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Centro de Informática

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Universidade Federal de Pernambuco

CITIESSE Execution

Artur José Miranda Júnior – *ajmj@cin.ufpe.br*
Miscelânia Pedrosa de Araújo – *mpa2@cin.ufpe.br*
Willamys Gomes Fonseca Araújo – *wgfa@cin.ufpe.br*

Advisor: Roberto S. M. Barros

Summary

- Introduction
- Development Environment
- Software Project
- Implementation
- Evaluation Results
- Conclusion

Introduction

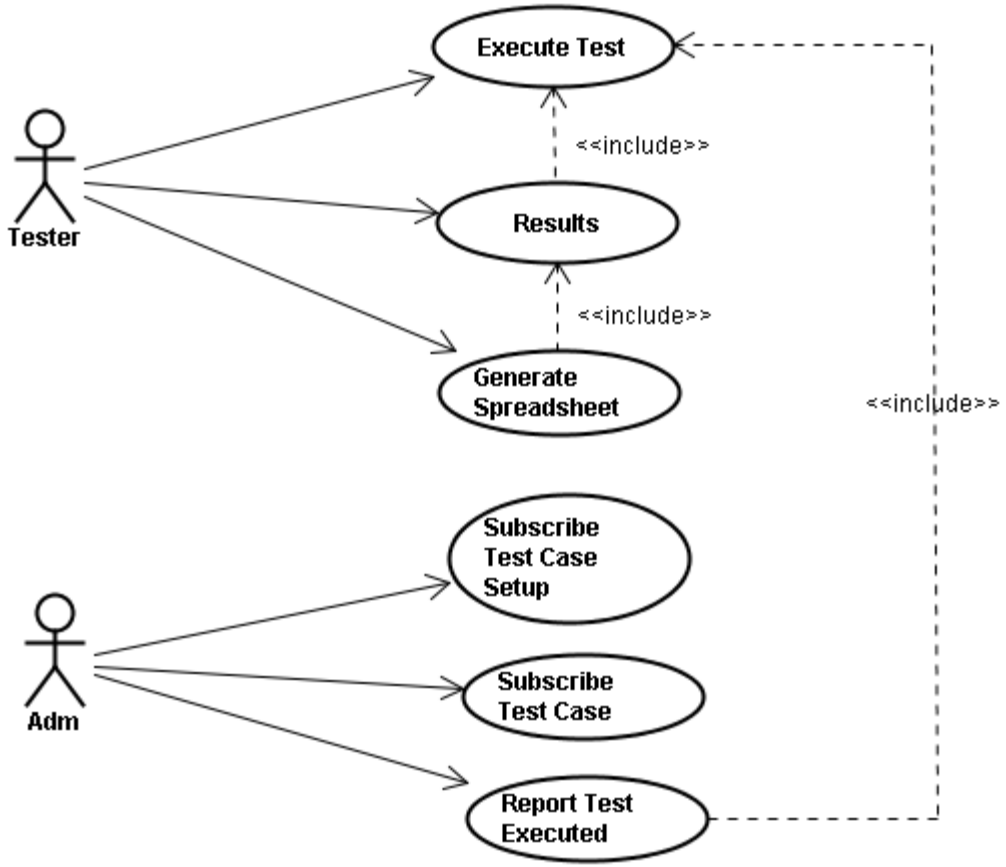
- *Compatibility Test Suite* (CTS): *Google Mobile Service* (GMS)
- Problems
  - Many documents;
  - Description of the test cases (Flowchart and Spreadsheet);
  - Getting information inside the device;
- Objectives
  - To develop an application (Java);
  - To improve the quality, time and standardization;

Development Environment

- **Java:**
  - Portable, simple, object-oriented, allowing modularity, reuse and code maintenance;
- **IDE:** Eclipse
  - Open source software development and development-based plug-ins;
- **Git**
  - Distributed version control system with emphasis on speed;

Software Project

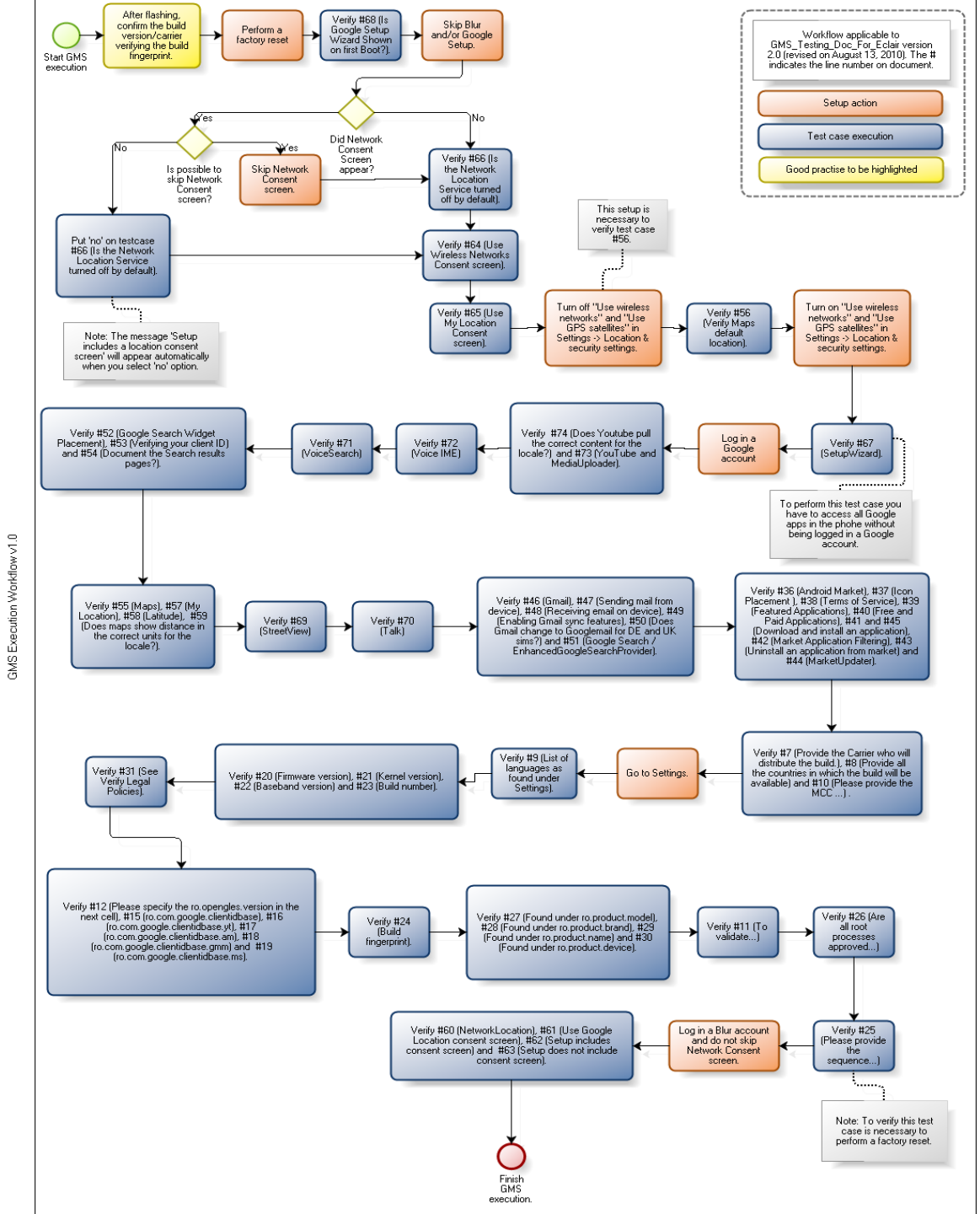
- Functional Requirements
  - Use Cases



Software Project

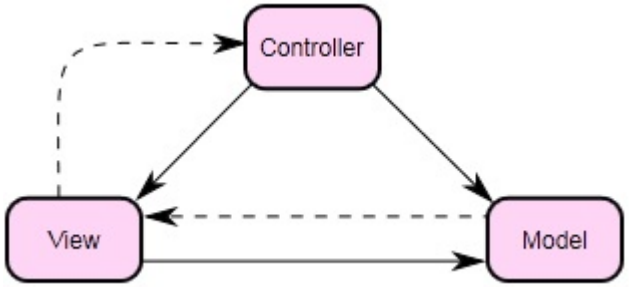
- Non-Functional Requirements
  - Usability
  - Performance
  - Security
  - Hardware and Software

- Flowchart


GMS Execution Workflow v1.0
Start GMS execution
After flashing, confirm the build version/carrier verifying the build fingerprint.
Perform a factory reset
Verify #68 (Is Google Setup Wizard Shown on first Boot?).
Skip Blur and/or Google Setup.
Did Network Consent Screen appear?
Yes
No
Is possible to skip Network Consent screen?
Yes
No
Skip Network Consent screen.
Verify #66 (Is the Network Location Service turned off by default).
Put 'no' on testcase #66 (Is the Network Location Service turned off by default).
Note: The message 'Setup includes a location consent screen' will appear automatically when you select 'no' option.
Verify #64 (Use Wireless Networks Consent screen).
Verify #65 (Use My Location Consent screen).
This setup is necessary to verify test case #56.
Turn off "Use wireless networks" and "Use GPS satellites" in Settings -> Location & security settings.
Verify #56 (Verify Maps default location).
Turn on "Use wireless networks" and "Use GPS satellites" in Settings -> Location & security settings.
Verify #67 (SetupWizard).
To perform this test case you have to access all Google apps in the phohe without being logged in a Google account.
Log in a Google account
Verify #74 (Does Youtube pull the correct content for the locale?) and #73 (YouTube and MediaUploader).
Verify #72 (Voice IME)
Verify #71 (VoiceSearch)
Verify #52 (Google Search Widget Placement), #53 (Verifying your client ID) and #54 (Document the Search results pages?).
Verify #55 (Maps), #57 (My Location), #58 (Latitude), #59 (Does maps show distance in the correct units for the locale?).
Verify #69 (StreetView)
Verify #70 (Talk)
Verify #46 (Gmail), #47 (Sending mail from device), #48 (Receiving email on device), #49 (Enabling Gmail sync features), #50 (Does Gmail change to Googlemail for DE and UK sims?) and #51 (Google Search / EnhancedGoogleSearchProvider).
Verify #36 (Android Market), #37 (Icon Placement), #38 (Terms of Service), #39 (Featured Applications), #40 (Free and Paid Applications), #41 and #45 (Download and install an application), #42 (Market Application Filtering), #43 (Uninstall an application from market) and #44 (MarketUpdater).
Verify #7 (Provide the Carrier who will distribute the build.), #8 (Provide all the countries in which the build will be available) and #10 (Please provide the MCC ...) .
Go to Settings.
Verify #9 (List of languages as found under Settings).
Verify #20 (Firmware version), #21 (Kernel version), #22 (Baseband version) and #23 (Build number).
Verify #31 (See Verify Legal Policies).
Verify #12 (Please specify the ro.opengles.version in the next cell), #15 (ro.com.google.clientidbase), #16 (ro.com.google.clientidbase.yt), #17 (ro.com.google.clientidbase.am), #18 (ro.com.google.clientidbase.gmm) and #19 (ro.com.google.clientidbase.ms).
Verify #24 (Build fingerprint).
Verify #27 (Found under ro.product.model), #28 (Found under ro.product.brand), #29 (Found under ro.product.name) and #30 (Found under ro.product.device).
Verify #11 (To validate...)
Verify #26 (Are all root processes approved...)
Verify #25 (Please provide the sequence...)
Note: To verify this test case is necessary to perform a factory reset.
Log in a Blur account and do not skip Network Consent screen.
Verify #60 (NetworkLocation), #61 (Use Google Location consent screen), #62 (Setup includes consent screen) and #63 (Setup does not include consent screen).
Finish GMS execution.
Workflow applicable to GMS_Testing_Doc_For_Eclair version 2.0 (revised on August 13, 2010). The # indicates the line number on document.
Setup action
Test case execution
Good practise to be highlighted

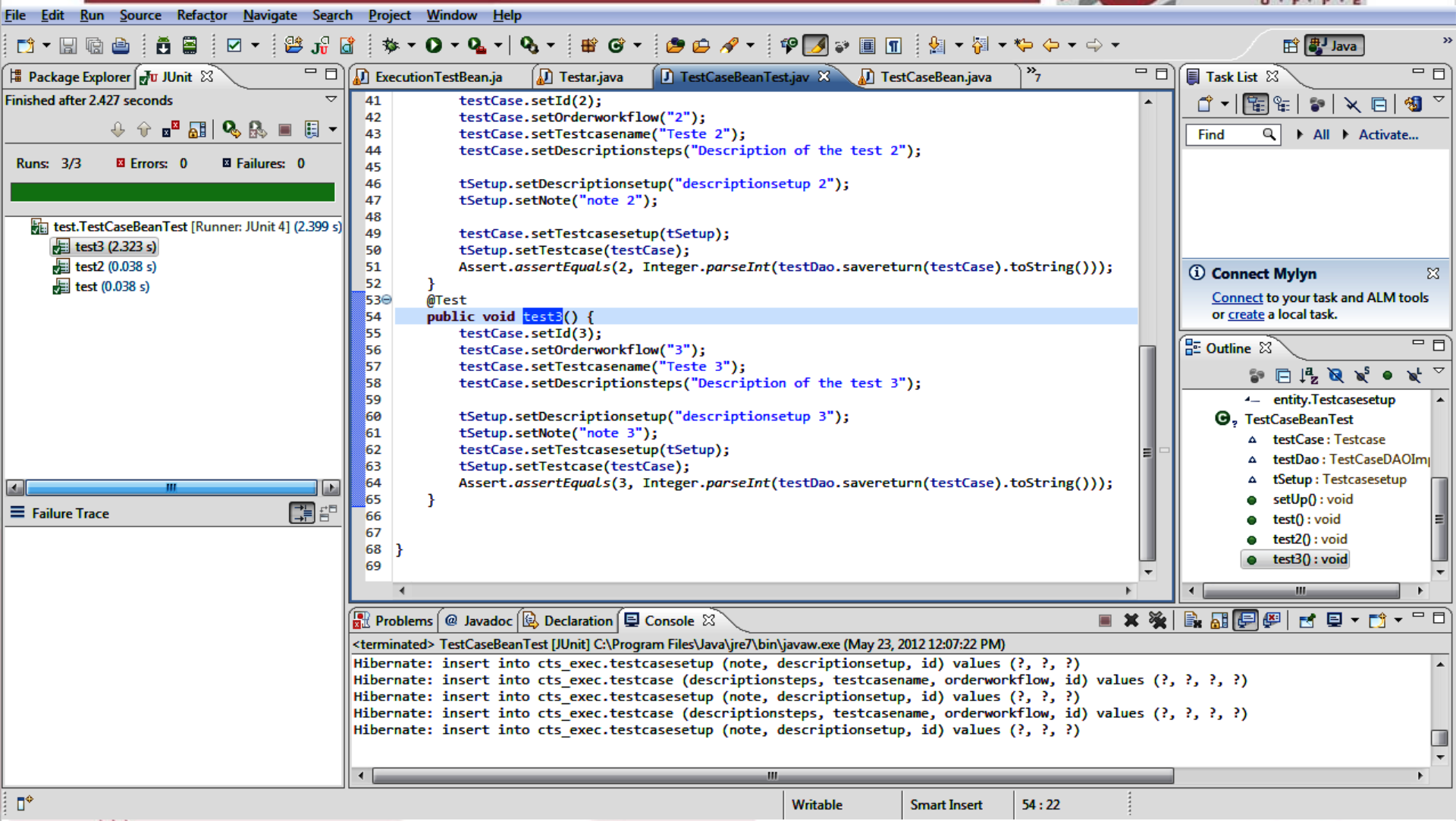
Implementation

- **Structure**:
  - JavaServer™ Faces (JSF) technology;
  - Architecture is based in the Model, View and Controller (MVC)



- **Tests**
  - White Box: Unit test and Integration test;
  - Black Box: Unit test and Integration test.

Implementation



Results Evaluation

- Initially, hand executions with the assistance of some artifacts;
  - Multiple interpretations;
  - Cause erros;
- With the tool:
  - Clarity;
  - Less exhaustive test;
  - Save time;

Results Evaluation

- Results Obtained
  - Estimates

	Experienced Tester	Inexperienced Tester
Without Tool	3h 40 m	5 h
With Tool	2h 19 m	2h 19 m
Difference (Without Tool – With Tool)	1h 21m	2h 41 m

The Tool

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Demonstration

Conclusion

- Results
  - Performing the test becomes more efficient and simpler;
  - Results are more consistent and standardized;
- Difficulties
  - Unstable requirements;
  - Tight schedule;

Future Work

- Improve the tool, adding new features;

- Add all other manual tests:
  - CTS Verifier
  - Data Migration Test
  - Widevine

Questions?