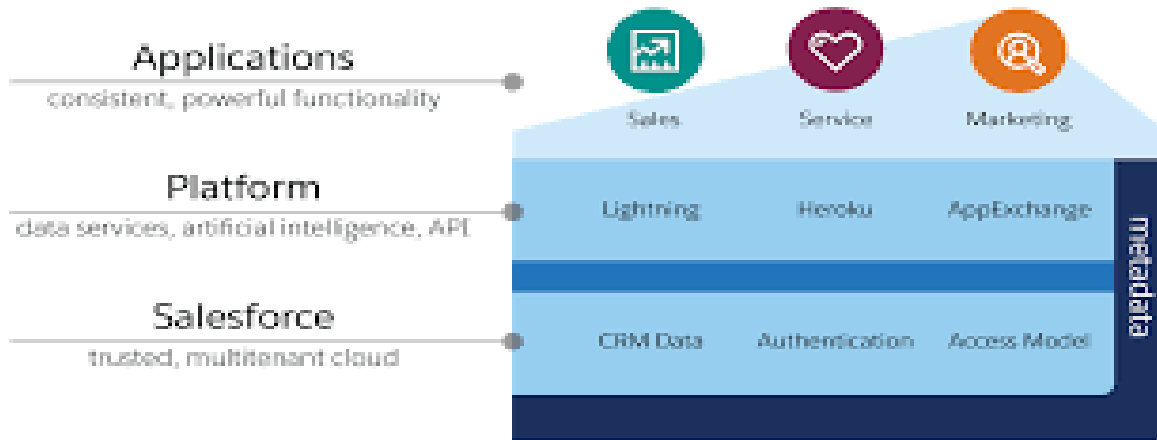


Open source framework



1. Front-end Framework:

- **React:** React is a popular JavaScript library for building user interfaces. You can use it to create a responsive and dynamic front-end for your travel approval application. Consider using libraries like Material-UI or Ant Design for UI components.

2. Back-end Framework:

- **Node.js:** Node.js is a JavaScript runtime that is commonly used for building server-side applications. You can use frameworks like Express.js to build the server and handle HTTP requests.

3. Database:

- **PostgreSQL:** PostgreSQL is a powerful, open-source relational database that can store data related to travel requests and approvals. It's known for its reliability and extensibility.

4. Authentication and Authorization:

- **Passport.js:** You can use Passport.js for handling user authentication and integrating various authentication strategies (e.g., local, OAuth, LDAP).

5. Workflow Management:

- **Node-RED:** Node-RED is a visual tool for wiring together IoT devices, APIs, and online services. It can be adapted for building workflow management in your application.

6. Email Notification:

- **Nodemailer:** Nodemailer is a popular Node.js module for sending emails. You can use it to send email notifications for travel requests and approvals.

7. Version Control:

- **Git:** Use Git for version control to manage your application's source code. Host your code on platforms like GitHub, GitLab, or Bitbucket for collaboration.

8. Containerization:

- **Docker:** Docker allows you to package your application and its dependencies into containers, making it easier to deploy and manage your application across different environments.

9. Deployment:

- **Docker Compose or Kubernetes:** Deploy your application using Docker Compose for simpler setups or Kubernetes for more complex, scalable deployments.

10. Monitoring and Logging:

- **Prometheus and Grafana:** These tools can help you monitor and visualize the performance and health of your application.

11. Testing:

- ****Jest** for JavaScript unit testing, and tools like Cypress or Selenium for end-to-end testing of the application's functionality.

12. CI/CD (Continuous Integration/Continuous Deployment):

- Use platforms like Jenkins, Travis CI, or GitHub Actions to automate the build and deployment process.

13. Documentation:

- Use tools like Swagger or ReDoc to generate API documentation for your application.

Remember to adapt and customize these tools and frameworks to your specific requirements and design the workflow for employee travel approval that suits your organization's needs. Open-source tools provide a solid foundation, and you can extend them as necessary to create a fully functional