API for Grofers' Referral System as a Web Application

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Functionalities:

1. Registration of User
2. Enrolment into Referral System
3. Withdraw from Referral System
4. Get Referral code which can be shared on social media platforms.
5. Give incentives if registered using referral code
6. Show Referral history with masked email addresses.
7. Show milestone to get cash rewards

Framework Used: NodeJS
Database Used: Firebase Database

How to run:

1. Install NodeJS
2. Type 'npm run dev' in Command Prompt/Linux Terminal.
3. Search 'localhost:5000' in the browser.

Libraries Used:

1. Express: To make a web application.
2. Referral-code-generator: To generate referral code for registered users.
3. Mask-email-phone : To mask the email addresses.
4. Firebase-admin: To connect to Google's Firebase Database.

Assumptions:

1. We make an assumption that the referral code being generated using the referral code generator is always unique. Although we can extend the implementation to always make a unique referral code.
2. The code runs on a local machine. Although the database we are using if Google' FIrebase database and it is a global realtime database. We can deploy the code on a server to access globally

Note: Focused mostly on the backend part rather than frontend.

API details

HomePage: localhost:5000/

1. Get Referral Code

To get the personalized referral code for the user. Users can get this Code and share on Social Media platforms etc.

Users have to first register before getting the referral code.

For already registered users to get their referral code:

API: localhost:5000/show_referral_code?username=USERNAME&password=PASSWORD

Details:

- Way to get user's referral code using username
- It first checks if the username and password are valid or else shows an error.
- Or else return JSON response having username and it's referral code
- JSON Response Format:

```
{
    'username' : 'root',
    'referral' : 'abcdwxyz'
}
```

```javascript
app.get('/show_referral_code',async (req,res)=>{ . . . }
```

2. Register

API which allows users to sign up with referral code and give incentives to both referee and referred user.

Give Rs. 100 incentive to both the register user and the referee if registered using Referral Code.

SignUp API: localhost:5000/register

Details:

- Get request page for registration of user
- It shows the registration form to be filled by user

```javascript
app.post('/register', (req,res) => { . . . }
```

3. Get Referral History

API which allows users to get their referral history and the incentives.

Referral History API:

localhost:5000/get_referral_history?username=USERNAME&password=PASSWORD

Details:

- It first checks if the username and password are valid or else shows an error.
- It shows the email id and their incentives which have registered using the user's referral code.
- Return the JSON response:
- Format of JSON:

  ```
  {
      'email1@xyz.com' : 100,
      'email2@xyz.com' : 100
      'email3@xyz.com' : 100,
      .
      .
      .
  }
  ```

- If the user enters invalid userid, it shows error

```
app.get('/get_referral_history',async (req,res)=>{ . . . }
```

4. Show Milestone

API which allows users to get the milestones.

Milestone API:

localhost:5000/show_milestone?username=USERNAME&password=PASSWORD

Details:

- It first checks if the username and password are valid or else shows and error.
- Using this user can get to know about the number of user who has registered using his referral code.
- If user enters invalid code it shows error

```
app.get('/show_milestone', async (req,res) => { . . . }
```

5. Enroll and Withdraw

API to enroll into the Referral System and withdraw from the ReferralSystem

Enroll API:

localhost:5000/enroll_into_referral?username=USERNAME&password=PASSWORD

Details:

- Way to enroll into the Grofers Referral System
- It first checks if the username and password are valid or else shows and error.
- If the username is valid and:
- The user has already been enrolled then it shows message accordingly
- Or else Enrolls the user and send a JSON response having username and his Referral Code.
- JSON Response Format:
  {
      'username' : 'root',
      'referral' : 'abcdwxyz'
  }

```
app.get('/enroll_into_referral',async (req,res)=>{ . . . }
```

Withdraw API:

localhost:5000/withdraw_from_referral?username=USERNAME&password=PASSWORD

Details:

- Way to withdraw from the Grofer's Referral System
- It first checks if the username and password are valid or else shows and error.
- If the username is valid and:
- The user has already withdraw then it shows message accordingly
- Or else withdraws the user and shows success.

```
app.get('/withdraw_from_referral',async (req,res)=>{ . . . }
```

Individual API Demonstrations

1. Registration

Register to Grofers

Email: [   ]

Username: [   ]

Password: [   ]

Referral: [   ]

Register for Referral System: ● Yes ○ No

[Submit]

Email, Username and Password are mandatory fields while Referral is an optional field

If Register for Referral is Yes then a referral code is generated for the user or else the user is registered with inactive referral code.

Register to Grofers

Email: [diwakariitd22@gmail.com]

Username: [Diwakar]

Password: [••••••••]

Referral: [   ]

Register for Referral System: ● Yes ○ No

[Submit]

Registration Successfull!
Email: diwakariitd22@gmail.com
Username: Diwakar
Your Referral Code: wefhjzkt

Register to Grofers

Email: diwakariitd22@gmail.com

Username: Diwakar1

Password: ●●●●●●●●

Referral: wefhjzkt

Register for Referral System: ● Yes ○ No

Submit

Registration Successfull!
Email: diwakariitd22@gmail.com
Username: Diwakar1
Your Referral Code: qlspkcol
Referral Code Used:wefhjzkt :)

Register to Grofers

Email: diwakarprajapati18222@gm

Username: Diwakar

Password: ●●●●●●●

Referral:

Register for Referral System: ● Yes ○ No

Submit

Already Registered
Username: Diwakar
Try new Username!

Register to Grofers

Email: diwakarprajapati18222@gm

Username: Diwakar2

Password: ●●●●●●●●

Referral: invalid referral

Register for Referral System: ● Yes ○ No

Submit

Opps! Invalid Referral Code

Register to Grofers

Email: diwakarprajapati18222@gm

Username: Diwakar2

Password: ••••••••

Referral:

Register for Referral System: ○ Yes ● No

Submit

Registration Successfull!
Email: diwakarprajapati18222@gmail.com
Username: Diwakar2

2. Get Referral Code

URL: http://localhost:5000/show_referral_code?username=Diwakar&password=Password
Response: {"username":"Diwakar","referral":"wefhjzkt"}

URL: http://localhost:5000/show_referral_code?username=Diwakar1&password=Password1
Response: {"username":"Diwakar1","referral":"qlspkcol"}

URL: http://localhost:5000/show_referral_code?username=Diwakar2&password=Password2
Response: Opps! You have not enrolled into referral system

URL: http://localhost:5000/show_referral_code?username=DiwakarInvalid&password=Invalid
Response: Opps! No Such user exists

3. Enroll into Referral System

URL: http://localhost:5000/enroll_into_referral?username=Diwakar&password=Password
Response: Opps! You have already enrolled into Referral System

URL: http://localhost:5000/enroll_into_referral?username=Diwakar2&password=Password2
Response: {"username":"Diwakar2","referral":"qxcyfowl"}

URL: http://localhost:5000/enroll_into_referral?username=Invalid&password=Invalid
Response: Opps! No Such user exists

URL: http://localhost:5000/enroll_into_referral?username=Diwakar2&password=Invalid
Response: Opps! No Such user exists

4. Withdraw from Referral System

URL: http://localhost:5000/withdraw_from_referral?username=Diwakar&password=Password
Response: Success! You have withdrawn from Referral System

URL:http://localhost:5000/withdraw_from_referral?username=Diwakar1&password=Password1
Response: Success! You have withdrawn from Referral System

URL:http://localhost:5000/withdraw_from_referral?username=Diwakar1&password=Password1
Response: Opps! You have already withdrawn from Referral System

URL: http://localhost:5000/withdraw_from_referral?username=Invalid&password=Invalid
Response: Opps! No Such user exists

URL: http://localhost:5000/withdraw_from_referral?username=Diwakar2&password=Invalid
Response: Opps! No Such user exists

5. Show Milestone

URL: http://localhost:5000/show_milestone?username=Diwakar&password=Password

Response

> **Total Earned Incentive: Rs. 300**
> **No of users register using your referals: 3**
> **Next Milestone: 6**

URL: http://localhost:5000/show_milestone?username=Diwakar2&password=Password2

Response:

> **Total Earned Incentive: Rs. 0**
> **No of users register using your referals: 0**
> **Next Milestone: 3**

URL: http://localhost:5000/show_milestone?username=Diwakar1&password=Password1

Response:

> **Total Earned Incentive: Rs. 100**
> **No of users register using your referals: 1**
> **Next Milestone: 6**

URL: http://localhost:5000/show_milestone?username=Invalid&password=Invalid
Response: Opps! No Such user exists

URL: http://localhost:5000/show_milestone?username=Diwakar2&password=Invalid
Response: Opps! No Such user exists

6.Get Referral History

URL: http://localhost:5000/get_referral_history?username=Diwakar&password=Password
Response: {"ab*******l.com":"100","di*************l.com":"100","ab******l.com":"100"}

URL: http://localhost:5000/get_referral_history?username=Diwakar1&password=Password1
Response: {"di*************l.com":"100"}

URL: http://localhost:5000/get_referral_history?username=Diwakar2&password=Password2
Response: {}

URL: http://localhost:5000/get_referral_history?username=Invalid&password=Invalid
Response: Opps! No Such user exists

URL: http://localhost:5000/get_referral_history?username=Diwakar2&password=Invalid
Response: Opps! No Such user exists