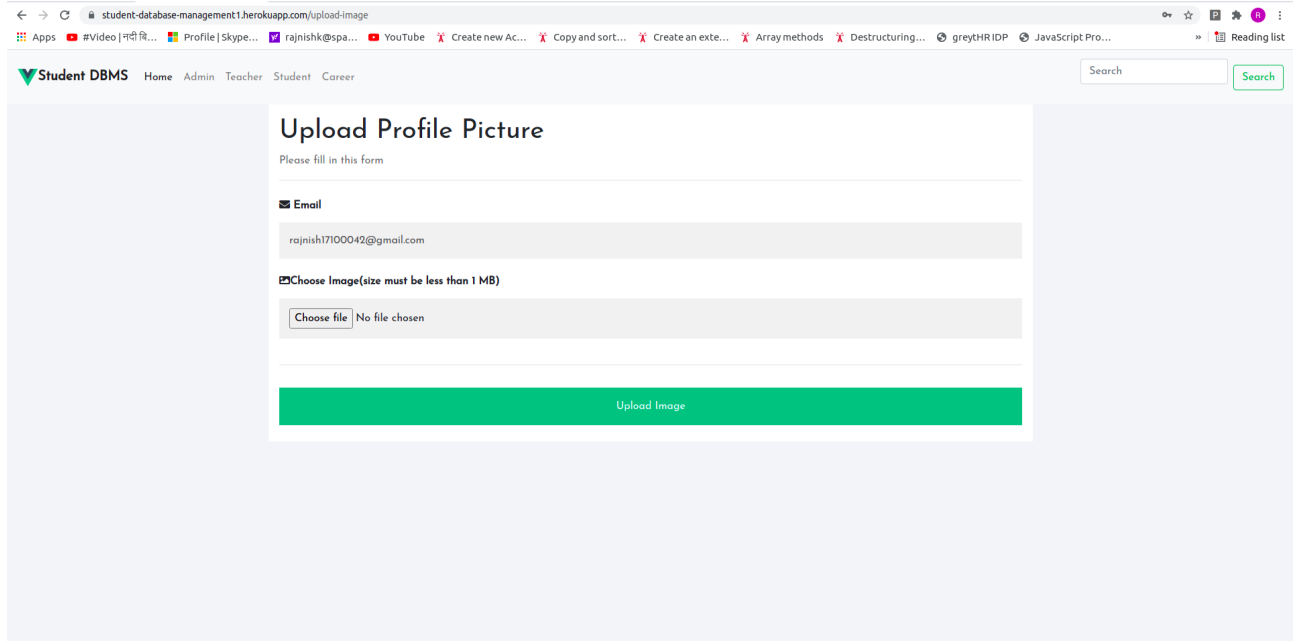*** This is a protected page. Only registered student,teacher,admin can open it.

*** With the help of this page user can upload profile picture which will be displayed on dashboard.

*** NodeJs Image uploading with multer:

https://www.youtube.com/watch?v=9Qzmri1WaaE

*** Uploading image directly to Amazon S3:

https://www.youtube.com/watch?v=yGYeYJpRWPM&t=430s

*** Uploading image to Amazon S3 from Node backend(suggested method):

https://www.youtube.com/watch?v=NZElg91l_ms

*** Complete Playlist for file uploading to Amazon S3:

https://www.youtube.com/watch?v=7j9t_7FcXLw&list=PLuNEz8XtB51LJ-3DuKypUlvYlC1tF-BT5&index=1

8. Displaying Registration details of Student,Teacher and Admin on admin dashboard:

Students List

Name	Email	Phone	Batch	Personal Mentor	Action
Rajnish Patel	rajnish17100@gmail.com	8863939768	Pre-Foundation	Mantosh Singh	
Shankar Singh	rajnish17100042@gmail.com	8863939768	target	teacher	
Krishu Kumar Patel	krishukumarpatel1945@gmail.com	9931465584	Acheiver	Mantosh Singh	
Prabhat Kumar Patel	kumarprabhatpatel328665@gmail.com	8873086204	Acheiver	Mantosh Singh	
student	student@test.com	+918863939768	Pre-foundation	teacher	

Teachers List

Name	Email	Phone	Qualification	Experience	Action
Mithilesh Choubey	kumarprabhatpatel328665@gmail.com	698745623568	P.H.D	15 years	
Mantosh Singh	rajnish17100042@gmail.com	69845698562	BTECH	5 years	
Rajnish Kumar	kumarrishuraj2008@gmail.com	08863939768	MTech	12 years	
Rajnish Kumar	rajnish17100042@gmail.com	08863939768	MTech	12 years	
teacher	teacher@test.com	123456789	MTech	12 years	

Admins List

Name	Email	Phone	Action
Admin	admin@test.com	123456789	
Prabhakar Kumar Patel	prabhakarpatel2005@gmail.com	8873086204	
Prabhat Kumar Patel	kumarprabhatpatel328665@gmail.com	8873086204	
Krishu Kumar Patel	krishukumarpatel1945@gmail.com	9931465584	

***These lists will only be displayed to the admin.

*** Admin can edit,delete and change password of users(Student, Teacher, Admin) on clicking the respective icons based on the id(one column in the database table) of the user

9. Student details updation by Admin:

*** Data Updation logic in VUEJS:
https://www.youtube.com/watch?v=dWF41e8lhVY&list=PL8p2I9GklV44m5tFH-zjCmTiHeq9GZrby&index=18

***Prefilling details in the Update Page:

https://www.youtube.com/watch?v=EBEU7t35rNg&list=PL8p2I9GklV44m5tFH-zjCmTiHeq9GZrby&index=19

https://www.youtube.com/watch?v=Tr_mVFBnx5s&list=PL8p2I9GklV44m5tFH-zjCmTiHeq9GZrby&index=20

*** Data deletion logic:

https://www.youtube.com/watch?v=t3cojoA1SRQ&list=PL8p2I9GklV44m5tFH-zjCmTiHeq9GZrby&index=21

*** What is RESTful API?

https://www.youtube.com/watch?v=Q-BpqyOT3a8

*** How t create RESTful API:

https://www.youtube.com/watch?v=1MTBuP1nfLg

https://www.youtube.com/watch?v=eB9Fq9I5ocs&t=891s

10.Student Password Updation by admin:

*** To change the password of student admin should know the current password otherwise no way to update the password
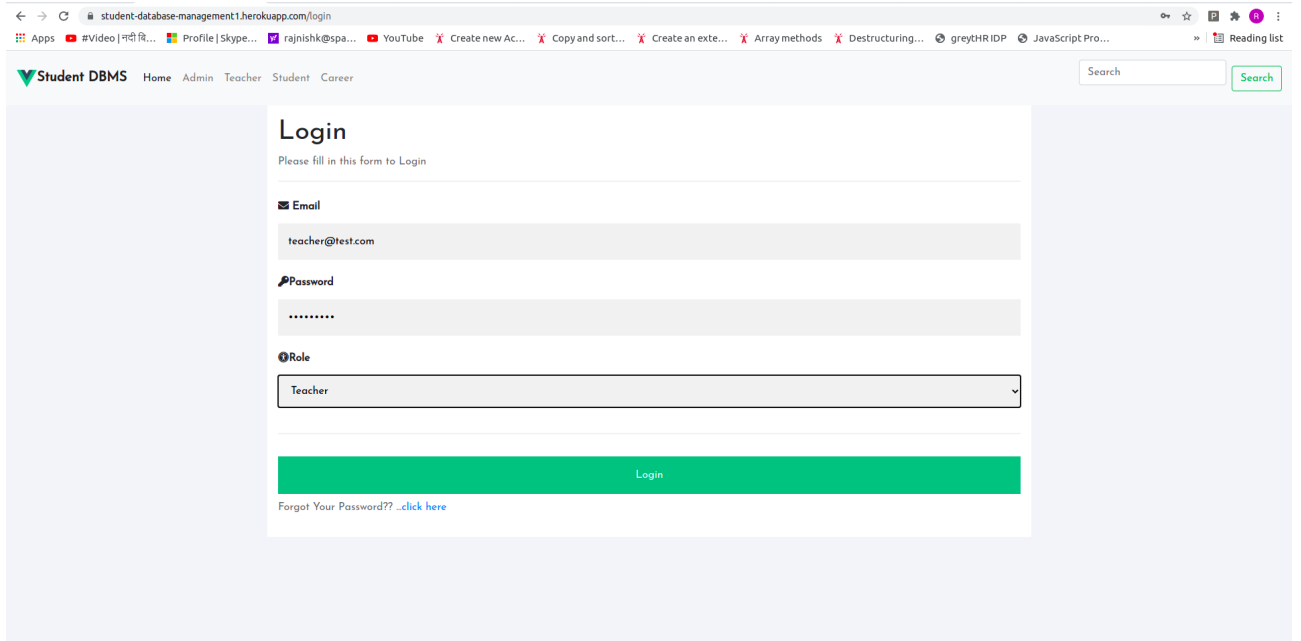
***Similarly admin can update details of Teacher and other Admins

Note: In the application there is a Super Admin which is registered in the initial phase of the application. There is no way to delete the super admin. Non super admin can be deleted.

Section C: Teacher

1. Teacher Dashboard:

After entering the correct details(email,password and role) in the common login page user will redirected to the teacher dashboard.

*** On the leftmost side of dashboard profile picture, email and phone number of user is displayed.

*** On the right side user registration details and the details of students whose personal mentor is the current user(teacher) is displayed.

*** Teacher Dashboard contains:

a. **Logout** (on clicking user will be logged out and redirected to common login page)

b. **Update Passoword** (user can update it's own password)

c. **Upload Image** (teacher will choose a profile pictue which will be displayed on

the dashboard)

d. **Issue a Notice** (link to Issue a notice)

Note: All these four features are almost similar to the above discussed.

Section D: Student

1.Student Dashboard:

After entering the correct details in the common login page user will be redirected to student dashboard.

*** On the leftmost side of dashboard profile picture, email and phone number of user is displayed.

*** On the right side user registration details are displayed.

*** features for student:
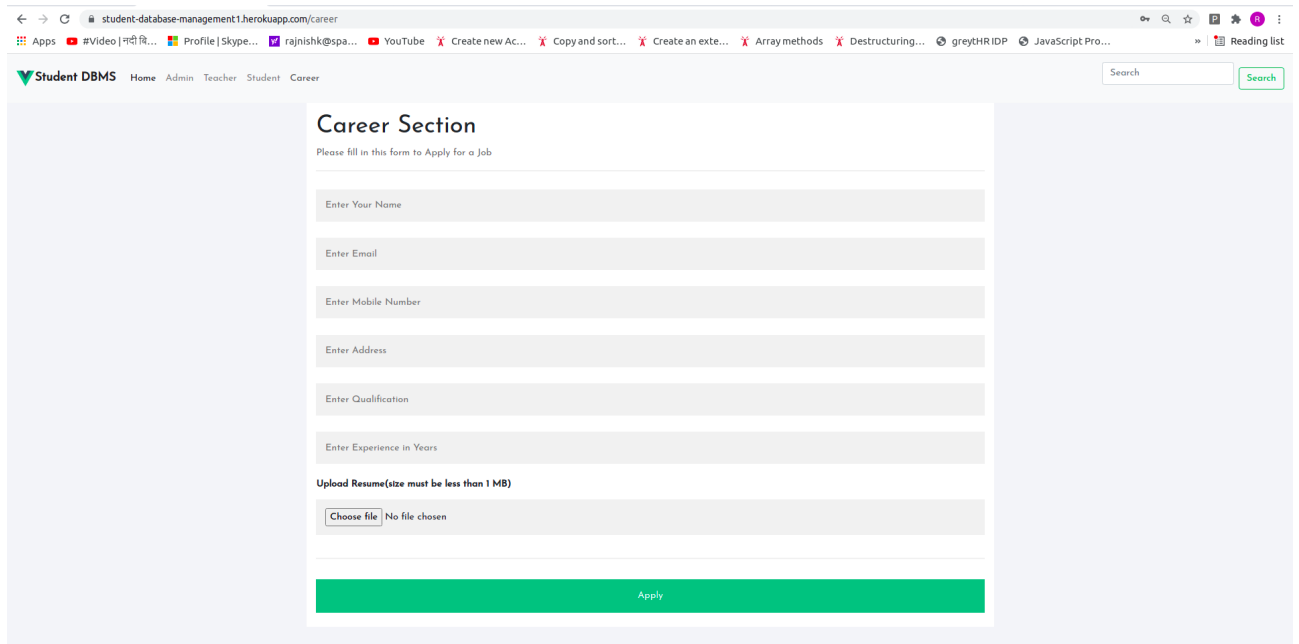
    a. Logout

    b. Update Password and c. Upload Image

Section E: Career

1. Career Page:

One can apply for the job with the help of career link.

*** This page can be accessed by anyone.

*** After applying for the job an email will be sent to applicant saying that your resume under review.

Note: While sending the job allpication data along with the Resume I was facing problem with sending all data in the request body.

So the solution which I used for this is: I am sending the file(resume) in the request body as a form data and other data I am sending as a query parameter to the URL.

*** Sending data as a query parameter to the URL:
https://www.youtube.com/watch?v=crWdh53CYnw&t=288s

Section F: Application Requirements

Requirements:

1.The app should have a login functionality.

2.The application should three roles, viz. Student, Teacher, and Administrator(hereby referred as admin)

3.The student should only be able to view and edit only his/her respective data and not any other's data.

4.The teacher should only be able to view and edit only his/her respective data and not any other's data.

5.Students will be assigned to a particular teacher

6.A teacher can add, edit, view, delete students only under his/her supervision

7.A system admin will have the ability to add, update, block, and delete any student and teacher.

8.Any student should not be able to edit/view the teacher's data.

9.Any student should not be able to edit/view the admin's data.

10.Any teacher should not be able to edit/view the admin's data.

11.The app should also maintain who last edited the student's record.

12. After registration is done by the admin, password of the registered user

should be sent on registered email.

13.Implement notice feature for teacher and Admin to announce certain things.

14. Also give facililty to issue notice for teachers group, student group and common group.

15. Email notice to all members

16. Add feature to upload profile photo.

17.Add feature to upload teacher resume.

18. Add feature for forget password using otp in mail or on mobile numeber

19.On Home page add registration page for student to apply for admission.

20. Add career section on Home page where teachers can apply for job

Section G: Tools and Technologies

1. Client Side technology: **VUEJS**

2. Server Side Technology: **NodeJs and ExpressJs**

3. Database: **MYSQL Database**

4. Password Hashing: **BCRYPT**

5.Authentication: **JSON WEB TOKEN**

6. Deployment: **Heroku**

7. File Storage: **Amazon S3**

8. Code Editor: **VSCODE**

9.Remote Database connection: **JawsDB MYSQL(Heroku Add-ons) and MYSQL Workbench**

10. Version control: **GiT HUB**

11. Application Deployment link:

https://student-database-management1.herokuapp.com/

12. Project Code Link: **https://github.com/rajnish17100042/student-dbms**

Section H: References

1. vueJS tutorials:

https://www.youtube.com/watch?v=qieXC2pfeN0&list=PL8p2I9GklV44m5tFH-zjCmTiHeq9GZrby&index=1

2 Nodejs Tutorial:

https://www.youtube.com/watch?v=SY-NEr_bpEs&list=PLwGdqUZWnOp3t3qT7pvAznwUDzKbhEcCc&index=40

3. Basic designing of the app:

https://www.youtube.com/watch?v=30iSu-R_uSA

4. Jwt authentication:

https://www.youtube.com/watch?v=x5gLL8-M9Fo&t=89s

https://www.youtube.com/watch?v=7nafaH9SddU&t=578s

5. Javascript concepts:

https://javascript.info/

6. **vueJS CRUD app:**

https://www.youtube.com/watch?v=JLc-hWsPTUY

7. Frontend design,styling and SQL tutorial:

https://www.w3schools.com/

8. npm package manager :

https://www.npmjs.com/package/nodemailer

9. Email sending feature:

https://www.youtube.com/watch?v=nF9g1825mwk

10. forget password feature implementation:

https://www.youtube.com/watch?v=72JYhSoVYPc

11. file uploading in vuejs:

https://www.youtube.com/watch?v=VqnJwh6E9ak

12. file uploading using multer(server side):

https://www.youtube.com/watch?v=9Qzmri1WaaE

13. uploading file to Amazon S3:

https://www.youtube.com/watch?v=NZElg91l_ms

https://www.youtube.com/watch?v=yGYeYJpRWPM

https://www.youtube.com/watch?v=VpOPX8K2Yjg

14. Advanced mailing system using Gmail API:

https://www.youtube.com/watch?v=-rcRf7yswfM

15. reactjs nodejs deployment to heroku:

https://www.youtube.com/watch?v=7il2CrBA5VY&list=PLwGdqUZWnOp3t3qT7pvAznwUDzKbhEcCc&index=44

https://www.youtube.com/watch?v=71wSzpLyW9k

16.vueJs deployment to heroku:

https://www.youtube.com/watch?v=y0Vnl6UswyA

https://www.youtube.com/watch?v=W-b9KGwVECs&t=610s

17. nodejs,mysql,ejs deployment to heroku:

https://www.youtube.com/watch?v=ZZp0VIjTsbM