

WELCOME : OVERVIEW

Mobile Applications Testing



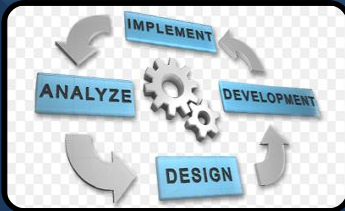
INTRODUCTION: Mobile APP vs Desktop and WEB



Ever since the first cell phone hit the commercial market in 1983, the mobile market has rapidly innovated from a handset that weighed over 2 pounds and could only make one phone call at a time, to a modern-day smartphone that weighs barely 5 ounces and can hold enough apps to practically run your entire life



Lets discuss how testing mobile apps differs from desktop and web testing, and points out the complexities and nuances that make mobile testing a unique skill for testers.



We have witnessed transition from desktop to web and are witnessing another transition from web to mobile.



It is important to understand how testing mobile applications is different from testing browser / desktop applications.

Test Approach: Mobile APP vs Desktop and WEB



Desktop application:
A native application that executes on a user's local machine.



Mobile application:
An application built to run natively on a mobile device.



Web applications:
Applications that run 100% within a browser.

INTRODUCTION: Mobile APP vs Desktop and WEB

Desktop application:

This application may or may not have a network component, although most desktops have some kind of network component these days, even if it's just to update itself online.

If you need to update the application, an update needs to be downloaded locally.



INTRODUCTION: Mobile APP vs Desktop and WEB

Mobile application:

The most common devices these days are either iOS or Android based, but there is a small population of Windows mobile users and a few folks still clinging to their Blackberries.

Mobile applications, similar to desktop apps may or may not have a network component

Just like a desktop app, if you need to make an update to this app, something needs to be downloaded and installed.



INTRODUCTION: Mobile APP vs Desktop and WEB

WEB application:

There a group of apps on both the desktop and on mobile that are just web apps, running within an app-specific browser.

An example of one of these would have been the early versions of the Facebook app -- those were just a bunch of web views running within a browser window.

Sometimes those are hard to identify, but a surefire tell is if your app updates without you needing to do anything from the App Store/Play Store.



INTRODUCTION: Testing a SMART WATCH

Test also for :

Wearability

Screen quality

Battery life

Smooth performance

Built in GPS efficiency

Efficient charging

SmartWatches

require similar primary testing procedures as Smartphones and Tablets.



INTRODUCTION: Testing a HEART MAKER (medical device)

You'll want to test for:

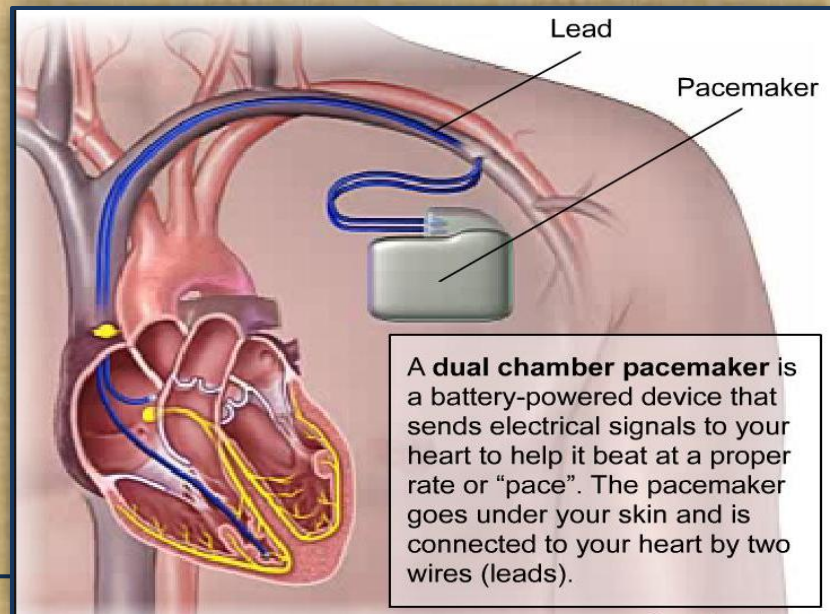
The spectrum of pulse shapes

ECG wave measurements

Measured energy output

Test automation is crucial in testing pacemakers to assure standardized clinical requirements.

Use a defibrillator tester to analyze a **pacemaker**. Perform the specified test loads and measurement algorithms required for operational assurance.



INTRODUCTION: Testing a Fitness Tracker

The primary required attribute is accuracy. Test for in depth fitness analysis that includes the elimination of such deficiencies as:

Overestimated or underestimated performance

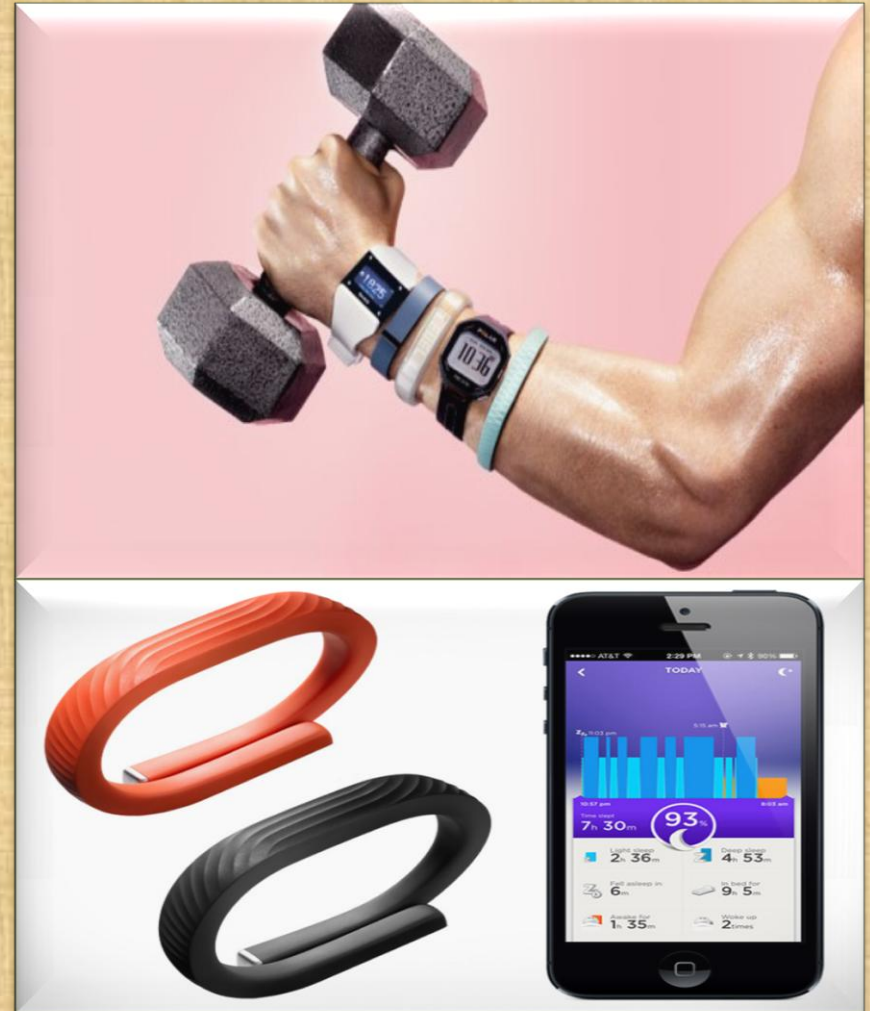
Overestimated or underestimated calories

Lack of useful features

Overestimated or underestimated distances

Overall tracking accuracy

Testing is performed using various scenarios that virtually duplicate normal usage.



Testing Mobile APP vs WEB :

I. Limited Real Estate : **SCREEN SIZE**

MOBILE



Mobile devices are much smaller. Aligning images and text becomes a real challenge in features like portrait and landscape orientation



More variation – even when dealing with the same manufacturer

WEB

Responsive design is relatively easy to code for desktop and laptop browsers – most of which come with predefined ratios



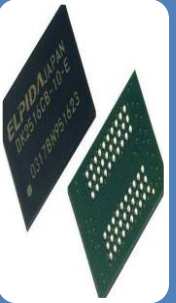
Testing Mobile APP vs WEB : STORAGE and RAM

2.

MOBILE



Limited storage and processing power of today's mobile devices.



Even high capacity phones can quickly fill up as users download apps and multimedia.

WEB

Desktop storage is essentially unlimited (measured in terabytes).

Cloud-based storage is easy to increase, even if this requires charging higher prices to end-users.



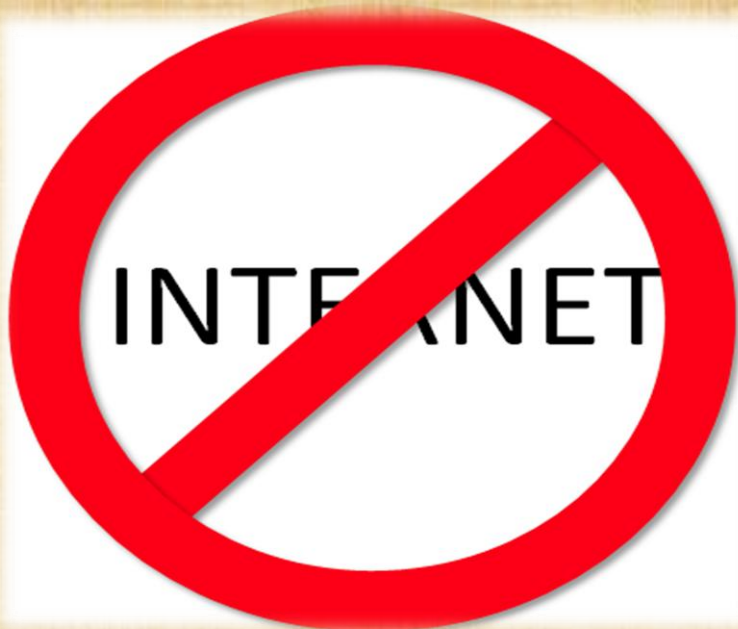
Testing Mobile APP vs WEB :

3.

INTERNET ACCESS

MOBILE

Mobile apps may or may not need online access



WEB

With the exception of a few off-line browser applications (e.g. Gmail), Web-based software always requires an Internet connection.



Testing Mobile APP vs WEB :

4.

MORE CONFIGURATIONS

MOBILE

iOS, Android, Windows OS, and BlackBerry.

Hardware limitations specific to devices manufactured by Nokia, HTC, Sony, Samsung, Apple ,etc

New mobile devices frequently hit the market

Emulators and Simulators



WEB

The majority of today's browsers follow the same basic logic. Chrome is not radically different from Internet Explorer. And Firefox has more in common with Safari than Mozilla

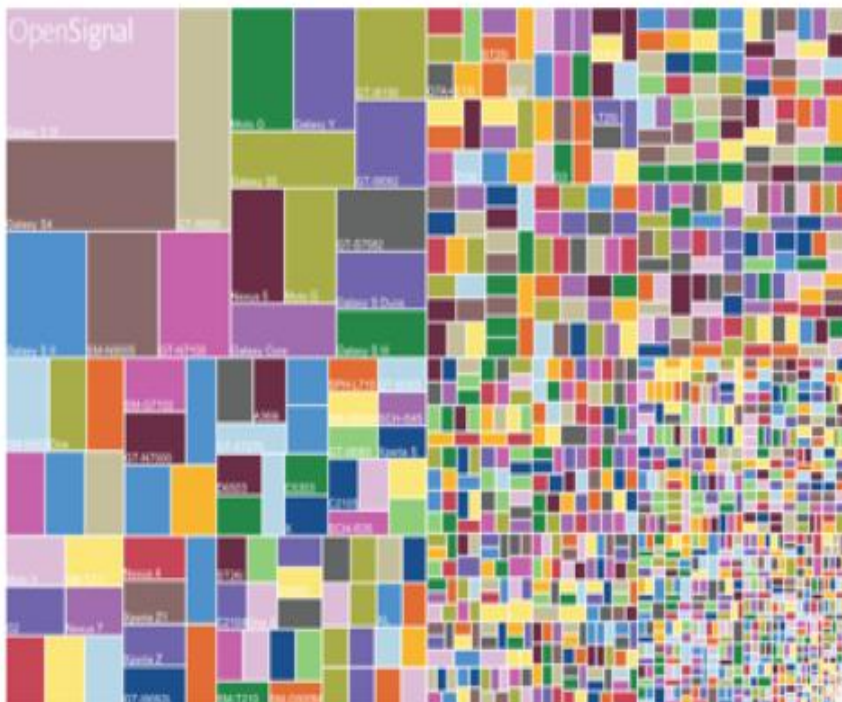
Web-based software testers nearly always have access to the platforms they're testing



Testing Mobile APP vs WEB : (cont)

DEVICE FRAGMENTATION

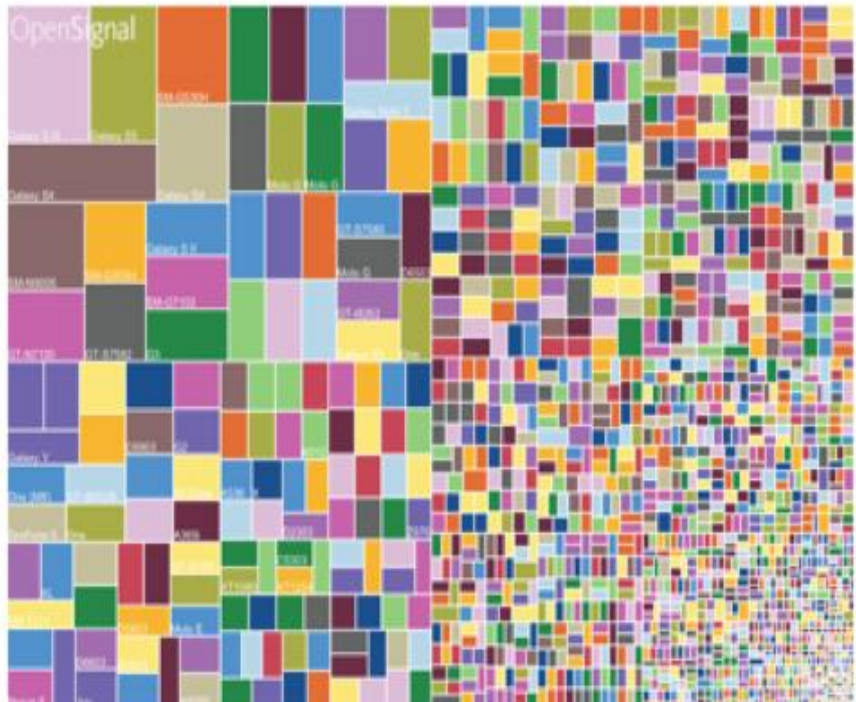
Android Device Fragmentation 24,093 Devices 2016



August 2014

August , 2014

11,868 Devices



August 2014 August 2015

August , 2015

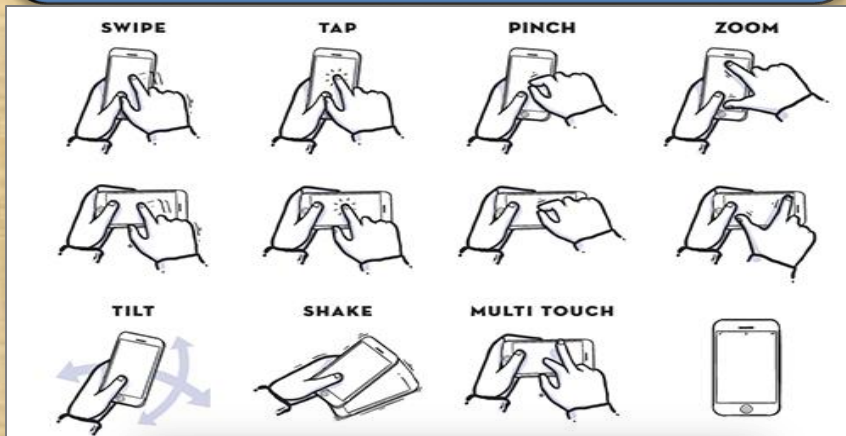
18,796 Devices

Testing Mobile APP vs WEB :

5. INPUT INTERFACE

MOBILE

Touch Screens, USB connections, and even voice recognition (thanks, Siri).



WEB

Usually with keyboards and mouse (although even this is changing)

