August 2016

Receipt Keeper – Implementing Restful API using Loopback framework

# introduction

Receipt Keeper is a

## Challenges and objectives

### To easily apply any text formatting you see in this outline with just a tap, on the Home tab of the ribbon, check out Styles.

### For example, this paragraph uses Heading 3 style.

# methodologies

## Development Methodologies & Team Rules

## Source Control & Change Management

### 3 Github projects are created for managing document, web server & app, android

### Github: pull request for review

### Github Wiki: for sharing information & minutes

## Issue Tracking

### Github’s issue

## Backend as a Service(BAAS)

### LoopBack

## Deployment

### Hiroku.com

#### Setup pipeline: Pull request(Github) -> Review app -> Staging -> Production

#### Buildpakcs for strongloop

## Data as a Service (DAAS)

### Mongolab

## Sharing Issues and Communication

### Slack

# architecture Decisions

## Architectural Driver

### Quality Attribute:

#### Extensibility: Extensible to other kind of client

#### Flexibility: Easy to change API

#### Performance: Quick to search

#### Security:

## Architectural Decisions

### Restful API

### Node.js

### NO SQL for storing data

### ??

# technologie

## Tesseract ; open source engine

## A fork of Tesseract which is open source project. One currently under consideration is rmthis/android-ocr which is a mobile version of the Tesseract project. The web client application will be developed using Angular framework, which is useful for development of single page web app with MVC pattern. Additionally, javascript libraries for uploading image files and visualizing spending will be used.

## Loopback

## Various platforms are considered. Due to lack of team’s skills and to minimize time to implement the server, Loopback is chosen. (TABLE1)

## Loopback is an open source Node application framework based on Express.

## It is supported by IBM and StrongLoop(Acquired Strongloop on September, 2015)

## It makes easy to create Rest API platform and managing REST API with provided tools, such as creating new API or apply ACL(access control list)

## Connect mobile devices and browser to data and services

## Set up models and create REST APIs in minutes using StrongArc

## It has Built-in API explorer to test API

## Define hasMany, belongsTo, hasAndBelongsToMany relationships, which automatically generates corresponding relational REST endpoints

## Easy authentication and authorization setup: Build-in role based access controls. oAuth user and registration models backed in. Can add custom policies using CLI or JSON

## StrongLoop Arc is a graphical tool for building, deploying, managing and monitoring LoopBack applications and APIs

## 

Table 1. Comparison of BAAS (Backend As A Service)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **LoopBack** | **Express** | **Hapi** | **Sails** | **Restify** | **Meteor** |
| **Type** | API framework | HTTP server library | HTTP server framework | Web MVC framework | REST HTTP library | Full-stack JavaScript app platform |
| **Top Features** | Enterprise connectivity, API Explorer, generators, client SDKs, websocket microservices | HTTP routing, middleware | Modularity, security | Rails familiarity, MVC | Simplicity, REST routing | Universal JavaScript, reactive rendering, websocket microservices |
| **Suitable For** | Web apps, APIs | Simple web apps | Web apps, APIs | Web apps, APIs | Simple REST APIs | Web apps |
| **Github Stars** | 5k | 19k | 4k | 10k | 3k | 28k |
| **Support** | StrongLoop | StrongLoop | N/A | N/A | N/A | Meteor Development Group |
| **Pure Node runtime** | Yes | Yes | Yes | Yes | Yes | No |
| **Client SDKs** | Angular, Browser, Node.js, iOS, Android, Xamarin | N/A | None | None | None | JavaScript, Cordova for iOS and Android, React, AngularJS |
| **Export API Definition** | Yes | With strong-remoting | None | None | None | With meteor-rest |
| **Tools** | Visual API composer, Explorer, CLI code generators | CLI app generator | Yeoman generator | Yeoman generator | Yeoman generator | CLI tool |
| **Visual API composition** | Yes | No | No | No | No | No |
| **StrongLoop Arc Build & Deploy, Monitoring, Profiling** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Extensions** | Push, File Storage, Passport, OAuth 2.0, Express Middleware | Express / Connect Middleware | Hapi Plugins |  |  | Proprietary package system and repository, npm |
| **Data sources** | In-memory/file, MongoDB, MySQL, Oracle, PostgreSQL, SQL Server, ATG, Email, REST, SOAP | None | None | In-memory, File, PostgreSQL, MySQL, MongoDB | None | MongoDB, MySQL and PostgreSQL via 3rd-party packages |
| **ACLs** | Yes | No | No | No | No | Basic allow/deny |

# 

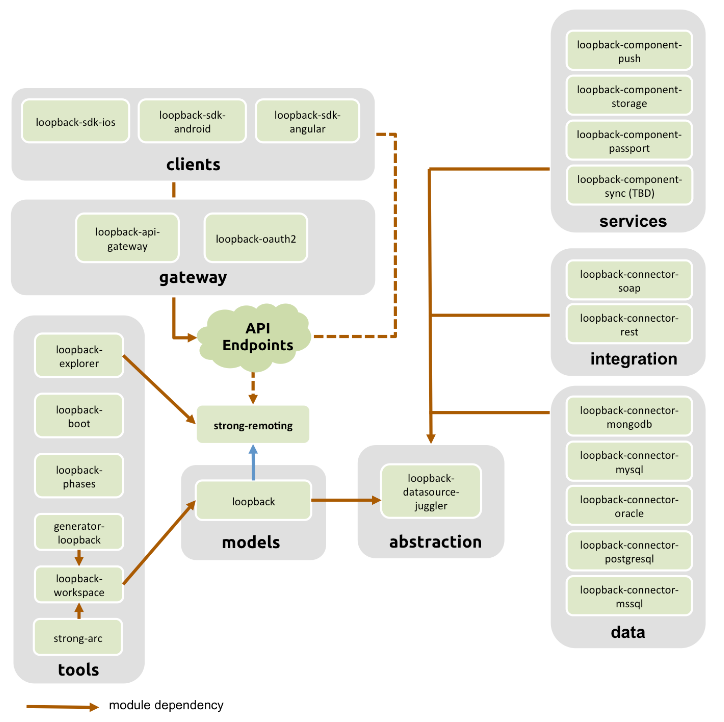
# Open Sources

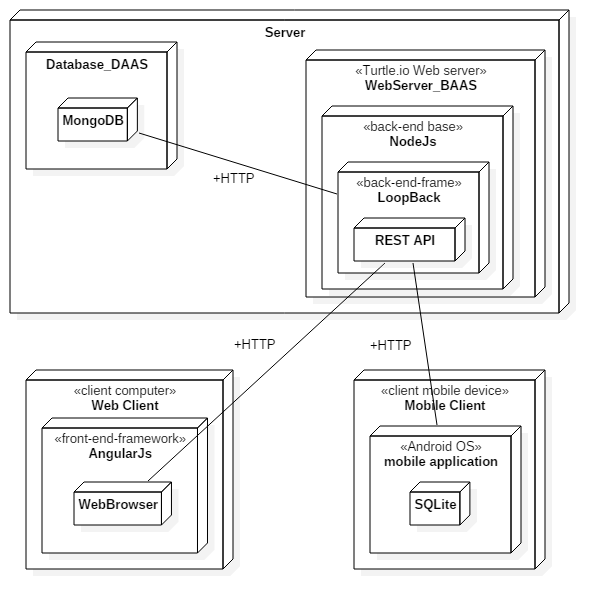
## Server

## Web Client

## Android Mobile App

# APIs





## Application Layer

### Routes

### Middleware

### Errors

### Formatters

## Domain Layer

## Need to update

## 

## Service Layer

### Data Access

### JWT (JSON Web Token)

### Authentication

### ACL(Access Control List)

## Foundation Layer

### Database

### 

# conclusion

Want to insert a picture from your files or add a shape, text box, or table? You got it! On the Insert tab of the ribbon, just tap the option you need.

Find even more easy-to-use tools on the Insert tab, such as to add a hyperlink or insert a comment.

# References

http://loopback.io/

# Glossary

# A

ACL: Access control list, a list associated with an object that identifies all the subjects that can access the object and their access rights.  See [Authentication, authorization, and permissions](https://docs.strongloop.com/display/LB/Authentication%2C+authorization%2C+and+permissions).

# B

**Buildpacks**

Buildpacks are scripts that are run when the app is deployed. They are used to install dependencies for the app and configure the environment.

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# C

# D

**data source**

A data source connects with specific database or other back-end system using a connector.

# E

# F

# G

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# V

# W

# X

# Y

# Z

# used Opensource lists

android-ocr : <https://github.com/rmtheis/android-ocr>

Tesserat: https://github.com/tesseract-ocr/tesseract

LoopBack: https://loopback.io/