Elevating the Fruition of Web and Mobile applications

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Abstract: There is an ascent in web applications and mobile applications in the present era. The web applications and mobile applications are more ascents because they are more alluring and have better fruition, so they rule the present era. These applications are more alluring because they are single page applications and also with the use of some web technologies like ReactJS and Angular. These applications can give the best fruition if they are rendered by server .It is here that the web technologies come in handy to develop desktop apps too. This paper gives the information or insight that fruition can be improved by the server side rendering and also tells the importance of it.

Index Terms **– Web applications, Mobile applications, Fruition, Single page applications, Server side rendering.**

I. INTRODUCTION

Single page applications like React and Angular provide good user experience. These applications offer dynamic interactions like mobile and desktop applications have, with this the interruption between the user and successive pages will be reduced. There are the techniques that retain the single pages are AngularJS, React. This technique uses more AJAX to communicate with servers without reloading or refreshing the total or full page.

- Single Page Applications are more useful to make responsive applications.
- No need of writing extra queries to download the files to the server.
- No overhead latency to switch the files from one to another.
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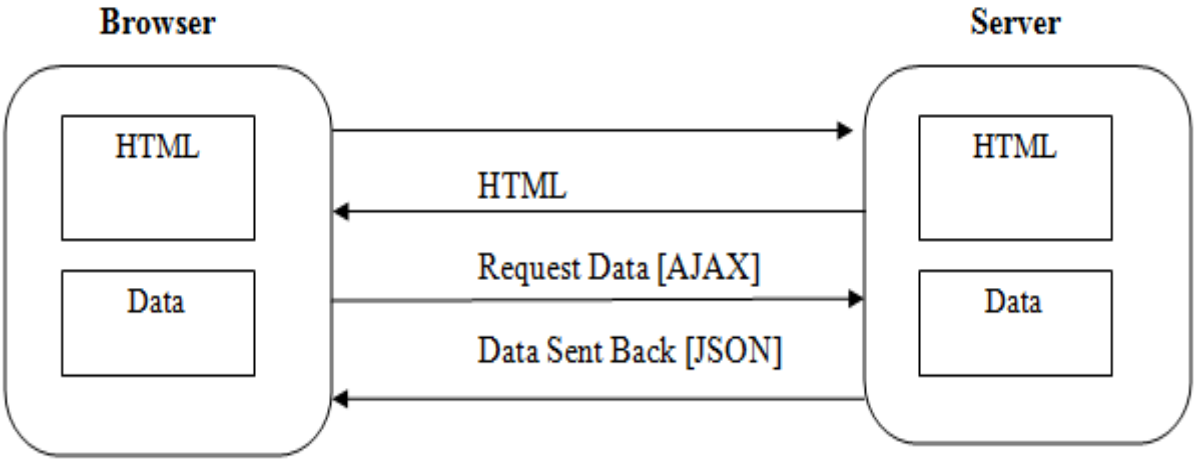

Fig.1 Single Page Application Architecture

II. SAMPLE APPLICATION

2.1 HUNGRIL WEB APPLICATION

HUNGRIL WEB APPLICATION is a website that is primarily used for food delivering. This website will allow the hotels and restaurants to increase the scope of business by reducing the labor cost involved. It also allows to quickly and easily manage online menu provided by the hotels or restaurants that can be easily browsed by the customers and place their orders.

2.2 SYSTEM ARCHITECTURE

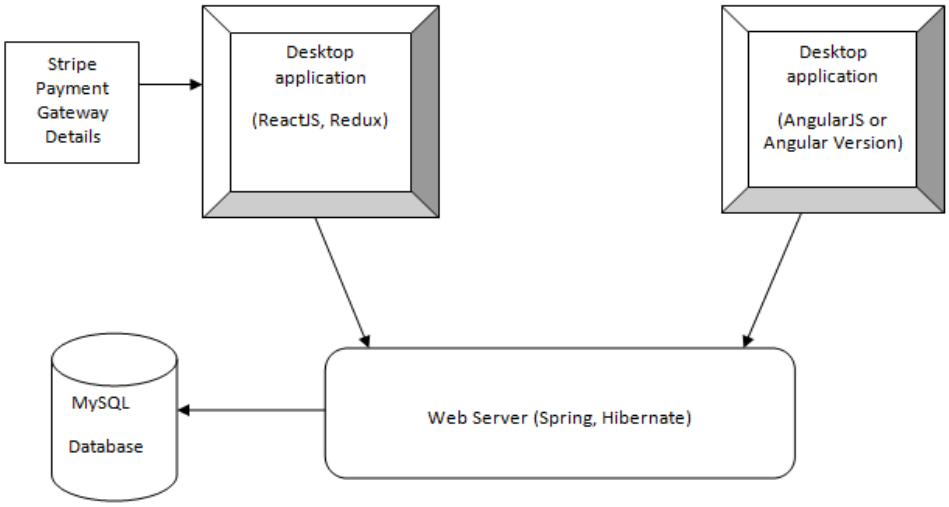

Fig 2 System Architecture

The above architecture explains about the single page application where we are using React Js and Angular Js as front-end and spring and Hibernate as Web Server. The database used for this is MySQL. For the Payment purpose We used Stripe as Payment Gateway.

2.3 IMPLEMENTATION

HTML page is the user interface and is deployed in a window. This window takes the URL of HTML page as input and renders it in the browser. HTML pages are designed using ReactJS, helps in developing the reusable components. The state and props of the component makes the communication possible between the components. ReactJS uses JSX notation i.e. JavaScript Syntax Extension for type-safe. React Router is a package that helps in providing links to the various react components.

2.4 ISSUES

With the usage of single page applications there are two issues like

- Huge time to execute the application for the first time because of no caches.
- Generation of HTML is done by running the JavaScript application, and then SEO will be the problem.
- There may be leakage in memory and it may slow down the system.

So, to overcome the issues of single page applications we use server side rendering along with that. Server Side Rendering is used in web development because it customizes the page load time. This approach helps in avoiding browser compatible issues.

2.5 SERVER SIDE RENDERING

Server Side Rendering is running the code that is on both server side and client side. In ReactJS we can directly render the components to the HTML page so that it allows better SEO (Search Engine Optimization) and gives the initial response faster. SSR (Server Side Rendering) is safe because

- Good SEO support, as users can directly view the completely rendered HTML page.
- Renders fast when there is slow internet connections or devices.

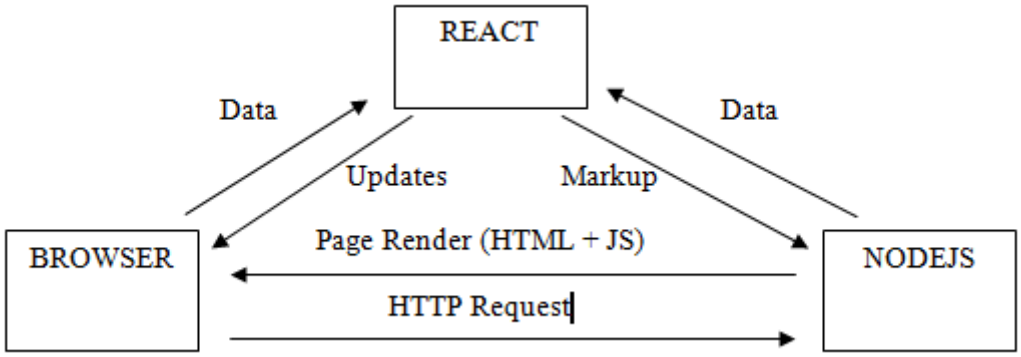

Fig 3 Server Side Rendering with ReactJS

The backend consists of database and the server that processes the user's requests, handles payment Etc. The MySQL database stores the data required for all the details and menu of the hotels and restaurants. The request is made to the server through API calls. JSON data will be the response for the API calls. Hibernate framework will map the objects to the database tables.

2.6 RESULTS

By using server side rendering in single page applications we can improve the performance of the web or mobile applications we are developing. The time complexity is also reduced when we go with the usage of server side rendering in single page applications.

3. CONCLUSION

Single page applications will provide good user experience and offers dynamic interactions without any interruptions. Single page applications provide best suited for developing web applications or mobile applications. UI is also customized to the selected theme. To solve the issues like fruition and SEO in single page applications we are using server side rendering.

REFERENCES

- https://www.codeschool.com/beginners-guide-to-web-development/single-page-applications/
- https://www.tutorialspoint.com/reactjs/
- https://safe-stack.github.io/docs/feature-ssr/
- http://softwareas.com/server-side-rendering-of-single-page-apps/