

Becoming a Pro

IN Mobile Applications Testing



Mobile Test Industry Standards :

Testing Strategies for Mobile Apps

Security Test EXTRA

Workshop : ANSWER THESE QUESTIONS

- 1. What do you consider to be the biggest security issues with mobile phones?*
- 2. How seriously are consumers and companies taking these threats?*
- 3. What can be done about these threats?*



Mobile Test Industry Standards :

Ways your Device might be compromised by a hacker ?

Surveillance

- Record audio
- Camera, photos and videos
- Location
- Call history
- Text messages

Impersonation

- SMS redirection
- Sending emails
- Posting to social media

Data Theft

- Account logins and passwords
- Contacts, phone number and call history
- Steal International Mobile Equipment Identity (IMEI) number



Financial

- Send premium rate SMS messages
- Make expensive phone calls
- Steal Transaction Authentication Numbers (TAN)
- Extort you via ransomware and fake antivirus

Botnet Activity

- Click fraud
- Send premium rate SMS
- Launch Distributed Denial of Service (DDoS) attacks

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- Attacks on mobile devices range in volume and severity, but all have the potential to cause chaos at both a device and network level.

Just like in the conventional fixed Internet world, attacks come in all shapes and sizes – such as:

- Phishing (criminals attempt to trick users into sharing passwords etc)
- Spyware (tracks user's activity, perhaps selling data to advertisers)
- Worms (a program that copies itself onto multiple devices via network connections)
- Trojans (a program that looks genuine but hides malicious intent)
- Man-In-The-Middle Attacks (where a criminal intercepts and manipulates messages between two devices or device and computer).

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What is OWASP ?

- The Open Web Application Security project is an online community which creates freely-available articles, methodologies, documentation, tools, and technologies in the field of Web App Security

OWASP Top Ten:

- The Top Ten was first published in 2003 and is regularly updated.
- Its goal is to raise awareness about application security by identifying some of the most critical risks facing organizations.
- The Top 10 project is referenced by many standards, books, tools, and organizations, including MITRE, PCI DSS, Defense Information Systems Agency, FTC, and many more.

CWE – COMMON WEAKNESS ENUMERATION :
<https://cwe.mitre.org/about/>

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Security Test **EXTRA- OWASP TOP TEN 2017**

A1-Injection

A2-Broken Authentication and Session Management

A3-Sensitive Data Exposure

A4-XML External Entities (XXE)

A5-Broken Access Control

A6-Security Misconfiguration

A7-Cross-Site Scripting (XSS)

A8-Insecure Deserialization

A9-Using Components with Known Vulnerabilities

A10-Insufficient Logging&Monitoring

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SUMMARY

Functional

- Validation of Functionality
- Smoke / Regressions Testing
- Offline access testing
- Negative Testing

Non Functional

- Network Strength / Outage / Recovery
- Different NW Types
- Peripheral Testing

Interoperability (IOP)

- Voice / SMS interrupts
- Notifications
- Battery /Cable Removal

Memory Leak

- Memory Usage
- Memory Leaks
- Garbage Collection

Performance Testing

- CPU Usage testing
- Network Usage
- Page Render time or activity Render time

Usability Testing

- User Experience
- Competitive Analysis
- Expert Review

Installation Testing

- New App Install
- Uninstall and **Reinstall**
- Upgrade testing

Security Testing

- OWASP Vulnerabilities
- Dynamic Testing
- Static Code Analysis
- Data Encryption

Language Testing

- Validation for Locales
- Images and Text
- Currencies, time zones etc.
- Context

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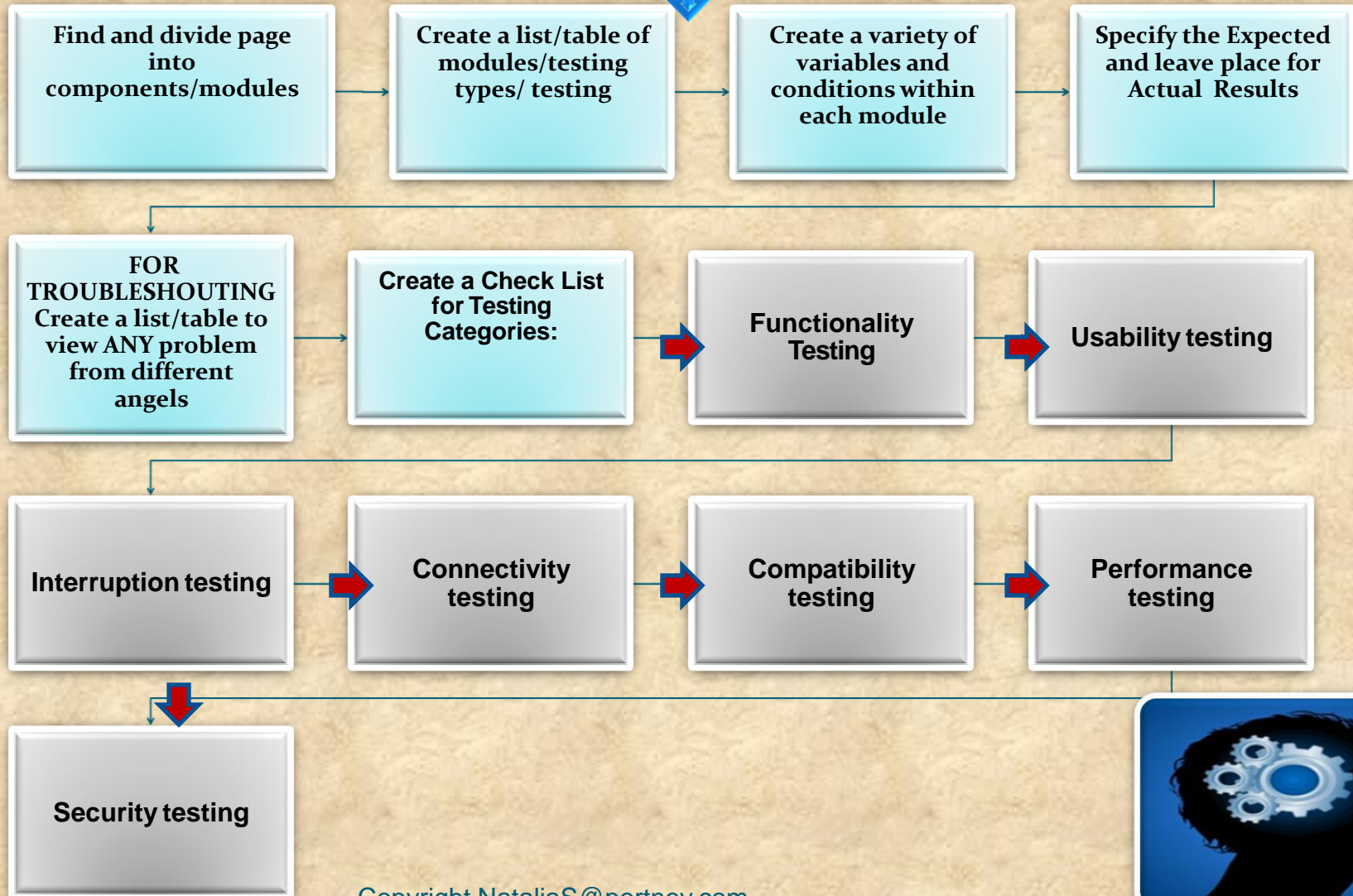
Testing Strategies for Mobile Apps : **LETS PRACTICE**



Mobile Test Industry Standards

Testing Strategies for Mobile Apps : LETS PRACTICE

How to Start Testing a Mobile Page



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Testing Strategies for Mobile Apps

GUI TEST Checklist

Navigation

Formatting

Color and fonts

Scrolls

Controls and alignments

Spelling and grammar

Justification

Look and feel

Default and shortcut keys

Tab

Opening input

Alternatives

Behavior

Modality and multiple windows

Contrast

Images

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Testing Strategies for Mobile Apps : **LETS PRACTICE**

top considerations for creating
a release CHECK LIST for mobile
app testing

Application Installation/Update

Application Sign Up & Log in

Subscription scenarios

Application Sanity Suit

APP works in different Mobile modes

User Friendly

Network connectivity

Data save conditions

Mobile interruptions

Battery Consumption

Mobile memory utilization

Mobile data utilization

Screen scrolling application screen

New OS release support

correct implementation of AdMob or
other mobile ad platform

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Testing Strategies for Mobile Apps : LETS PRACTICE

Test case	Sub-Category	Description	Result
1. Installation		Verify that app can be Installed Successfully	App should be able to install Successfully
2. Un-installation		Verify that app can be Uninstall Successfully	User should be able to uninstall the app successfully
3. Network Test Cases		Verify the behavior of app when there is Network problem and user is performing operations for data call	User should get proper error message like "Network error. Please try later"...
		Verify that User is able to establish data call when Network is back in action	User should be able to establish data call when Network is back in action

Mobile Test Industry Standards

Testing Strategies for Mobile Apps : LETS PRACTICE

TC	Sub-Category	Description	Result
4. Voice Call Handling	Call Accept	Verify that User can accept Voice call at the time when app is running and can resume back in app from the same point	User should be able to accept Voice call at the time when app is running and can resume back in app from the same point
	Call Rejection	Verify that User can reject the Voice call at the time when app is running and can resume back in app from the same point	User should be able to reject the Voice call at the time when app is running and can resume back in app from the same point
	Call Establish	Verify that User can establish a Voice call in case when app data call is running in background	User should be able to establish a Voice call in case when app data call is running in background

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Testing Strategies for Mobile Apps : LETS PRACTICE

TC	Sub-Category	Description	Result
5. SMS Handling		Verify that User can get SMS alert when app is running	User should be able to get SMS alert when app is running
		Verify that User can resume back from the same point after reading the SMS	User should be able to resume back from the same point after reading the SMS
6. Unmapped Keys		Verify that unmapped keys are not working on any screen of app	Unmapped key should not work on any screen of app
7. Application Logo		Verify that app logo with App Name is present in app manager, on the App screen page, widgets (opt.) and user can select it	Application Logo with App Name should be present in app manager, on the App screen page, widgets (opt.) and User can select it.

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Testing Strategies for Mobile Apps : LETS PRACTICE

TC	Sub-Category	Description	Result
8. Splash Screen		Verify that when User selects app Logo in Splash is displayed. Note: Splash do not remain for more than 3 sec Note: A splash screen is an image that appears while a game or program is loading.	When User selects app, Logo in app Splash should be displayed
9. Low Memory		Verify that app displays proper error message when device memory is low and exits gracefully from the situation	App should display proper error message when device memory is low and exits gracefully from the situation
10. Clear/Back Key		Verify that Clear key should navigate the User to previous screen	Clear Key should navigate the User to previous screen
11. End/Home Key		Verify that End Key should navigate the User to native Device screen	End Key should navigate the User to native Device screen

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TC	Sub-Category	Description	Result
12. Visual Feedback		Verify that there is visual feedback when response to any action takes more than 3 sec	There should be visual feedback given when response time for any action is longer than 3 sec
13. Continual Keypad Entry		Verify that continual key pad entry do not cause any problem. Note: Continual Keypad test consist in a multiple key press, done quickly as possible, in order to load at maximum capacity the handset's memory	Continual key pad entry should not cause any problem in app
14. Exit Application		Verify that User is able to exit from app with every form of exit modes such as Flap, Slider, Home Key or Exit option from any point of app	User should be able to exit with every from of exit mode such as Flap, Slider, Home Key or Exit option from any point of app
15. Charger Effect		Verify that when app is running then inserting and removing charger do not cause any problem and proper message is displayed when charger is inserted in device	When app is running, then insertion or remove of charger not cause any problem, and proper message displayed .

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Testing Strategies for Mobile Apps : LETS PRACTICE

TC	Sub-Category	Description	Result
16. Low Battery		Verify that when app is running and battery is low, then proper message is displayed to the User.	When app is running and battery is low, there should be proper message displayed to the User
17. Removal of Battery		Verify that removal of battery at the time of app data call is going on do not cause interruption and data call is completed after battery is inserted back in the device	Removal of battery at the time of app data call is going on should not cause interruption and data call should be completed after battery is inserted back in the device
18. Battery Consumption		Verify that app does not consume battery excessively	The app should not consume battery excessively
19. Application Start/Restart		Find the app icon and select it. Press tab on the Device to launch the app. Observe the app launch in the timeline defined.	App must not take longer than 25 sec to start

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TC	Sub-Category	Description	Result
20. Application Side Effects		Make sure that your app is not causing other apps of device to hamper	Installed app should not cause other apps of device to hamper
21. External incoming communication infrared		App should gracefully handle the condition when incoming communication is made via InfraRed	<p>When incoming communication enters the device, the app must at least respect one of the following:</p> <ul style="list-style-type: none">A. Go into pause state during InfraRed session and automatically continue from the point it was suspended at after the InfraRed session is doneB. Give a visual or audible notification <p>The app must not crash or hung.</p>

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TC	Sub-Category	Description	Result
22. Bluetooth interrupt:		When a file transfer is taking place with Bluetooth, the application must be paused and should be resumed from the same point after the transfer is done	



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Testing Strategies for Mobile Apps : LETS PRACTICE

HOMEWORK

Write as many Test Cases you can for this simple app on Mobile device with three buttons (A, B and C) that making different sounds upon tapping on it.

A - for Audio 1

B - for Audio 2

C - for Audio 3

You are free to create conditions and Rules for each button , but be consistent.

Write Test Cases (use previous slides for hints).

HAVE FUN !

main page

My Application Features

