EMI Calculator

Instructions:

- Read each and every line of question carefully, missing any functionality which was asked will reduce your overall marks.

- Use react-router for routing.

- Use Mongo atlas database.

- Use only Material UI as UI library.

Problem Statement:

Backend:

- Need to have register api so that user can register his details and login from next time. Registration values should take name, email, password

- Need to have login api

- Note that this is multiuser app.

- Need to have getProfile api to get profile details of logged in user.

- Need to have calculateEMI api which when called calculates the EMI based on below inputs

  - Inputs

    - **Loan amount**

    - **Annual Interest rate (%)**

    - **Tenure in months**

  - Output

    - **EMI**

    - **Interest Payable**

    - **Total Payment**

- The formula to calculate

  ```
  EMI:E = P x r x ( 1 + r )n / ( ( 1 + r )n - 1 )
  ```

  - where E is EMI,

  - P is Principal Loan Amount

  - r is monthly rate of interest (For eg. If rate of interest is 14% per annum, then r = 14/12/100=0.011667)

  - n is loan duration in number of months.

- For example, if you borrow ₹1,00,000 from the bank at 14% annual interest for a period of 3 years (i.e., 36 months), then

  ```
  EMI = ₹1,00,000 * 0.011667* (1 + 0.011667)36 / ((1 + 0.011667)36 - 1) =
  ₹3418.
  ```

- This would mean that you shall be paying ₹3418 for 36 months to repay the loan completely. Your total repayment amount shall be ₹1,23,039 which includes principal of ₹1,00,000 and interest of ₹23,039.

- Need to have logout api to get out of the app.

- Take care of all good practices - naming conventions, MVC structure etc.

Frontend:

- As a user I need to register and login to the account and be able to calculate the EMI value.

- Create signup and login pages on Frontend.

- Take name, email, password from user to signup.

- After user logs in, two routes should be displayed

  - Profile route

  - EMI calculator route

- UI for reference for EMI page

- Build a pie chart as shown above in screenshot which displays Principal and Interest

- Visit this website to see live demo : https://paymatrix.in/loan-emi-calculator

- **Profile route** display name, email of logged in user along with timestamp of logged in user

Submission

- Please submit deployed link and Github link of code.

- Deploy backend on Heroku.

- Please double check if deployed version works or not (run deployed version on your laptop and then submit it).

- Any issues in deployed link, will be considered null and void.

- Please verify your submissions are correct.

- Make sure you follow all instructions carefully.

- Submit before deadline.

Rubrics / Criteria to be judged upon

- HTML, CSS, React

- React router

- Backend
- Code cleanliness

Time Limit - `3.5 Hours`

1. Have attempted/created react app/wrote server file, api end points etc Backend 2. Authentication is done - used JWT for token 3. Have encrypted/hashed password before storing in DB using bcrypt or any other library. 4. Have used Mongo Atlas, stored the URL in .env file. Reduce 0.5 marks if the URL is not in .env and exposed in the code 5. calculateEMI Api is done which sends EMI to frontend 6. Relationship is established correctly between the user collection and bmi collection, such that previous BMI history is present and Frontend 7 - Relevant routes - Signup, login,Profile and BMI Calculator are present and working 8 - Able to calculate EMI with all required outputs 9 - Able to build pie-chart. 10 - Good coding practices, clean code, committed code regularly, deployed successfully etc