# Abstract

# Introduction

# Definitions

Dictionary API – a predefined set of GET/POST requests to a dictionary’s web service (for Oxford API visit <https://developer.oxforddictionaries.com/documentation>).

Application – Android application for searching words and managing their lists.

Web server – written in Javascript + NodeJS and running on Cloud9 at <https://ide.c9.io/opryshko/olympia> to manage users and their keys.

Keyword – a word usually in an infinitive form that represents the entry in a dictionary.

Category – a user defined category with an arbitrary name that allows grouping words into them. Can be anything the user can think of to group words – sounds, emotions, animals, plants, verbs, books etc.

Vocabulary – a single storage in the application for selected by user words and their categories. Can be saved and restored.

User – unique client of Olympia application. Must be registered and logged in to use the app.

Login token – a unique key that is hold by application after successful login. If missing from the phone, the user needs to login on the server to continue using the app. Reflects the idea of session in a web browser.

Olympia key – a unique key that allows the user to use Olympia services. Unlike login token can be managed by administrators to only allow users who subscribed for paid services.

Administrator – a privileged user on the web server to issue keys, assign them to users and delete the keys.

Local database – SQLite database (Room wrapper) on Android devices. Connected to application.

Server database – MongoDB database hosted on [https://mlab.com](https://mlab.com/) to store users and their keys. Connected to server part.

Quiz – a sequence of tasks where the user has to spell correctly word to given definitions. The more answers are correct the higher is the score.

# High-level design

# Support email:

[olympia8225@gmail.com](mailto:olympia8225@gmail.com). Used to send emails to users when they forget the passwords.

# Libraries used:

Retrofit – http requests

ReactiveX – observer pattern

Tesseract – optical recognition of text

Transitions everywhere – beautiful animations

# Resources:

Launcher icon generator: <https://romannurik.github.io/AndroidAssetStudio/icons-launcher.html>

Icon resources: <https://material.io/tools/icons>

Color picker: <http://www.color-hex.com/>

# Articles:

Retrofit2 - <https://code.tutsplus.com/tutorials/sending-data-with-retrofit-2-http-client-for-android--cms-27845>

Tabs adapter - <http://www.gadgetsaint.com/android/create-viewpager-tabs-android/#.WxmxFYpKguV>

Swipe adapter - <https://medium.com/@ipaulpro/drag-and-swipe-with-recyclerview-b9456d2b1aaf>

Room database - <https://codelabs.developers.google.com/codelabs/android-room-with-a-view/#0>