Compatibility Testing for Mobile Apps and Websites

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a topic from Mobile Testing course
This is a sample of class
Mobile Testing: Manual and Automated

Next full course:
QUEST 2016, Chicago, IL
April 18, 2016, 8:30 am - 4:30 pm

See
http://qaiquest.org/2016/sessions/full-day-class-mobile-testing-manual-and-automated/
for details
Contents

• Compatibility Testing – a refresher
• Compatibility factors
• How to plan compatibility tests for mobile platforms
Compatibility Testing

• Functionality
• Performance
• **Compatibility**
• Usability
• Security
• Interoperability
• Survivability and recovery
• User acceptance
• Production monitoring

The ability of the system under test to function as required on all the supported platforms.
Compatibility Testing - Examples

- Web applications
  - Browsers
    - IE 9 / 10 / 11
    - Firefox 2, 3
    - Google Chrome
    - Safari
  - OS
    - Windows 7 / 8 / 8.1 + Service Packs
    - Mac OS
    - iOS 7
    - Android OSs
Compatibility Factors

- **Hardware**
  - Apple: iPhone versions & iPad versions
  - Android: device and tablet versions
- **OS**
  - Apple: iOS versions
  - Android: OS flavors and versions
- **Carrier compatibility**
Compatibility questions

• How do we know on which devices we should run the tests?

• How do we know what tests should we execute on which devices / carriers?

• What should the app do when installed on an unsupported platform?
## Compatibility Analysis

<table>
<thead>
<tr>
<th>User</th>
<th>• Demographics</th>
<th>• User groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HW</strong></td>
<td>• Platform</td>
<td>• Carrier</td>
</tr>
<tr>
<td><strong>SW</strong></td>
<td>• Operating System</td>
<td>• Browser</td>
</tr>
<tr>
<td><strong>Tech</strong></td>
<td>• What aspects of our app / website are sensitive to hardware and software platform differences?</td>
<td></td>
</tr>
</tbody>
</table>

- **Do we have Requirements for compatibility?**
- **Are they adequate?**
Compatibility Analysis: Demographics

- Who is using the app / website?
  - General public
    - Where (US / Canada / EU / India / China / other)
      - Alphabets
      - Measures
  - Specific groups
    - Businessmen
    - Doctors
      - Not-at-your-desk use
    - Academics
      - Mac integration
    - Traveling public
      - Connectivity
    - College students
    - Seniors
      - Font size
Compatibility Analysis : Hardware

- **Type**
  - Smartphone
  - Tablet
  - Other

- **Manufacturer**
  - Android manufacturers tend to over-customize things…

- **Display**
  - Size
  - Resolution

- **Special hardware**
  - Camera utilization
  - Barcode scanning
  - Credit card scanning
  - Location (GPS / Galileo / GLONASS / BeiDou / …)
  - …
Compatibility Analysis : Software

• Operating System
  – iOS
    • Version
  – Android
    • Flavor
    • Version
    • Manufacturer’s customization
  – Jailbreak / Root
    • Should work on jailbroken / rooted devices?

• Browser
  – Standard
  – Installed
Compatibility Analysis: Technology

Example: **FindDoc**
- *A mobile website* that enables users to find physicians by one or more conditions: location (current or address), specialization, ranking, opening hours, etc.
- Requires Internet connection to function and utilizes a backend database that has a web-based management interface. Each update to the backend database should be reflected on the mobile end within 5 minutes.
- The application is free and serves ads that are renewed every set interval of time.
- FindDoc can be used in the US, Canada, Germany, and Japan.

**User:**
- Travelling businessmen
- Parents with kids

**Hardware:**
- Tablets
- Smartphones

**Software:**
- Browser

What tablets and smartphones are popular within our target groups?
What browsers do our users utilize?
What functionality will be sensitive to SW and HW combinations?
<table>
<thead>
<tr>
<th>Platform:</th>
<th>BlackBerry</th>
<th>iPad Air</th>
<th>iPad Mini</th>
<th>iPhone 6</th>
<th>Galaxy</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Search by current location</td>
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<td>All</td>
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</tr>
</tbody>
</table>

+ Test for unsupported platforms
Mobile Testing class

- State of the Mobile
  - Stats
  - Technology
- Mobile testing challenges
- Testing approach (+ exercises)
  - Functionality
  - Performance
  - Compatibility
  - Usability
  - Security
  - Interoperability
  - Survivability and recovery
  - User acceptance
  - Production monitoring
- Mobile Test Lab
- Automating mobile tests

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