

Tech talk with UMP

Mobile application development
By Wan Muzaffar Wan Hashim

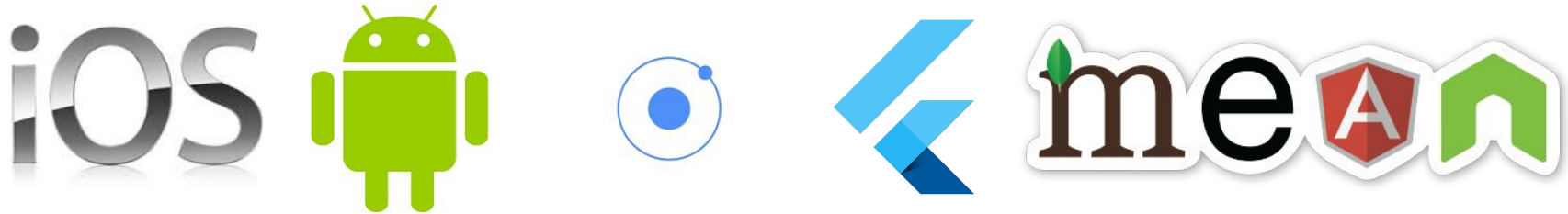


Wan Muzaffar

Founder of MDR-Tech, Co-founder of Anak2U

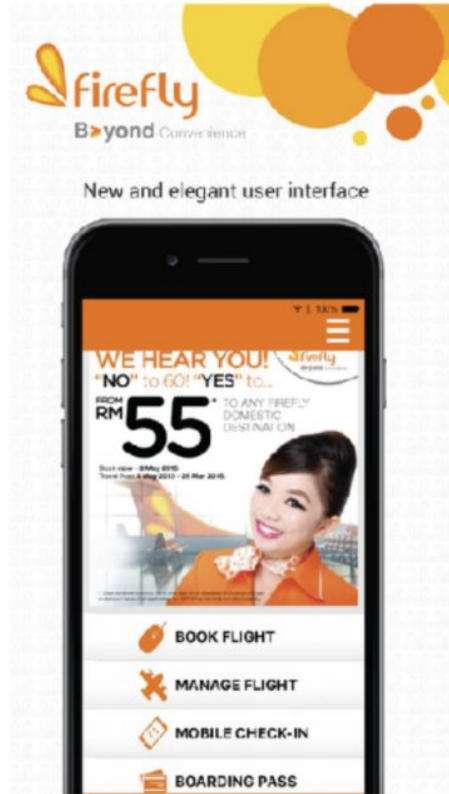
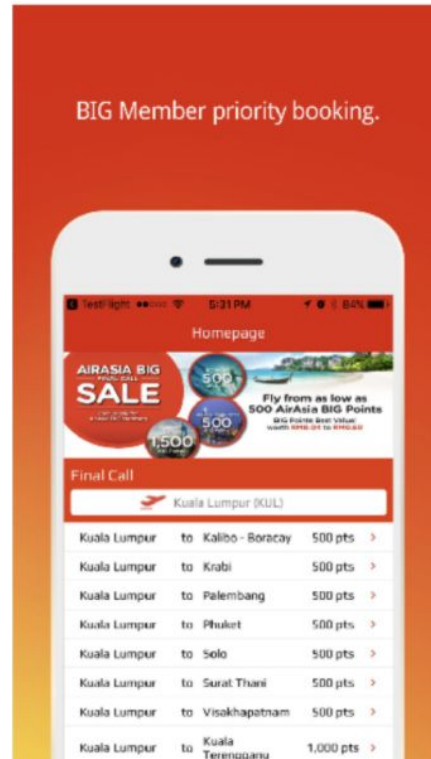
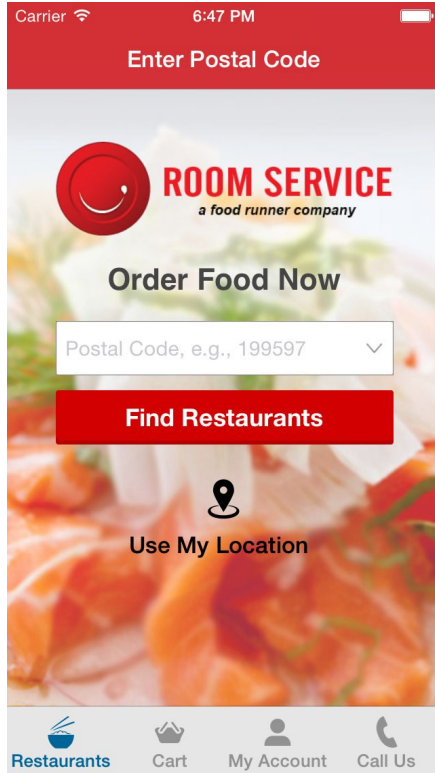
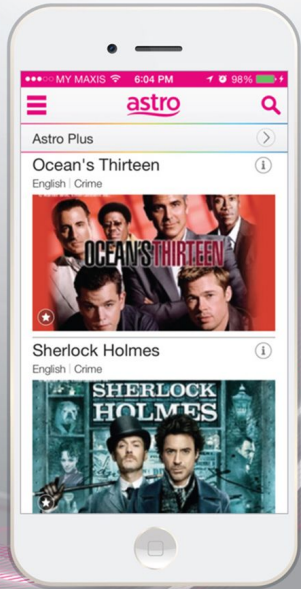
Worked with mobile industry since 2011

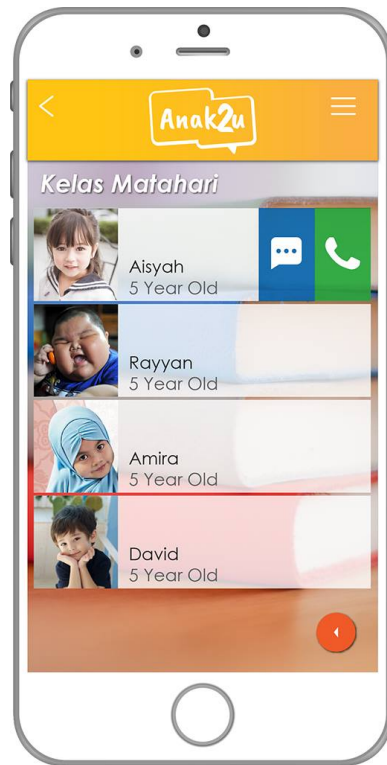
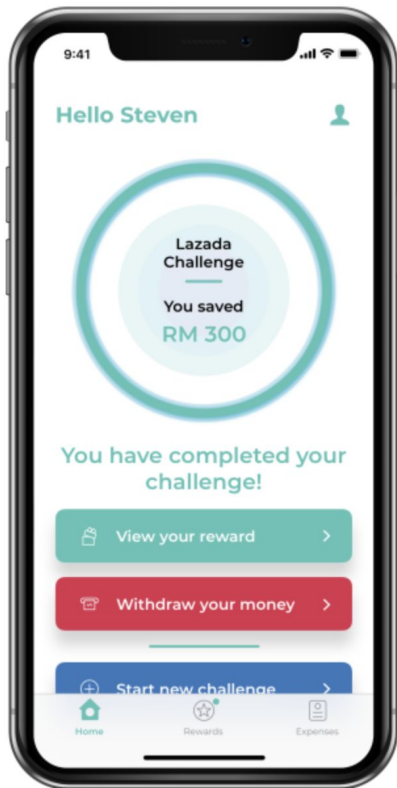
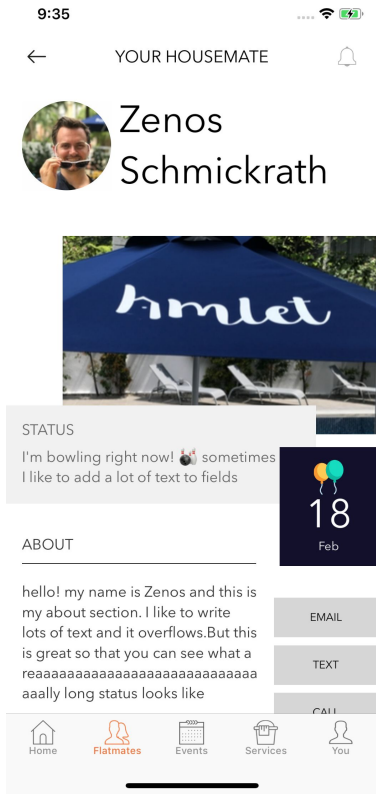
Different industry: M-Commerce, Newsfeed, Media Broadcasting, Food Delivery ,
Airline,Loyalty, Education.



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App Development

- A mobile application is a software application designed to run on smartphones, tablet computers and other mobile devices.
- Users on smartphones typically check the news, weather, email or their social networks. They have a choice between the mobile web version or a specially-created mobile app.

Mobile App Dev: Current State

Native Development	Crossplatform Development
<ul style="list-style-type: none">● Android - Kotlin or Java -2● iOS - Swift or Objective C (Mac) - 2 (need to have mac)	<ul style="list-style-type: none">● Flutter - Dart (2018) - Google -2● React Native - JS (2016..) - Facebook -3● Ionic - JS (2013...) - 1● Xamarin - .NET

Mobile App Types

- **Native**
 - Programmed using Swift/Objective C on the iPhone or using Java/Kotlin on Android devices.
- **Crossplatform**
 - Mix between these two types of mobile applications.
 - Normally based on web programming language, eg: HTML, CSS, Javascript, Dart
 - Built once to be run on Android and iOS.
- **Web Apps / Progressive Web Apps.**
 - Web based.
Runs in the phone's browser.
 - Can have native features based on HTML5

Why Native is Better?

Make use of all the phone's features such as the camera, geolocation, user's address book, etc.

Do not need to be connected to the Internet to be used.

Specific to the mobile device it is run on since it uses the features of that specific device.

Big support of the community and distributor.



This repository

Search

Pull requests

Issues

Marketplace

Explore



ionic-team / cordova-plugin-ios-keychain

forked from shazron/KeychainPlugin

Watch 10

Star 40

Fork 88

Code

Issues 4

Pull requests 1

Projects 0

Wiki

Insights

Apache Cordova (PhoneGap) plugin

57 commits

2 branches

2 releases

11 contributors

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

This branch is 26 commits ahead, 4 commits behind shazron:master.

Pull request

Compare

mlynch	Merge pull request #25 from danielsog/patch-1	Latest commit 036aa60 on 6 Mar
example	Update index.js	a year ago
src/ios	Fixing security issue	2 months ago
www	fix(set): make useTouchID truly optional	a year ago
.gitignore	Updated to use Cordova 2.2.0 and made it plugininstall-able	6 years ago
LICENSE	Updated to use Cordova 2.2.0 and made it plugininstall-able	6 years ago
README.md	refactor(): rename drifttyco	11 months ago
package.json	Adding package.json for Cordova 7 compat	7 months ago
plugin.xml	Moving files	2 years ago

README.md

Why Crossplatform is Better?

One code for both platform, iOS and Android.

Support from big company's technology:
Eg: Google and Facebook.

Shorten developer time and initial cost.

(Might be high on maintenance cost)

Suitable for prototyping, MVP or startup development.

When to choose what?

Native	Crossplatform
2 developers for 3 months $5000 \times 2 \times 3 = 30\ 000$	1 developer for 3 months $\frac{2}{3}$ or $\frac{3}{4}$ of the native price = 20 000 - 23000
Take more time - 1 developer = 6 months	Faster = 1 developer 4 months..
Mature and stable technology (2009)	New , divided and unstable
Lower maintenance cost	Higher maintenance cost
Device features (camera, location, push notification, qr code scanner, real time database, in app browser...) 4 and above... <ul style="list-style-type: none">- Recency of device features , face recognition, face id- Security sensitive	

Theory in Project Management



Quiz - Crossplatform or Native? If Hybrid which platform you think? Why?

AirAsia/Firefly - Native / channel . an existing business

Astro Go - Native /security... channel (distribution right in Media)

Astro Awani - Crossplatform / Simple app - Free to air / encrypted chair

Maybank2U - Crossplatform/React Native - It should be on Native (it should use native)

MySejahtera - Crossplatform - they need it fast

Selangkah - PWA - they need it fast

Crossplatform

React Native and Flutter -

We use JS or Dart, and it will **bring out** native UI Element.

Ionic / PWA =

HTML, CSS and JS, and the page will be loaded in a Webview (small seconds of white appear)

Mobile App Development: Environments

-
- Most platforms have an **SDK** that can be downloaded and built against.
 - Every platform has an **emulator** that can be used to test the apps.
 - Most emulators are configurable to match a variety of mobile devices.
 - Various screen sizes, memory limitations, tablets, etc.
 - In practice, emulators are quite limited.
 - **IDE: Integrated Development Environment** that provides tools to allow a developer to write, test and deploy apps into the target platform environment.

XCode IDE for iOS Development

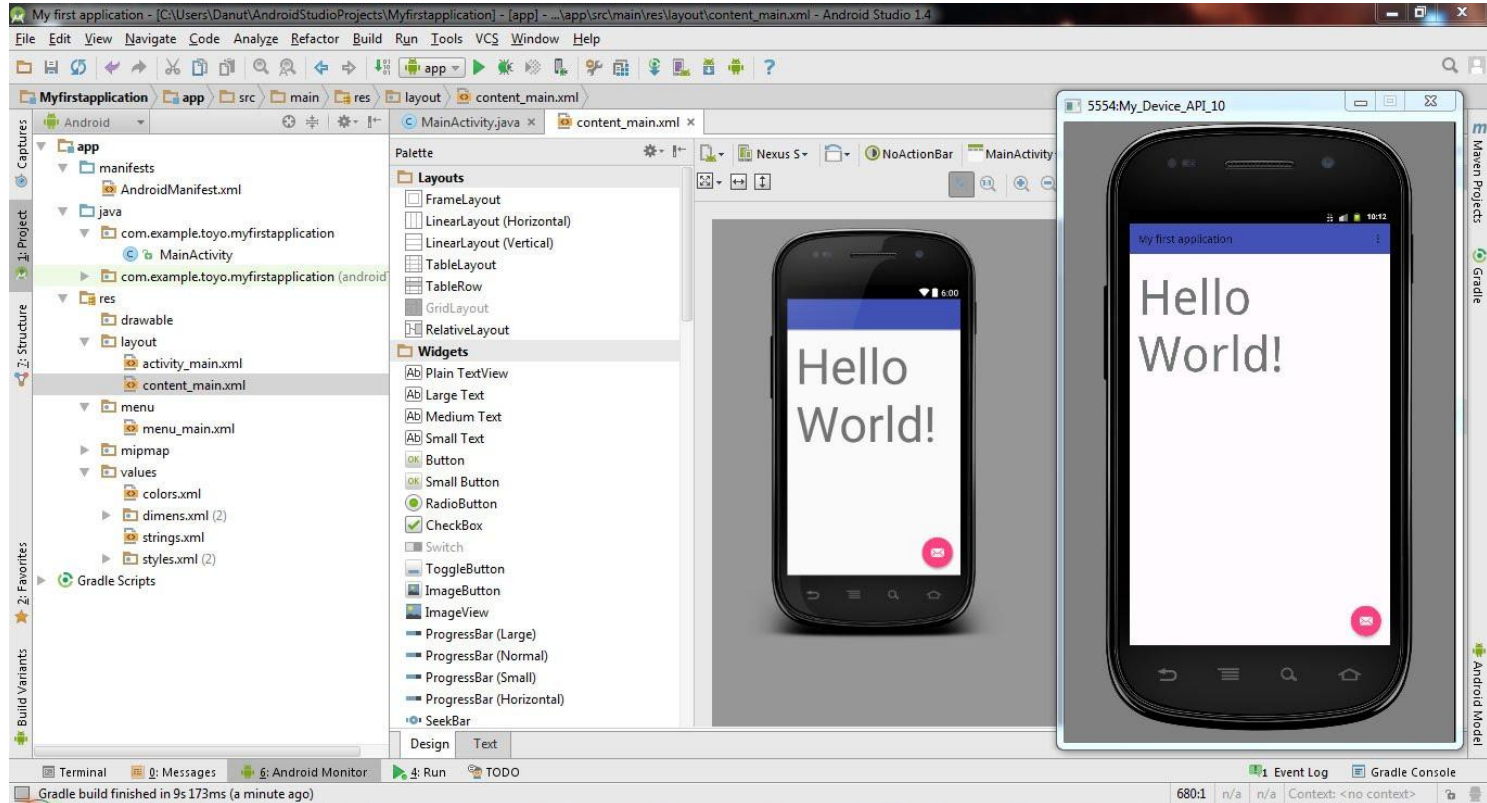
The screenshot displays the Xcode IDE interface for an iOS project named "memori". The top menu bar includes options like File, Edit, View, Find, Navigate, Editor, Product, Debug, Source Control, Window, and Help. The status bar at the top right shows the date and time as "Mer. 11:55".

The interface is divided into several panes:

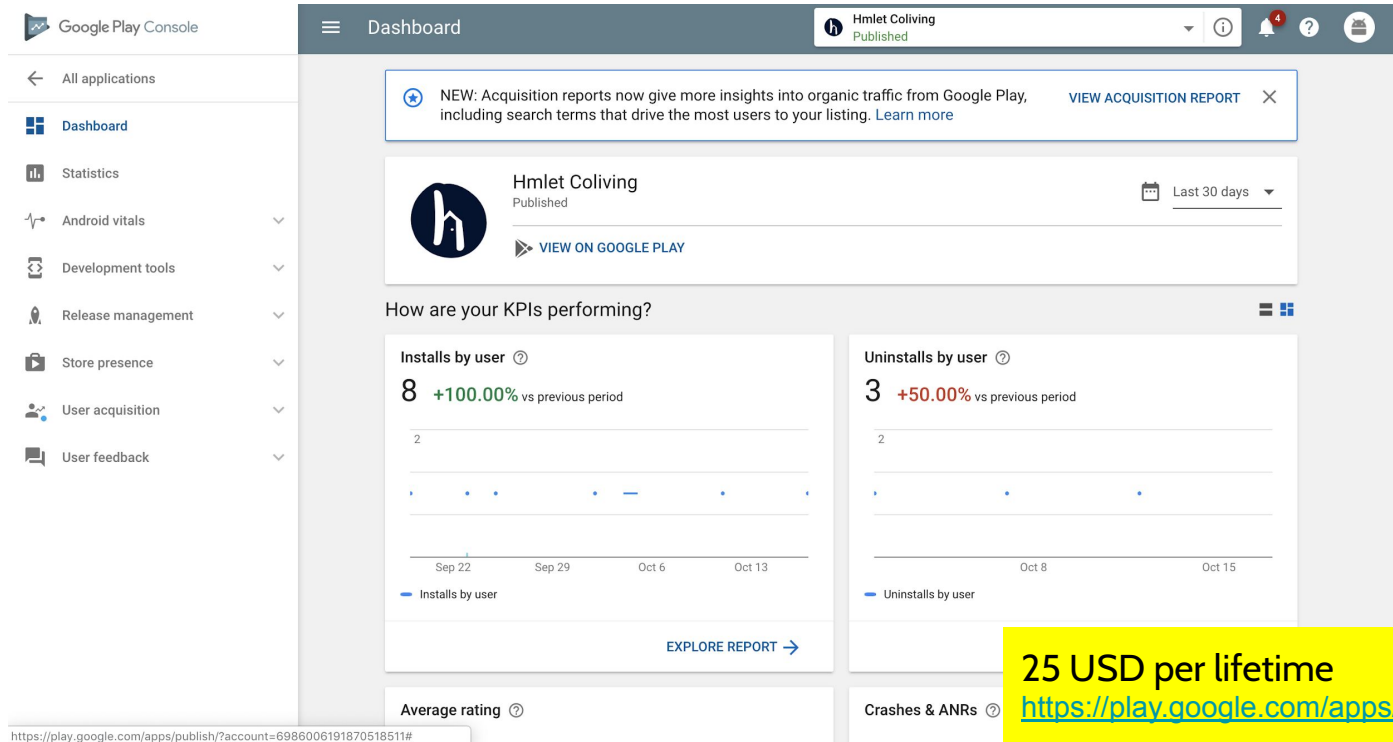
- Left Pane (Project Navigator):** Shows a hierarchical view of the project files, including folders like "Resources", "Extensions", "Quiz", "Book", "Domain", "AddBook", "Main", "Walkthrough", "AppDelegate.swift", "Main.storyboard", "Assets.xcassets", "LaunchScreen.storyboard", "Info.plist", "memoriTests", "Products", "Pods", and "Frameworks".
- Middle-Left Pane (Document Outline):** Displays the structure of the selected storyboard, "Main.storyboard", with scenes such as "Walkthrough View Controller Scene", "Page View Controller Scene", "Walkthrough Page Content View Controller S...", "memori Scene", "New collection Scene", "Template Scene", "Navigation Controller Scene", "Title Scene", "Quiz Scene", "Page View Controller Scene", and "Title Scene".
- Right Pane (Canvas):** Shows a visual representation of the storyboard scene, featuring a green button labeled "GLOBAL QUIZ".
- Right Pane (Code Editor):** Displays the Swift code for the `MainViewController` class. The code includes imports for `UIKit`, `Amplitude_iOS`, and `GoogleMobileAds`. It defines the `MainViewController` class as a `UIViewController` with several outlets and a `books` property. The `viewDidLoad` method is overridden to initialize the UI and log an event.
- Right Pane (Properties Inspector):** Shows the properties of the selected UI element, including "Bar Button Item" and "Bar Item" settings.
- Bottom Pane (Documentation):** Provides definitions for "View Controller", "Storyboard Reference", and "Navigation Controller".

```
1 //
2 // MainViewController.swift
3 // memori
4 //
5 // Created by Joan Zapata on 01/09/2016.
6 // Copyright © 2016 Joan Zapata. All rights reserved.
7 //
8
9 import UIKit
10 import Amplitude_iOS
11 import GoogleMobileAds
12
13 class MainViewController : UIViewController {
14
15     @IBOutlet var tableView: UITableView!
16     @IBOutlet var globalCountLabel: UILabel!
17     @IBOutlet var globalScoreLabel: UILabel!
18     @IBOutlet var emptyView: UIView!
19
20     fileprivate var interstitial: GADInterstitial?
21     // Insert Outlet, Action, or Outlet Collection
22
23     var books = Store.instance.books()
24
25     fileprivate var isQuizReturnOnNextAppear = false
26
27     override func viewDidLoad() {
28         super.viewDidLoad()
29
30         Amplitude.instance().logEvent("Entered Main View")
31
32         // Set the title with custom font. Doing so in the storyboard
33         // will set the font for all navigation bars so I had to
34         // a custom title view for this one.
35         let label = UILabel(frame: CGRect(x: 0, y: 0, width: 120, height: 20))
36         label.text = "Memori"
37         label.font = UIFont(name: "LeckerliOne-Regular", size: 24)
38         label.textAlignment = .center
39         label.textColor = UIColor(colorLiteralRed: 92/255, green: 125/255, blue: 255/255, alpha: 1)
40         label.clipsToBounds = false
41         navigationItem.titleView = label
42
43         tableView.dataSource = self
44         tableView.delegate = self
45     }
46 }
```

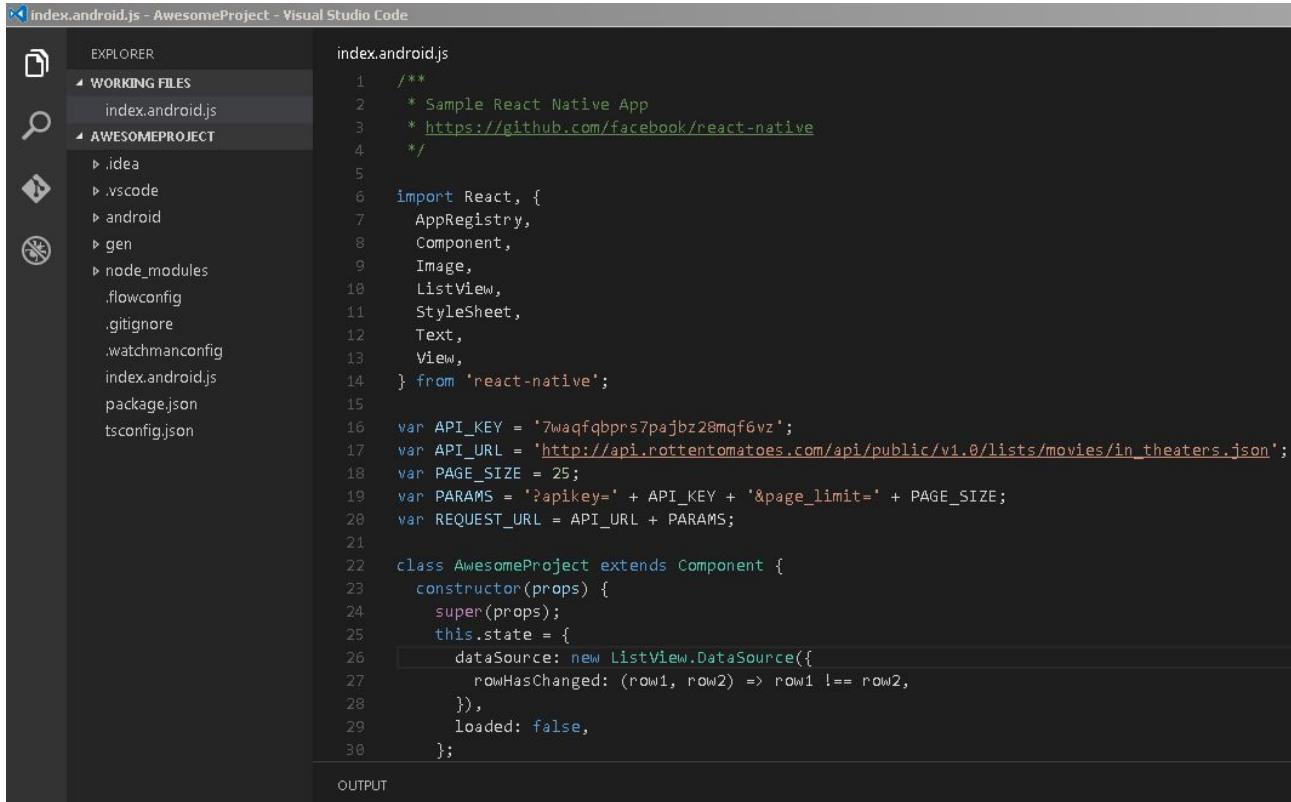

Android Studio and Android Emulator



DEVELOPER PROGRAM



Visual Code for Hybrid Development



```
index.android.js - AwesomeProject - Visual Studio Code

EXPLORER
├── WORKING FILES
│   └── index.android.js
├── AWESOMEPROJECT
│   ├── .idea
│   ├── .vscode
│   ├── android
│   ├── gen
│   ├── node_modules
│   ├── .flowconfig
│   ├── .gitignore
│   ├── .watchmanconfig
│   ├── index.android.js
│   ├── package.json
│   └── tsconfig.json

index.android.js
1  /**
2   * Sample React Native App
3   * https://github.com/facebook/react-native
4   */
5
6  import React, {
7    AppRegistry,
8    Component,
9    Image,
10   ListView,
11   StyleSheet,
12   Text,
13   View,
14 } from 'react-native';
15
16 var API_KEY = '7waqfbprns7pajbz28mqf6vz';
17 var API_URL = 'http://api.rottentomatoes.com/api/public/v1.0/lists/movies/in_theaters.json';
18 var PAGE_SIZE = 25;
19 var PARAMS = '?apikey=' + API_KEY + '&page_limit=' + PAGE_SIZE;
20 var REQUEST_URL = API_URL + PARAMS;
21
22 class AwesomeProject extends Component {
23   constructor(props) {
24     super(props);
25     this.state = {
26       dataSource: new ListView.DataSource({
27         rowHasChanged: (row1, row2) => row1 !== row2,
28       }),
29       loaded: false,
30     };

```

DEVELOPER PROGRAM

iOS Developer Program

Individual
\$99 / Year

For an individual developer who will be creating iOS apps for distribution on the App Store.



iOS Developer Program

Company
\$99 / Year

For a company with a development team who will be creating iOS apps for distribution on the App Store.

Note: A D-U-N-S Number is required.



iOS Developer Enterprise Program

\$299 / Year

For a company who will be creating proprietary, in-house iOS apps.

Note: A D-U-N-S Number is required.



iOS Developer University Program

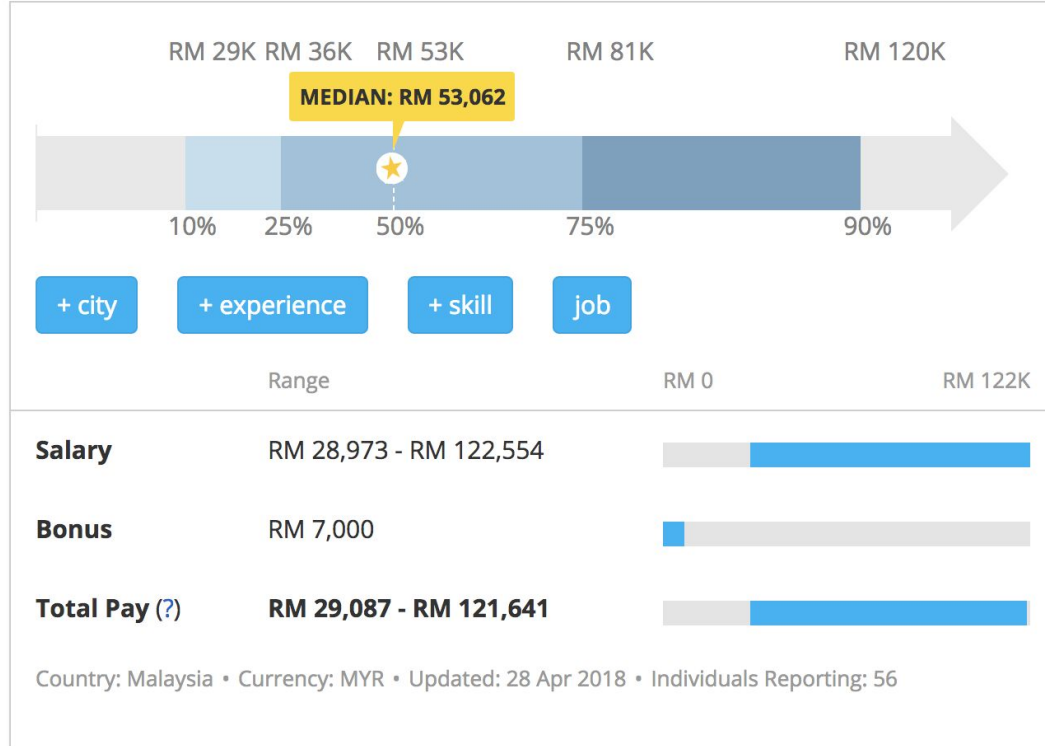
Free

For higher education institutions looking to introduce iOS development into their curriculum.



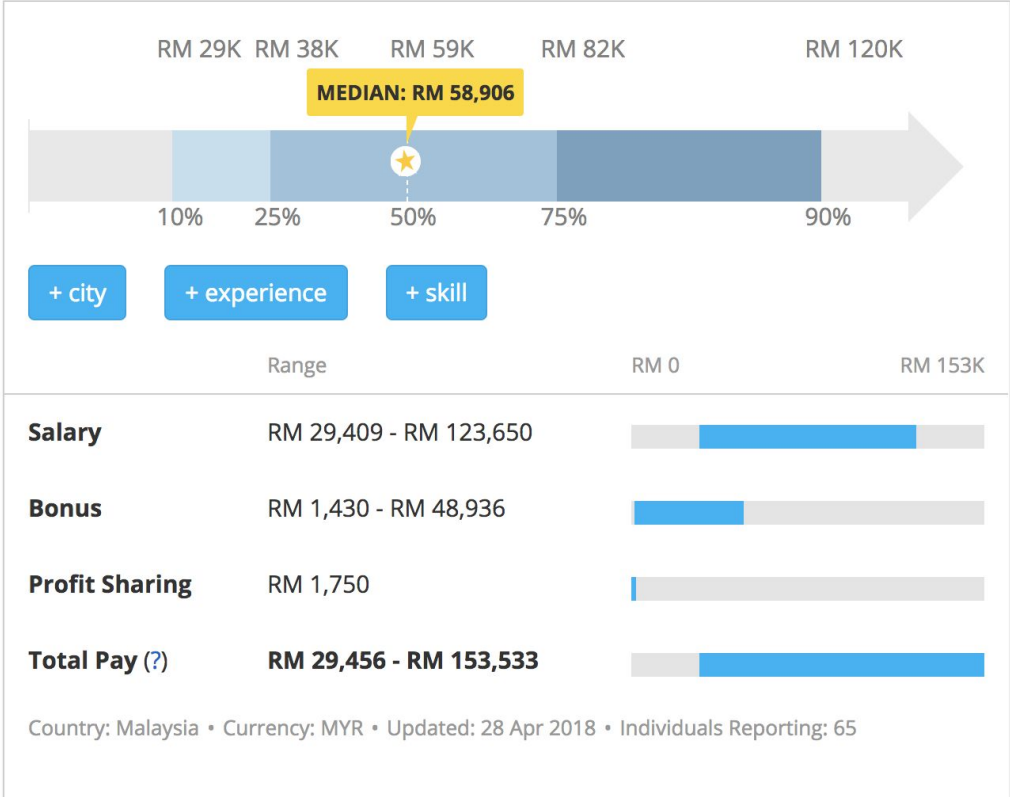
Android Software Developer Salary (Malaysia)

The average pay for an Android Software Developer is RM 54,454 per year. Most people move on to other jobs if they have more than 10 years' experience in this career.



iOS Developer Salary (Malaysia)

The average pay for an iOS Developer is RM 57,227 per year. People in this job generally don't have more than 10 years' experience. A skill in iOS is associated with high pay for this job.



Material Design

Material System

Introduction

Material studies

Material Foundation

Foundation overview

Environment

Layout

Navigation

Color

Typography

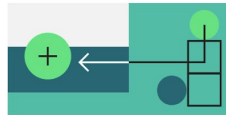
Iconography

Shape

Motion

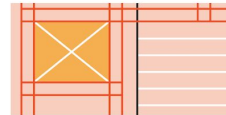
Interaction

Up next



COLOR

The Color System



LAYOUT

Responsive Layout Grid



TYPOGRAPHY

The Type System



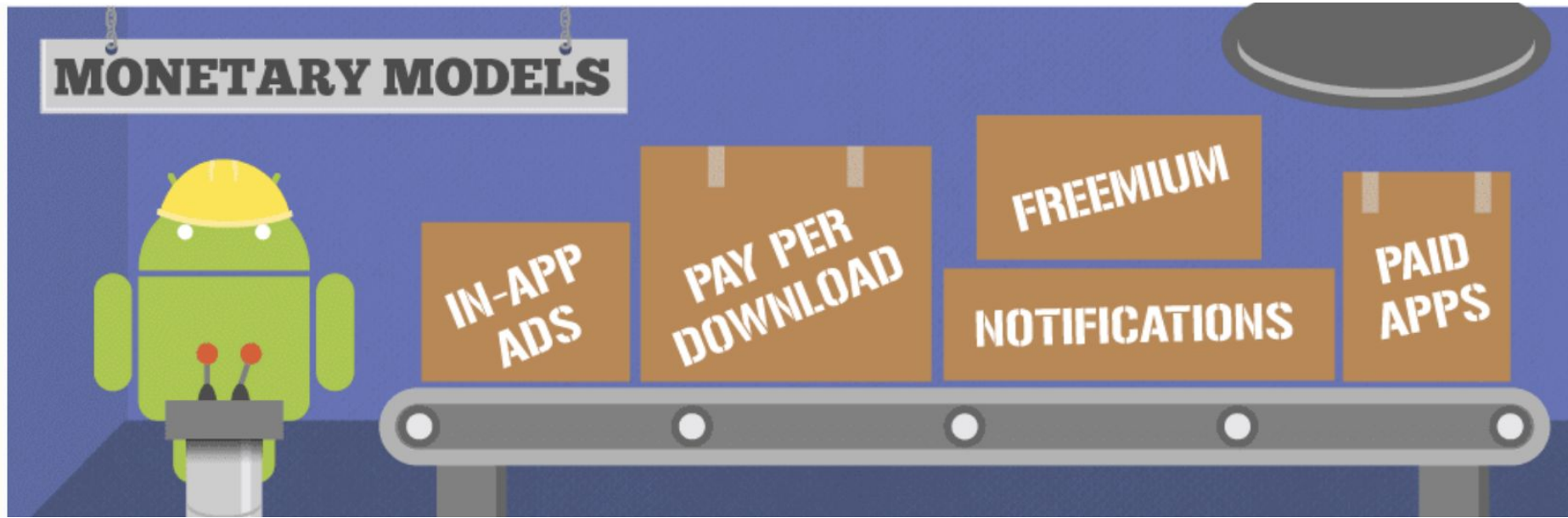
Material is an adaptable system of guidelines, components, and tools that support the best practices of user interface design. Backed by open-source code, Material streamlines collaboration between designers and developers, and helps teams quickly build beautiful products.

[GitHub](#) / [Twitter](#) / [YouTube](#)

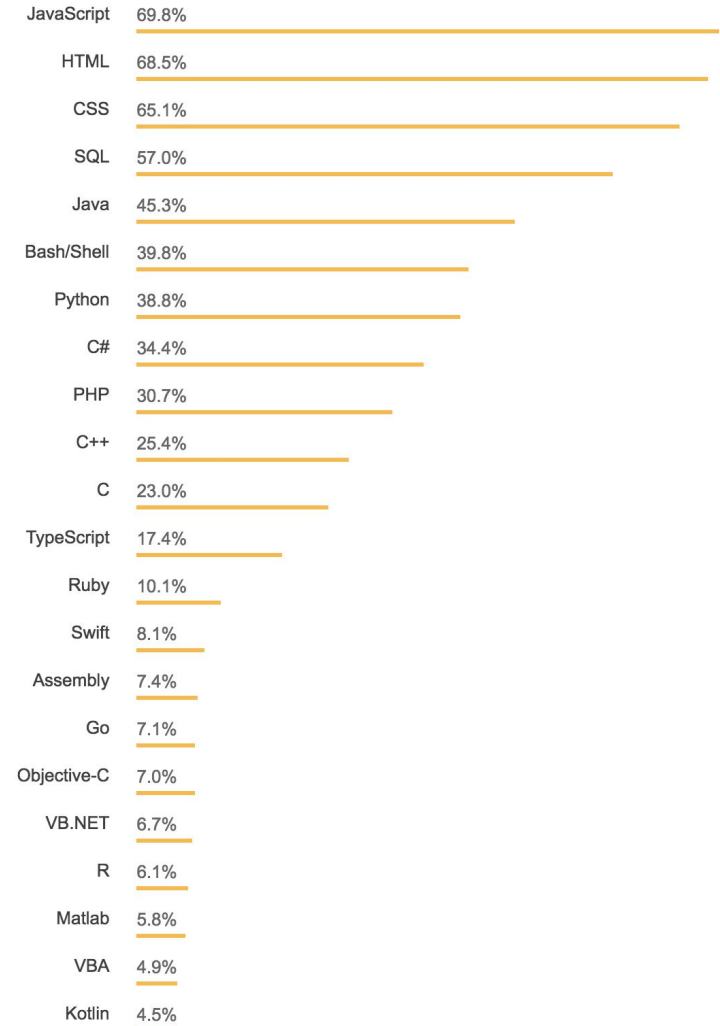
Google

[Privacy Policy](#) [Terms of Service](#) [Feedback](#)

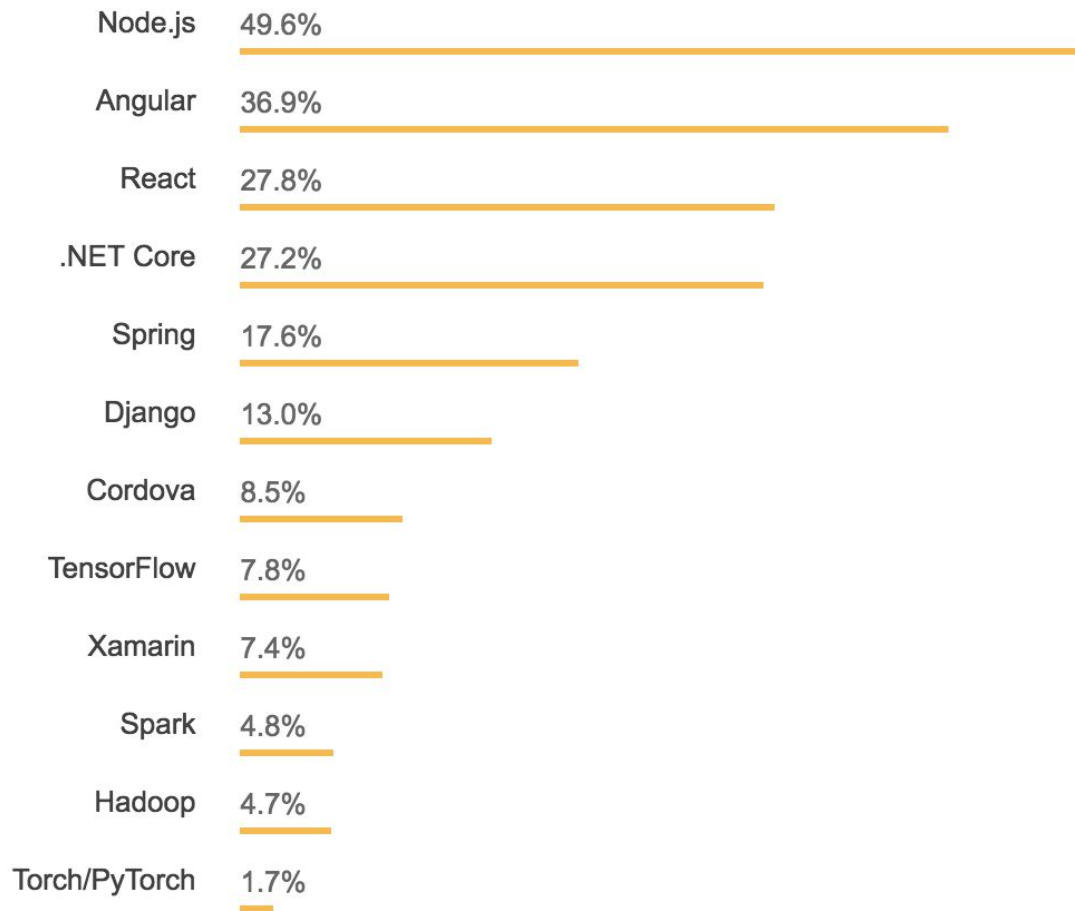
Business model



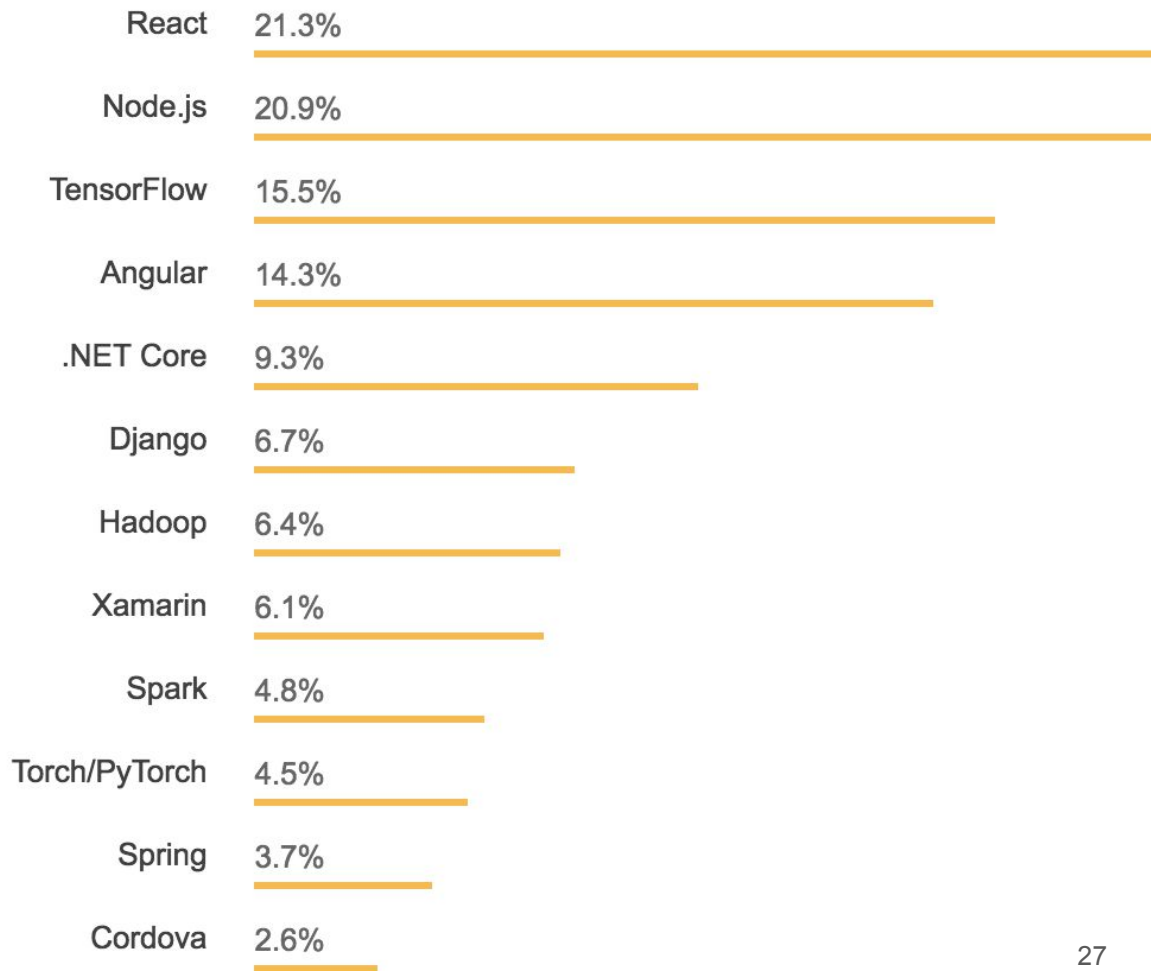
Most popular programming language (SO)

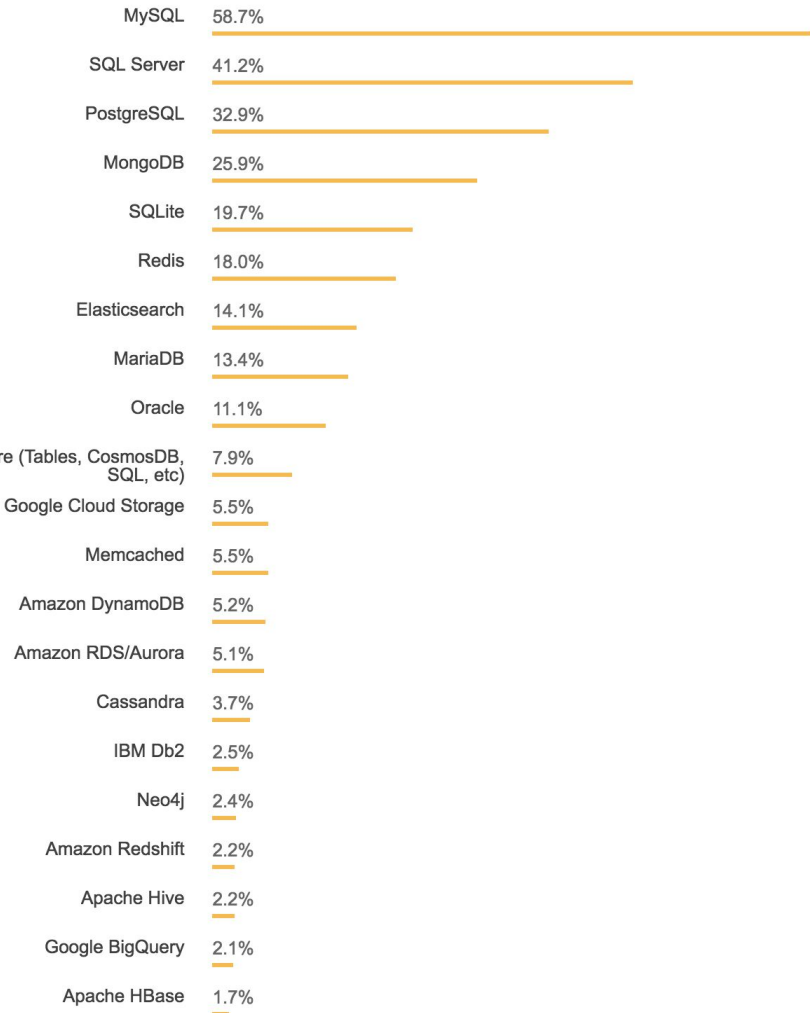


Most popular framework (SO)



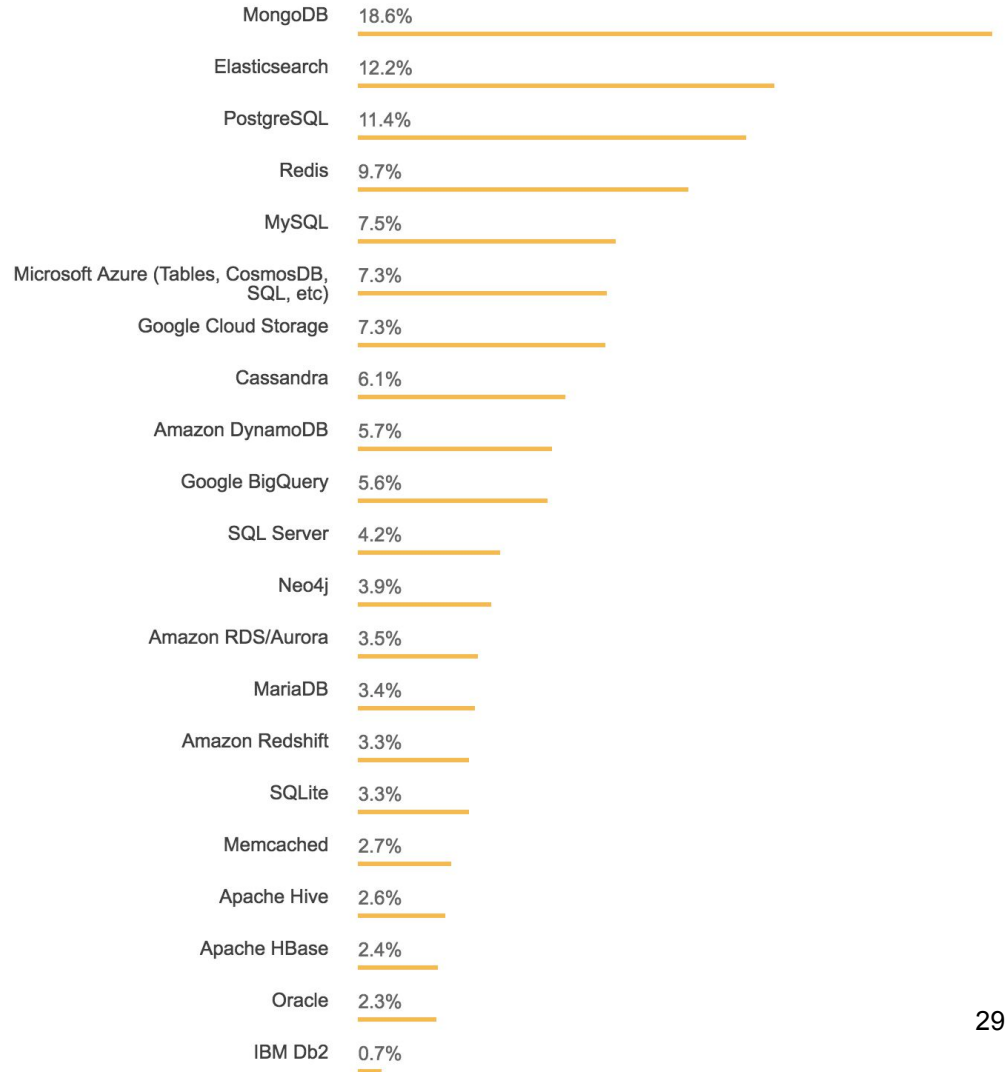
Most wanted framework (SO)





Most used database . (SO)

Most wanted database . (SO)



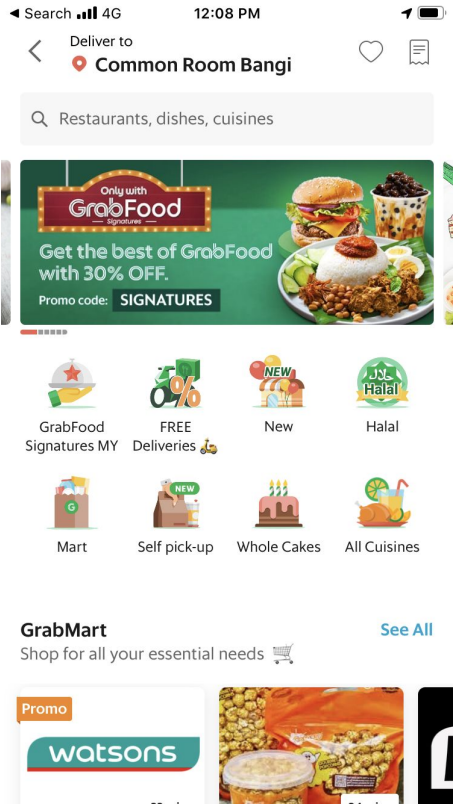
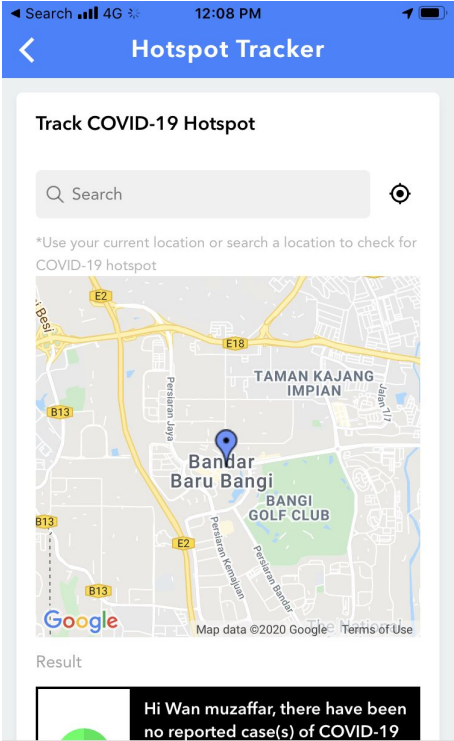
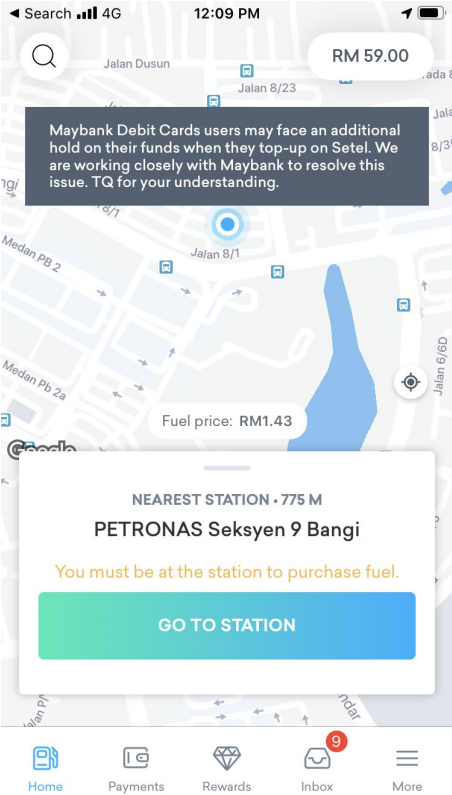
Location Aware Application

Geofencing - Setting up perimeter of location and perform a certain actions when user are within the perimeters

Geolocation - Getting latitude and longitude and customize offering based on the latitude longitude retrieved.

Indoor Location - To track location inside a closed building, normally with help of devices.

Example : Location aware application



Example : Indoor location example

NEWS TECH

Malaysia is the first SEA country to get Waze underground tunnel mapping

BY NIC KER 12:03 PM, 4 MARCH 2020 [LEAVE A COMMENT](#)

2.9K
SHARES



Days since MCO

MCO started on Mar 18, 2020

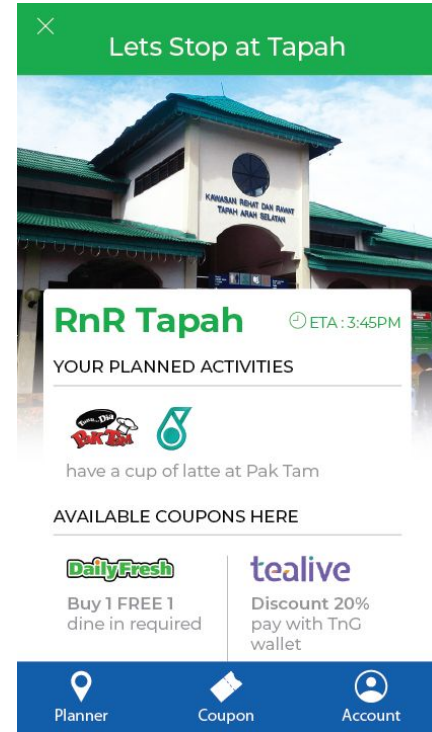
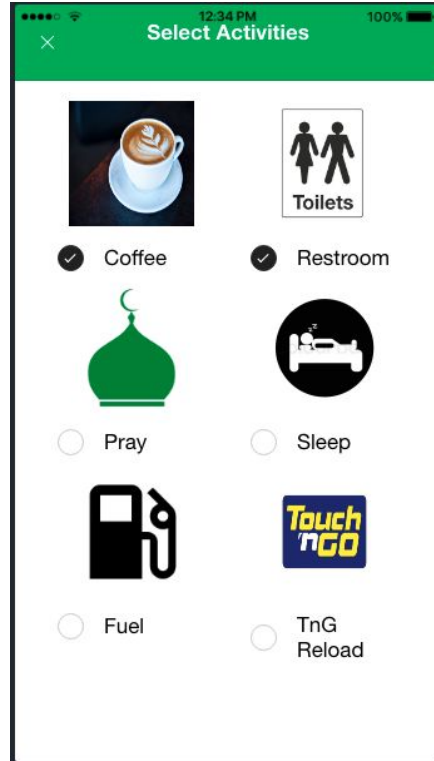
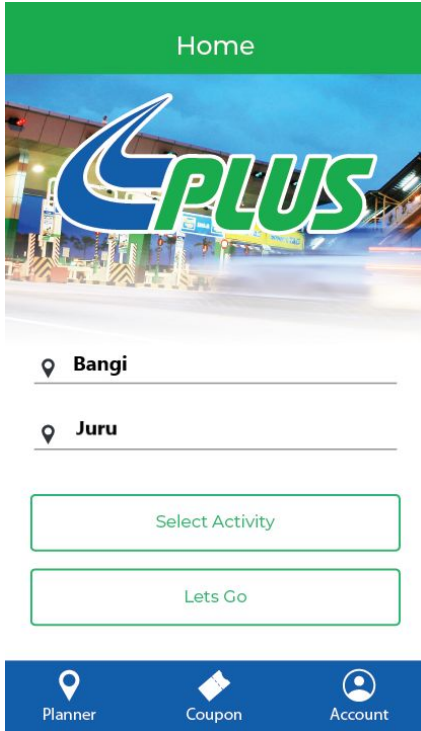
82
DAYS

Days till MCO lifted

MCO expected to lift on Aug 31, 2020

-85
DAYS

PLUS Hackathon 2018 winning idea



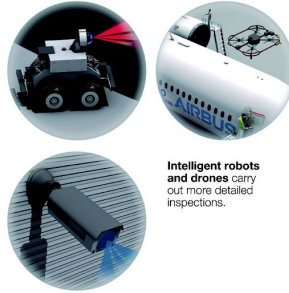
<https://www.youtube.com/watch?v=NN7Knf-TBMU>

HANGAR OF THE FUTURE DEMONSTRATOR

Less time in the hangar, more time in the air

AUTOMATIC INSPECTION AND DATA COLLECTION

Upon entering the hangar, cameras perform a complete scan of the aircraft to inspect it for damage.



All aircraft-related data is transferred to the data management system.

Intelligent robots and drones carry out more detailed inspections.

AUTOMATED TASK PLANNING AND REAL-TIME SUPERVISION

Data is automatically analysed and broken down into tasks. Tasks are assigned to workers, who receive real-time notifications on their mobile devices.



A state-of-the-art interactive control room displays the status of maintenance tasks as they are performed, allowing task planning to be continuously optimised. Customers can also track the progress of the maintenance being performed.



STREAMLINED MAINTENANCE

Workers' wearable devices provide access to all necessary information to perform tasks including technical and training documentation. Devices are equipped with augmented reality capabilities that help them perform and report on tasks, thus eliminating the need for paper.

The mobile devices connect to other task-specific smart tools, such as Airbus' Line Tool, which allow workers to perform non-destructive testing of composite airframes without affecting the fuselage or wing area being examined. The results are integrated seamlessly into the overall maintenance plan.



3D printers are used to print special maintenance tools and/or spare parts on the spot if needed.

DATA STORAGE & PREDICTIVE MAINTENANCE

The aircraft is released and maintenance data is digitally archived and stored where it's needed: inside the aircraft, hangar, or at the airline or manufacturer's premises.

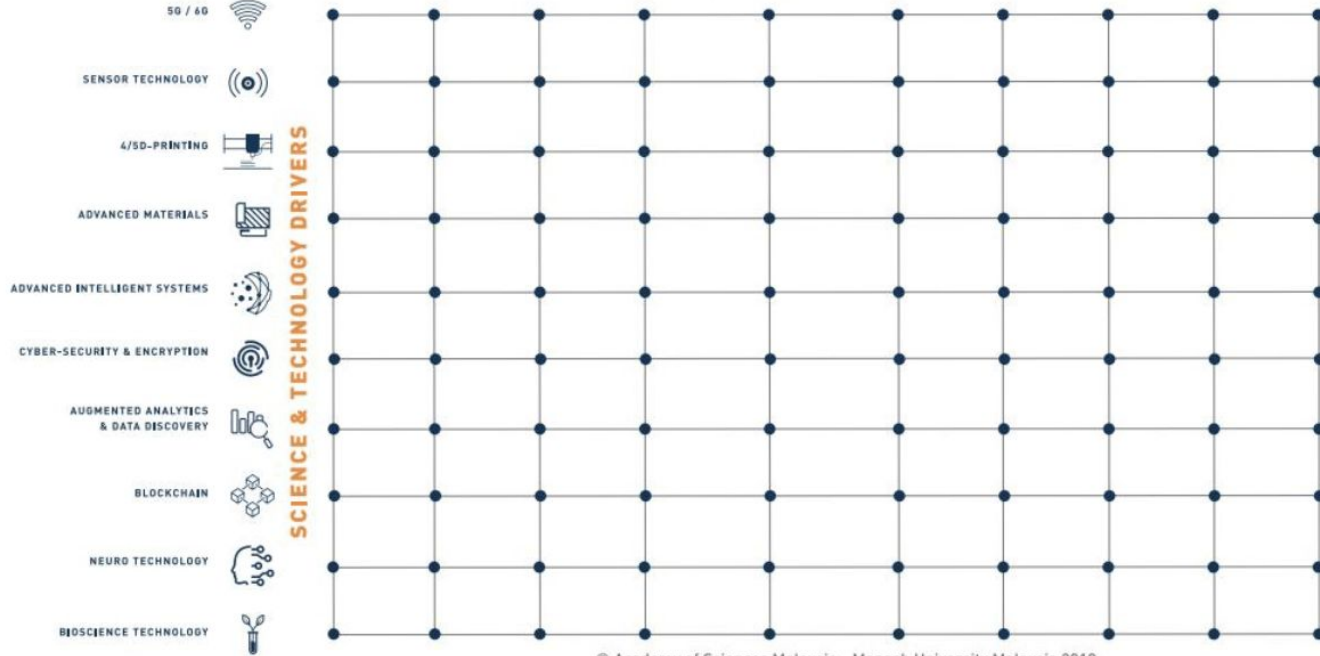
Using advanced data analytics, the data generated can be used to perform predictive maintenance, allowing airlines to boost maintenance efficiency and keep costs to a minimum.

skywise.



AIRBUS

MALAYSIAN SOCIO-ECONOMIC DRIVERS



Each Science & Technology Driver should explore core technologies & applications for the 10 Malaysian Socio-economic Drivers

Driving Fundamental & Translational Research

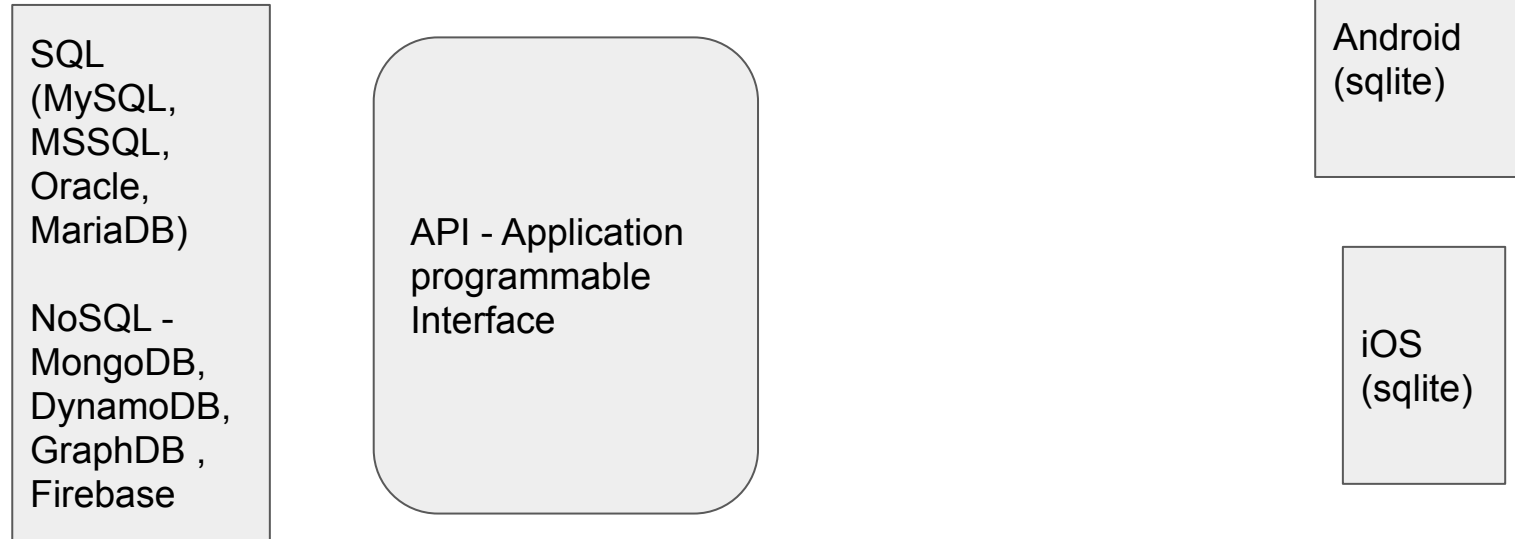
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Each Malaysian Socio-economic Driver should explore how the 10 Science & Technology Drivers will value-add and enhance their global competitiveness

Path to learn to build mobile app

- How to create **UI element** (focus on one page first) - Button, TextView, ImageView, TextInput... [1st week / 4th week]
- Navigation, multiple page = Stack, Tab, Drawer [2nd week]
- Passing data from one page to another page (forward pass, backward pass) [2nd week / 5th week]
- Showing data on a List [2nd week / 5th week]
- Retrieving data from Internet (**GET**, POST, API with Header) [3rd week 6h week]
- Storing data in local storage/Shared Preference [3rd week/ 6h week]
- Firebase [7h Week]
- Use device features : Camera, Geolocation, Social Sharing, Photo Library [7th week]
- Improve architecture (Redux, React Native, Provider, Flutter)

The architecture of a mobile application



SQL - MySQL, MSSQL

- Structured as a table
- Transaction.. (Rollback, Transaction Start..)
-

NoSQL (Mongodb)

- No structure
- It looks like a JSON (Javascript object notation)
- **Big data** that has lots of children, Rider information every seconds..

{

"M...ff.."

Application/ Web Development Cycle

Define - Project Management, Requirement Gathering (Business Analyst, project manager ,, contract, legal, invoicing..)

Design - UI / UX - UI UX Designer ..

<https://www.coursera.org/professional-certificates/google-ux-design>

Develop - Development in the technology mentioned

Test - Testing the app, producing test report

Deploy - Maintenance, support etc

Supply Demand

Ionic -

Android

Flutter

React Native

iOS - easy [2]

Contact me

The Moose Academy

Common Room Bangi

Wan Muzaffar Wan Hashim (LinkedIn)

BMI Calculator



Enter your height (cm)

Enter your weight (kg)

Calculate

Bmi- calc

$$\text{Bmi} = \text{weight} / (\text{height in metre})^2$$

Your BMI is 25 you are

< 18 - underweight

18 ... 25 - OK

25 .. 30 - overweight

30 > ... - obese