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TEAM 4-LOOP

Non-functional Requirements

**Web server**

*Apache*

1. Very long history of reliability and performance.
2. Mass adoption means a *lot* of documentation available, and very easy to get help with any problem encountered.
3. Free/commercially friendly. No licensing fees or costs.
4. It will run on nearly every OS (i.e. Linux, Windows, MacOS).
5. Actively maintained. Latest release 2.4.10, July 2018.
6. One of the most feature-rich web servers available. Very little it cannot do.

**Front End**

*React.js*

1. Fast learning curve.

2. Reusable components.

3. Fast render with Virtual DOM.

4. Clean abstraction.

5. Flux and redux.

a. There is only one single object where you keep all the application data.

6. Great developer tools.

**Backend**

*Node.js*

1. Very fast.
   1. Node.js uses V8 engines by Google.
2. Node.js encourages sharing.
   1. With inbuilt NPM, developers can refresh, share or reuse code with ease.
3. Node.js increases productivity.
4. Event driven/single-threaded.
5. Library for everything.
   1. A simple NPM install command does nearly everything.

**Credit Card Software**

*Stripe.js*

1. Transparent pricing.
2. Simple integration with node.js.

**Automated Email**

*Sendgrid*

1. Deliverability.
   1. Avoids emails going to spam folder/rejection by mail server.
2. Throughput.
   1. Handles large volumes.
3. Analytics and Transparency
   1. Tracks email performance, read, etc.
   2. Verifies whether email has reached destination.
4. OptOuts
   1. Ability to prevent mailing to certain addresses in a separate layer, rather than relying on applications.
5. Simple integration with node.js.

**Database**

*PostgreSQL*

1. Data model.
   1. Is not just relational but object-relational. Advantageous over other open source SQL databases such as MySQL, MariaDB and Firebird.
2. Data types and structures.
   1. Extensive list of data types that PostgreSQL supports.
3. Network addresses.
   1. PostgreSQL allows storing different network address types.
4. Multi-dimensional arrays.
   1. PostgreSQL is an object-relational database, so arrays of values can be stored for most existing data types.
5. JSON support.
   1. Allows you to go schema-less in an SQL database.
6. Create new types.
   1. Use CREATE TYPE command to create new data types as composite, enumerated, range and base.