A

Seminar Presentation On

"Analysis on Cross - Platform App Development Tools"

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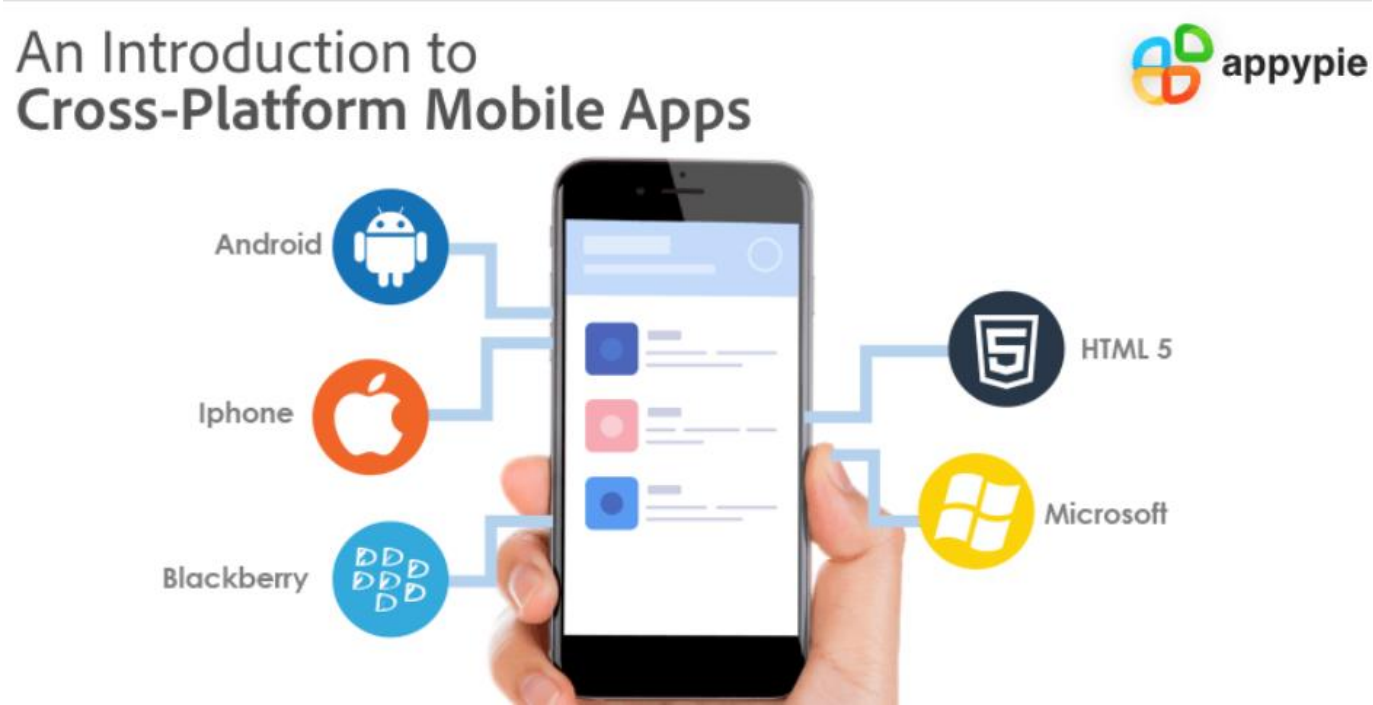
Introduction

- Cross Platform: -

- Cross – Platform application development is about building a single application that can run on various operating systems, instead of developing different app versions for each platform.



- Types of Frameworks: -

- Apps are made on the basis of different types of frameworks and by the help of these frameworks developers make their own applications.

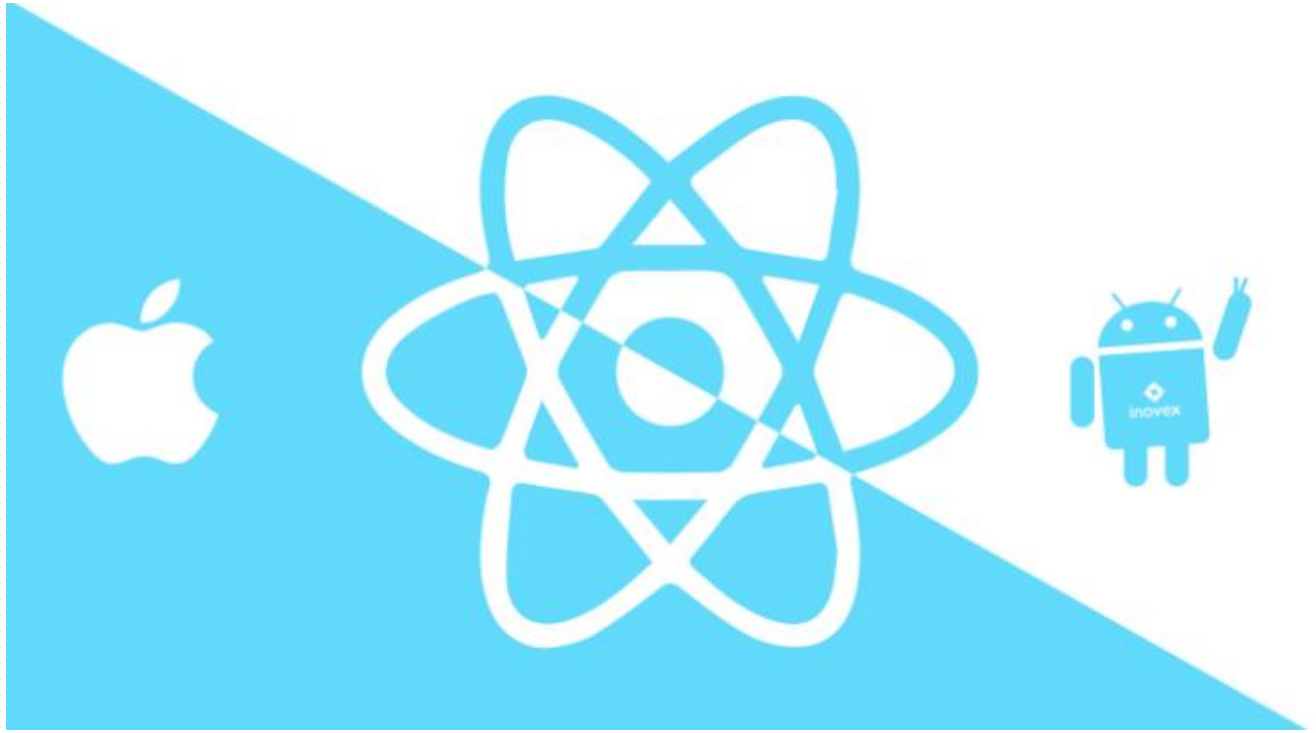
- For Example: -

1) React Native
2) Flutter
3) Xamarin
4) Cordova
5) Ionic

and many more…..

- React Native: -

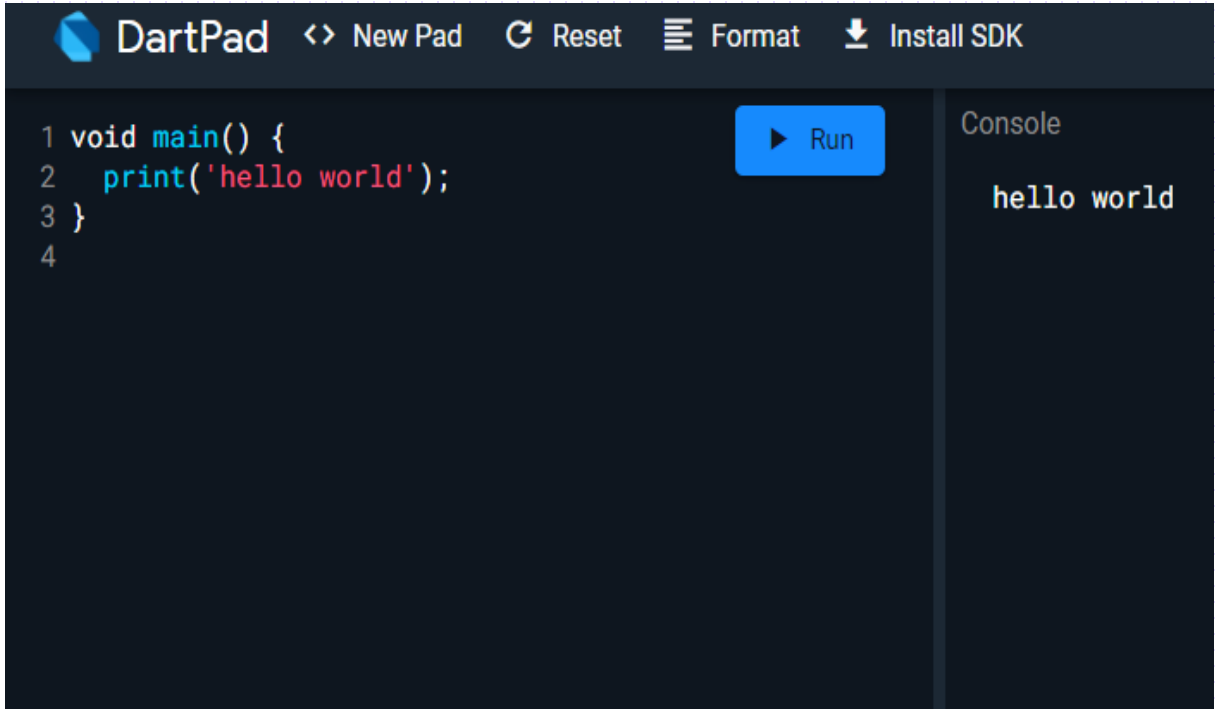
- This framework is made by the company name Facebook.
- This framework is based on JavaScript programming language which used to developers to make apps on both iOS and android.



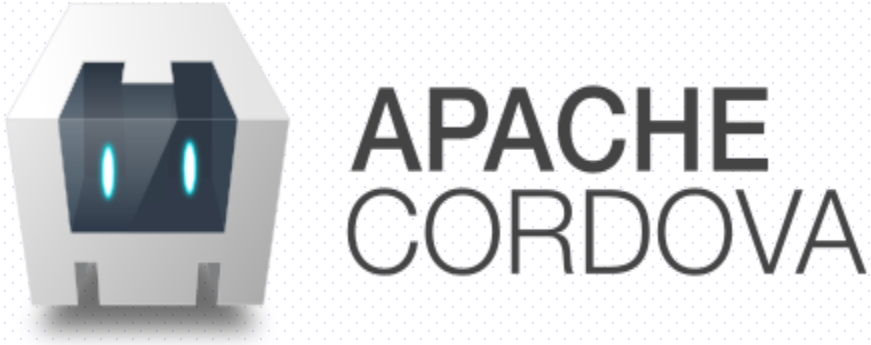
- Flutter: -

- This framework is made by the company name Google.
- This framework is based on the dart programming language.

- Dart programming syntax: -



- Cordova: -
  - Apache Cordova is also named as PhoneGap which is created by Nitobi company.
  - This framework is based on the web based languages called HTML, CSS, JavaScript which helps developer to make their own applications.



Motivation

- By the time user develop a native app for either iOS or Android, the cross-platform development provides user with an app that can seamlessly run across different devices and platforms. Such a faster and swifter app development can easily enable user to obtain the advantage of reduced Time to Market readily.

Objectives

- Cross – Platform development aims at creating a single application that runs identically on several platforms.
- It uses platform – agnostic technologies such as HTML, CSS & JavaScript and helps businesses cover many and devices at lower costs.

Literature Survey

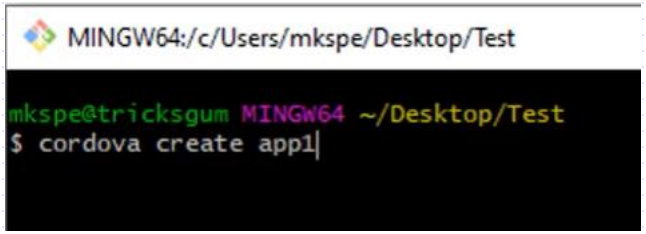
Sr. No	Paper title	Methodology	Limitations
1.	[Kamar Vishal, Dr. Ajay Kushwaha] "Mobile Application Development Research based On Xamarin Platform"	This research is used Xamarin framework to build apps	Pricing is high, Platform – specific limitations
2.	[Kanase Rajkumar, Awari Hrishikesh] "Implementation of news app based on Cordova cross - platform"	This research is used Cordova framework to build apps	Cordova is not optimal to for large apps that require lots of data & functionality
3.	[Matias Martinez, Sylvain Lecomte] "Towards the quality improvement of cross – platform mobile applications"	It is used to create a taxonomy of frequent bugs from mobile apps	Thread is to not find 'meaningful' open-source mobile app projects for creating the evaluation purpose.

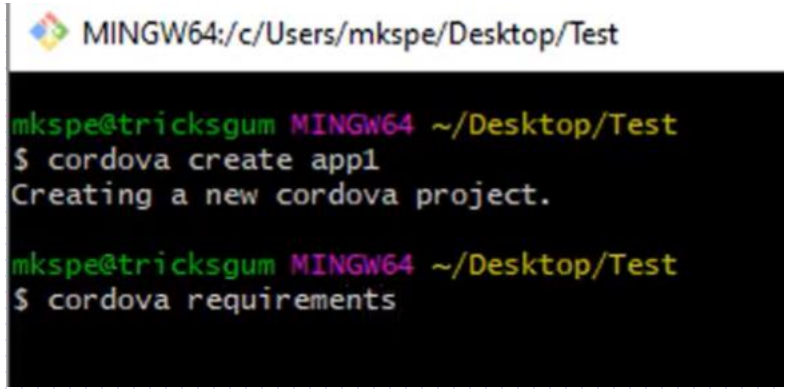
Software Requirement

- Android studio
- Git

Steps to build cordova in gitbash: -

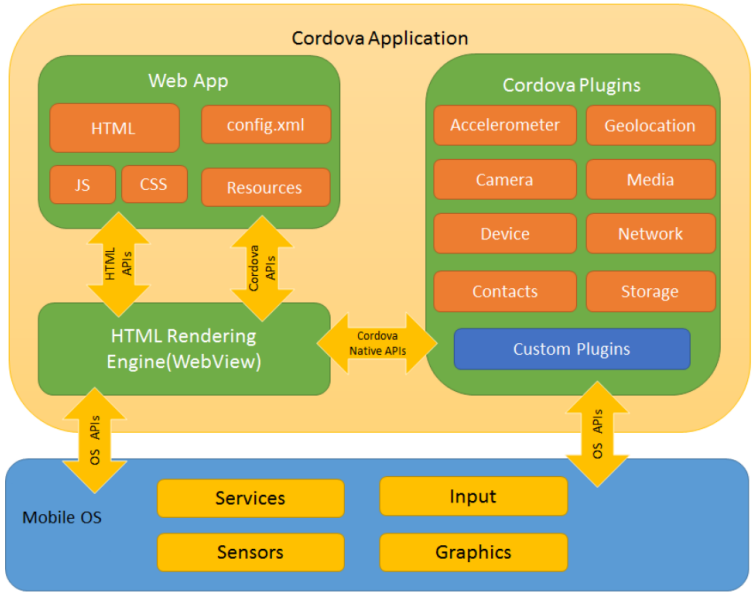
1)





4)

Methodology



- **<u>Plugins</u> : -**

- Plugins are an integral part of the Cordova ecosystem. They provide an interface for Cordova and native components to communicate with each other and bindings to standard device APIs. This enables user to invoke native code from JavaScript.
- Apache Cordova project maintains a set of plugins called the Core Plugins. These core plugins provide user application to access device capabilities such as battery, camera, contacts, etc.
- In addition to the core plugins, there are several third-party plugins which provide additional bindings to features not necessarily available on all platforms.

Advantages

- Cross-platform tools are also referred to as WORA tools (Write Once, Run Anywhere) which is the primary advantage of such a method.
- The app is implemented using a single code base but can be deployed to multiple platforms, i.e., it is not restricted to a single platform.
- Cross-platform tools usually use well-known programming languages and syntaxes, which becomes an easy and quick means for development.
- One of the best things about this particular platform is that the entire code can easily be utilized again and again. Rather than developers developing new codes for each and every platform, a single code can simply be reused. Hence, it saves time along with resources as it completely eliminates repetition in the task of keep creating codes.

Disadvantages

- Native applications are slightly faster than the cross – platform applications.
- Native apps provide a richer user experience. Rendering of high-end graphics is only effectively possible with native app development.
- Cross-compliance during the development phase reduces the speed.

Application

- The cross-platform must give the possibility to maintain and improve the application
- For example, if new options need to be implemented in an application, the modifications have to always be in the cross-platform level and thereafter deployed in deferent platforms.

Conclusion & Future Scope

- To conclude, it can be said that the cross-platform development continually improving. The best suggestion for programmer is actually understand technical requirements and to maintain oneself up-to-date of those modifications in the tech and contemplating each instrument utilizing the instrument contrast. Within this water complaint redressal system react native app, later more features like client chat with engineers, SMS verification can be added.

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THANK YOU