

IMPLEMENTATION

- Angular 8 front end based on Angular Material components for an enhanced user experience and professional look and feel for the application
- Responsive layout that looks great on mobile
- Tested on the latest version of Chrome
- Node.js, the choice of server-side run-time, results in consistency as JavaScript is used for both the client and server side language
- User authentication for enabling adding/removing favourite movies
- JWT based authentication, user remains logged in for 1 hour
- No page reloads and user redirection upon accessing wrong URLs
- Inject Angular services into components used for making HTTP requests
- Display snackbar messages on the front end upon errors returned by the server
- Use express for Node.js to keep the code lean
- Stateless Node.js API, enabling future re-use for similar desktop/mobile applications to be developed
- Code re-use for the authentication component in Angular
- Enabled viewing movie trailers if one found inside the app.
- Hash passwords using bcrypt-js before storing in database for new user registration on the app.

TO DO

- Escape user input in Node.js script to prevent SQL injection, possible solution – Prepared statements
- Better error handling on both front-end and back-end, currently validation only present on the front-end
- Add richer information about the movies create a profile page for users to edit their information
- Use formal testing suites
- Add authentication guards in Angular to prevent access on unwanted pages
- Add authentication middleware in Node.js to validate token
- Separate server-side logic to controllers for maintainable code
- Restrict cross origin requests

Go to page 2 for demo screenshots.

DEMO

Home page listing all movies in the database:-

The screenshot shows a web browser window with the URL 'localhost:4200'. The page has a blue header with 'Home' on the left and 'Login/Register' on the right. Below the header is a section titled 'ALL MOVIES'. It displays four movie cards for 'The Avengers', 'Avengers: Infinity War', 'Avengers: Endgame', and 'Avengers: Age of Ultron'. Each card includes the movie title, IMDb rating, a poster image, a brief synopsis, a heart icon for favoriting, and a 'VIEW TRAILER' button.

Movie Title	IMDb Rating	Synopsis
The Avengers	8.0	Earth's mightiest heroes must come together and learn to fight as a team if they are going to stop the mischievous Loki and his alien army from enslaving humanity.
Avengers: Infinity War	8.5	The Avengers and their allies must be willing to sacrifice all in an attempt to defeat the powerful Thanos before his blitz of devastation and ruin puts an end to the universe.
Avengers: Endgame	8.6	After the devastating events of Avengers: Infinity War (2018), the universe is in ruins. With the help of remaining allies, the Avengers assemble once more in order to reverse Thanos' actions and restore balance to the universe.
Avengers: Age of Ultron	7.3	When Tony Stark and Bruce Banner try to jump-start a dormant peacekeeping program called Ultron, things go horribly wrong and it's up to Earth's mightiest heroes to stop the villainous Ultron from enacting his terrible plan.

Authentication popup upon clicking the heart (favourite) button:-

This screenshot shows the same Home page as before, but with an authentication popup displayed in the center. The popup has two tabs: 'LOGIN' and 'REGISTER'. It contains input fields for 'Email *' and 'Password *', a 'LOGIN' button, and a 'REGISTER' button. The background movie cards are dimmed.

LOGINREGISTER

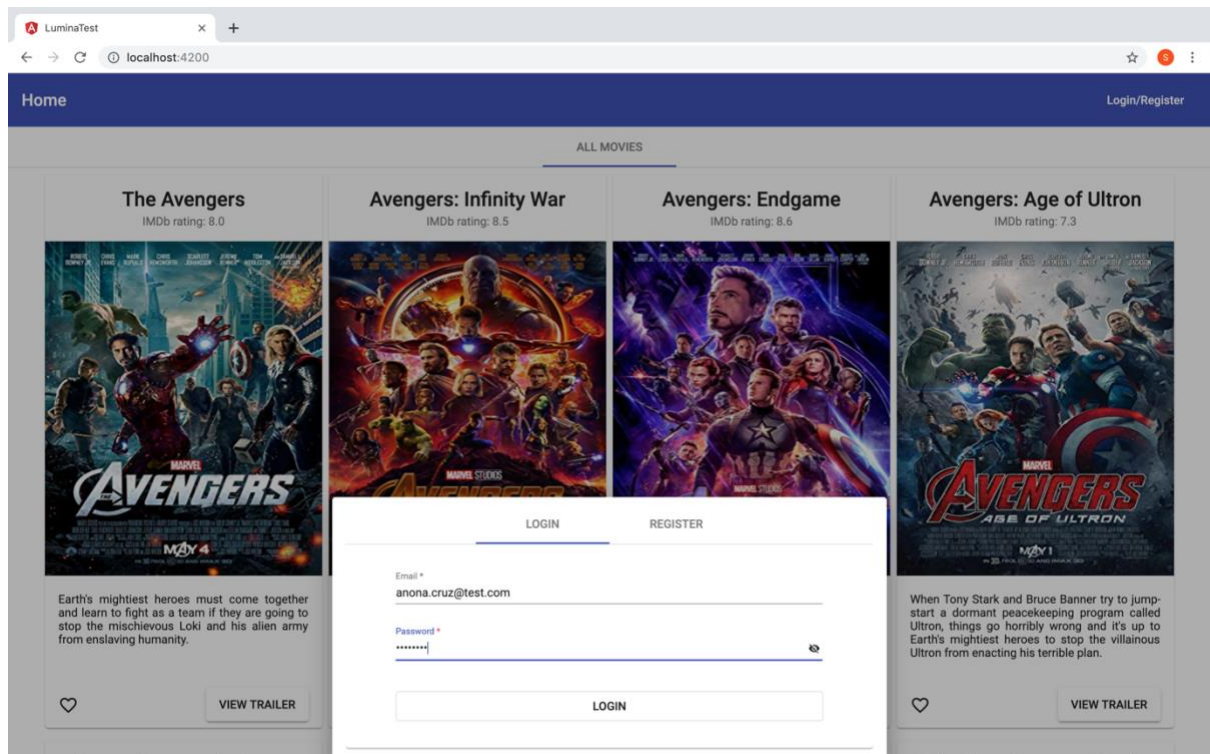
Email *

Password *

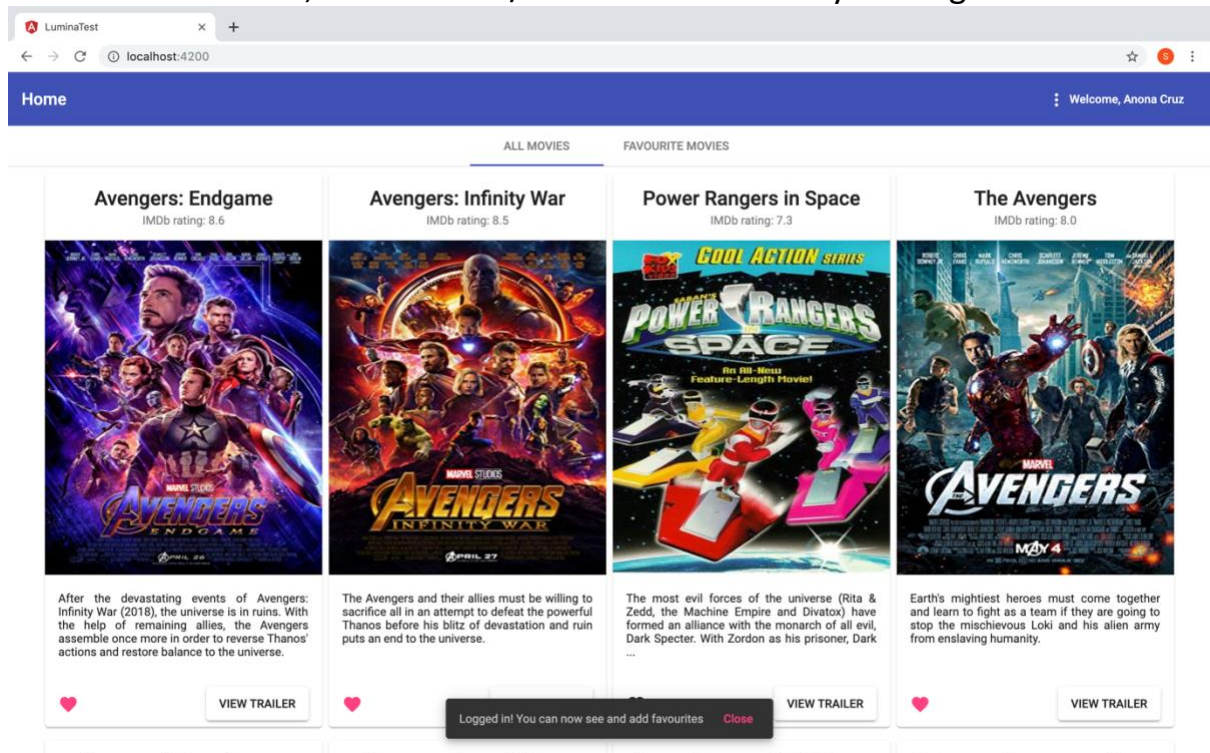
LOGIN

REGISTER

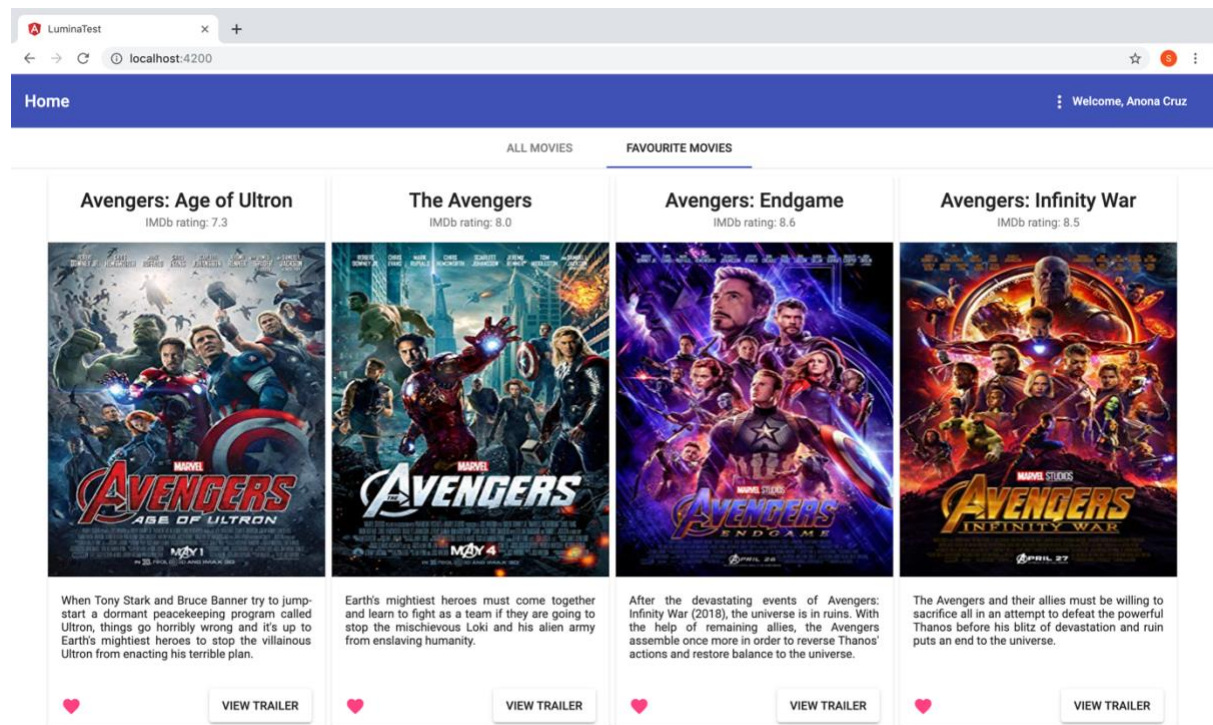
User authentication by filling in credentials for initial user email:
anona.cruz@test.com and password: password



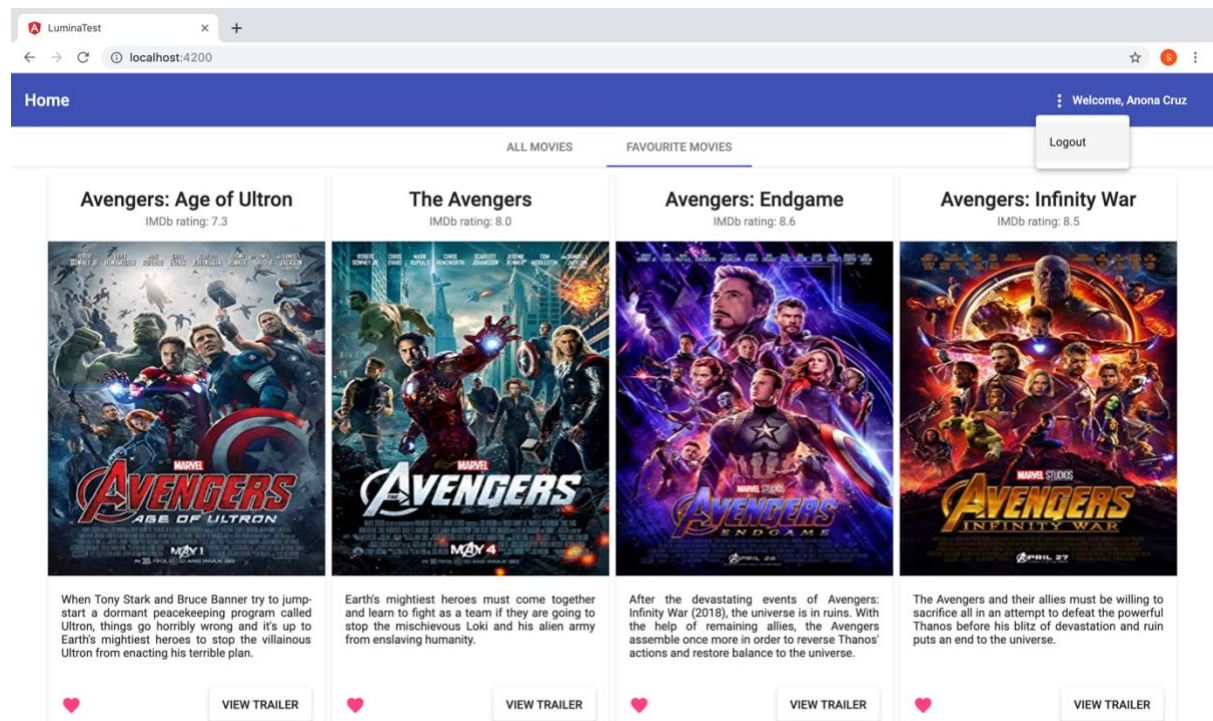
Authenticated user views the snackbar and can see favourite movies with a coloured heart icon, can also add/remove favourites by clicking on it:-



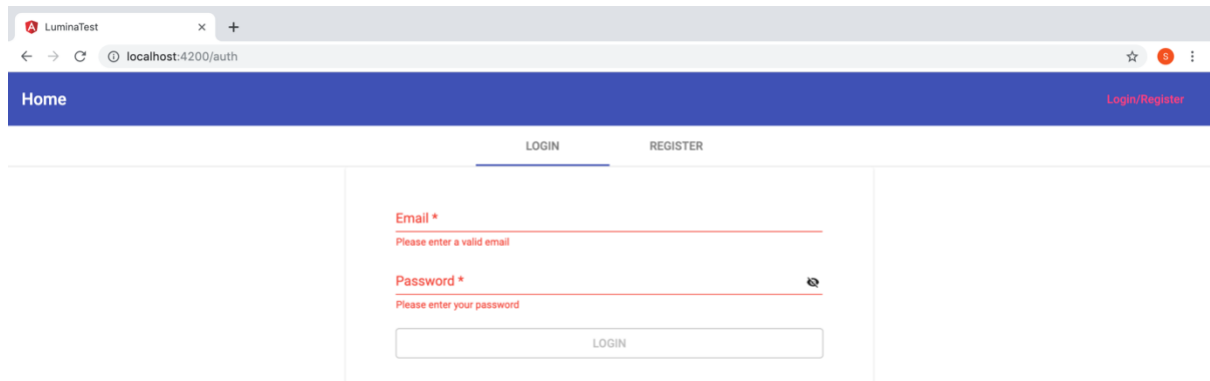
User switching to the Favourite Movies tab to view only the favourite movies:-



User logout displayed on clicking the welcome message on nav bar:-



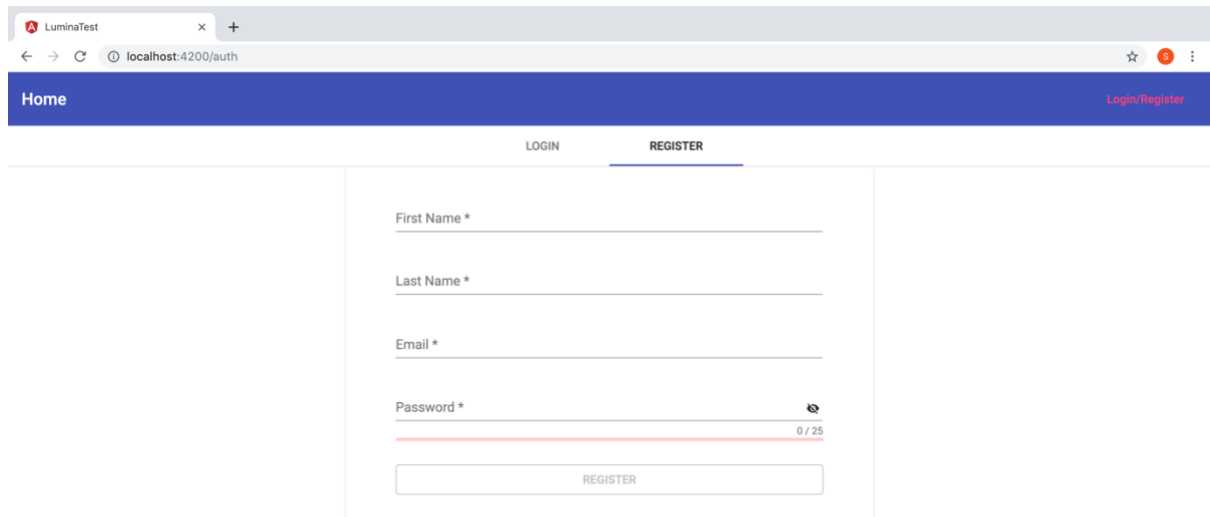
User authentication page can also be accessed directly from the link on Navigation bar when logged out:-



The screenshot shows a web browser window with the address bar displaying 'localhost:4200/auth'. The page has a dark blue header with 'Home' on the left and 'Login/Register' on the right. Below the header, there are two tabs: 'LOGIN' (active) and 'REGISTER'. The main content area contains a login form with the following fields:

- Email ***: A text input field with a red error message below it: 'Please enter a valid email'.
- Password ***: A text input field with a red error message below it: 'Please enter your password'. There is a small eye icon to the right of the field.
- LOGIN**: A button at the bottom of the form.

User registration screen for creating a new account:-



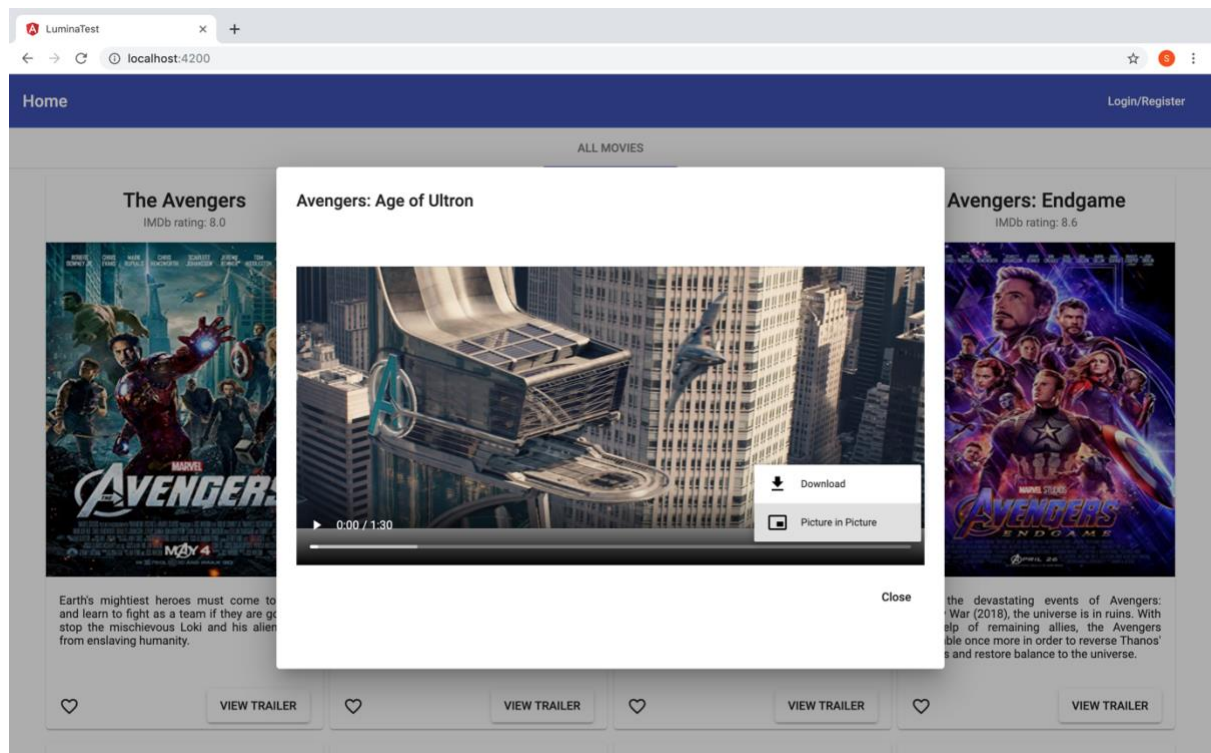
The screenshot shows the same web browser window, but the 'REGISTER' tab is now active. The main content area contains a registration form with the following fields:

- First Name ***: A text input field.
- Last Name ***: A text input field.
- Email ***: A text input field.
- Password ***: A text input field with a red error message below it: '0 / 25'. There is a small eye icon to the right of the field.
- REGISTER**: A button at the bottom of the form.

Real time validation for user input and error alerts (see password):-

The screenshot shows a web browser window with the address bar displaying 'localhost:4200/auth'. The page has a blue header with 'Home' on the left and 'Login/Register' on the right. Below the header, there are two tabs: 'LOGIN' and 'REGISTER'. The 'REGISTER' tab is active, showing a registration form. The form fields are: 'First Name *' with the value 'Sabhya', 'Last Name *' with the value 'Verma', 'Email *' with the value 'sabhya.verma10@gmail.com', and 'Password *' with the value '*****'. Below the password field, there is a progress bar showing '5 / 25' characters. Below the progress bar, there are five validation rules listed with checkmarks or error icons: 'contains at least one lower character' (checkmark), 'contains at least one upper character' (checkmark), 'contains at least one digit character' (error icon), 'contains at least one special character' (checkmark), and 'contains at least 8 characters' (error icon). At the bottom of the form, there is a 'REGISTER' button.

Upon clicking the View Trailer button, open a dialog with the trailer and video controls:-



Passwords for new users are hashed in the database:-

```
Sabhyas-MP:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 227
Server version: 8.0.17 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use luminaTest
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-----+
| Tables_in_luminaTest |
+-----+
| users                |
+-----+
1 row in set (0.00 sec)

mysql> select * from users;
+-----+-----+-----+-----+-----+-----+
| id | firstName | lastName | email | password | favourite_movies |
+-----+-----+-----+-----+-----+-----+
| 1 | Anona | Cruz | anona.cruz@test.com | password | tt0848228,tt4154756,tt2395427,tt4154796 |
| 2 | Camilla | Sayer | camilla.sayer@test.com | password | tt4154756,tt10515848,tt0120575 |
| 3 | Ganesh | Zentai | ganesh.zentai@test.com | password | tt0287871,tt2975590,tt0103776,tt4116284,tt2313197 |
| 4 | Vivien | Straub | vivien.straub@test.com | password | tt0926084,tt0417741 |
| 5 | Bernardita | Bishop | bernardita.bishop@test.com | password | tt0389860 |
| 6 | Sabhya | Verma | sabhya.verma10@gmail.com | $2a$10$Z8NKhKz1YTQ06ihxRiWc.eZaZsRgmFFk4bTt0KcJQ.ZsHeJR/htoC | tt4154756,tt4154796,tt2313197 |
| 8 | Sabhya | Verma | sabhya.verma11@gmail.com | $2a$10$C3uRfVadPw2QcL8/d0W.EK1wB866vCxHEjyEFCLwJemKnd4FRC | |
| 9 | Sabhya | Verma | sabhya.verma12@gmail.com | $2a$10$fjG7AoF8EYz71ktnR1Xya7Fb9389Q/nWJrXsV2UhdnpL.H1FVC | |
| 10 | Sabhya | Verma | sabhya.verma14@gmail.com | $2a$10$fvSchtTxxj0E41r217izhnewuqk7mAu.g9UDv1c3s/155vYqXn58e | |
| 11 | Sabhya | Verma | sabhya.verma16@gmail.com | $2a$10$8eDPL/w5jz0qV07HYF710M/GbTgI8vCObPLnpgkNEfHCiWz1SLxHC | |
| 12 | Sabhya | Verma | sabhya.verma18@gmail.com | $2a$10$Jp/mJuluWwdIRjJFL7k.SuCS7002g9TqkG61Fh4G7ASQ7D7RyShq | |
| 13 | Sabhya | Verma | sabhya@test.com | $2a$10$BwexSFUM.Y.JzhXChREUe/Fd9Se2YE6Z8xVjPp6n29vWwZAgK | tt2395427,tt4154756 |
| 14 | Sabhya | Verma | sabhya.verma19@gmail.com | $2a$10$sfPbJeyARsPmpZtmKJ160TtJr9bJlmm.HGII.u4b/XBLEcAlHCTW | tt2395427 |
| 15 | Sabhya | Verma | sabhya.verma20@gmail.com | $2a$10$wYV0t3q88Kguv1EQ2E6gu1Jt0S5c2E76v1F61RWuCQkrFkZ17exl | |
+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> 
```

Movies layout on mobile devices:-

