**BEAM Project Session 1/10**

My contact email: mgolden44@gmail.com

**Project Resources:**

1. Project’s Google account:

Login: caplutostudio@gmail.com

Password: sproject

2. Google Drive - Document Management and Sharing system

Provides access to the Project Documents

* Create/Download/Upload Doc
* Share Doc (options: view, edit, comment)
* Organize Doc

3. Bug Tracking System

Bugzilla:

**URL**:173.11.80.94:4615

**User ID:** [**beam-online@school.com**](mailto:beam-thu@school.com)

**PW: beam-online**

**Bugzilla Summary format:** *Your Name* - Bug/issue identification

4. Application Types Overview

5. **BEAM mobile app,** is currently only available on Android platform: <http://beamcall.com/>

QA build of BEAM app Installation:

**Installation from GOOGLE DRIVE:**

1. Upload and install GOOGLE DRIVE app on your mobile device.
2. Add [caplutostudio@gmail.com](mailto:caplutostudio@gmail.com) to your accounts (as existing one)
3. Login with [caplutostudio@gmail.com](mailto:caplutostudio@gmail.com), PW: sproject
4. Navigate to BEAM Online folder
5. Click Beam-0.7.45.3720.apk to install

**BlueStacks Emulator installation:** [**http://www.bluestacks.com/**](http://www.bluestacks.com/)

1. Download and install Bluestacks
2. Download Beam-0.7.45.3720.apk from the Project DRIVE to your PC
3. Click Beam-0.7.45.3720.apk to install

**Homework**

1. Google DRIVE Exercise:

* Create/modify/share a test doc at **your personal gmail account DRIVE**
* Download a doc from the [caplutostudio@gmail.com](mailto:caplutostudio@gmail.com) DRIVE and upload to your personal account DRIVE

1. BEAM app installation on your Android mobile device, smartphone or tablet or/and on BlueStacks Emulator
2. Application Study ( Application flow and functionality)
3. Report **Installation** and **Registration** issues to Bugzilla

**BEAM Project Session 2/10**

1. HomeWork Review: switch the Phone language setting to English.

* Add gmail account ([caplutostudio@gmail.com](mailto:caplutostudio@gmail.com) ) to to your Phone
* BlueStacks (and BEAM.apk on BlueStacks) installation and troubleshooting:

<https://getsatisfaction.com/bstk>

<https://getsatisfaction.com/bstk/topics/manual_method_to_install_apk_files_on_bluestacks_mac_version>

* Download a document from [caplutostudio@gmail.com](mailto:caplutostudio@gmail.com) DRIVE and upload to your personal account DRIVE - switch the Google accounts
* Bug review

**#2945 - Valid Registration (Smoke test) issue, incomplete bug info**

#3011-3013 - Valid Registration issue, incomplete bug info, non-Smoke test issues

**#3035- Valid Registration (Smoke test) issue, incomplete bug info**

#3036 - Valid Registration issues, incomplete bug info

**#3049 - Valid registration (Smoke test) issue, incomplete bug info**

#3014, #3015, #2016 (wrong module, out of assignment scope, incomplete)

#3051 - Valid (and excellent !!!) issue, incomplete info

1. Business requirements - Use cases doc
2. Testing Procedure:
   * Testing Environment(s)
   * Testing Type/Techunique
   * Application testing Scope
   * Bug Tracking System
3. Testing Environments (Hardware, OS, Networking, DB, WEB Server)

versus application release or build

* Production Env – Live/Beta/Production release– Open for users/public;
* QA Env – QA build /Pre-Production/Production release - internal use;
* Development Env – Dev builds - developer use

1. Application Testing Scope is defined by app Modules:

BEAM Application Modules (Components):

* Application download and installation
* BEAM Registration
* Dial/Call/Call History
* Messaging
* Contacts
* Setting
* Help

1. Bug Tracking System:

**Bugzilla**

Bug Report content:

* Summary: Your name - summary (short) description
* Description/additional comments: - Actual Result:Detailed issue/bug description
* Steps to reproduce
* Detailed mobile device info (Model,etc.)
* **Expected Result**
* **Your location (Country, State, City)**
* **Your internet and Mobile Service Provider (Operators**)
* Date and Time of the failure.
* Screenshot(s) attachments

1. Testing techniques/types
2. **Black Box/Smoke Test**

**DEFINITION:**

Smoke Testing, also known as “Build Verification Testing”, is a type of software testing that comprises of a non-exhaustive set of tests that aim at ensuring the most important app functions work. The results of this testing is used to decide if a build is stable enough to proceed with further testing.

The most important (major) BEAM Functions:

* Registration
* Dial, Call, Receiving call
* Send/Receive message

**Assignment #1**

**Env:** QA - Build Beam-0.7.45.3720.apk

**Testing technique**: Smoke Test

**Scope:** Major app functions (all app modules)

**Bug Tracking System**: Bugzilla

**URL**:173.11.80.94:4615

User ID: [beam-online@school.com](mailto:beam-thu@school.com)

PW: beam-online

Bugzilla Summary format: Your Name - Bug/issue identification

**Homework:**

Complete BEAM.apk installation (Android device or Bluestacks emulator)

Complete **Assignment #1**

Note:

If you are using Bluestacks or other emulator, you are still using your mobile Phone# to receive registration code, so it is better to include Mobile Service Provide even for emulator based testing.

**BEAM Project Session 3/10**

1. Homework Review:

* **Testing Procedure**
* Smoke Test/Build Verification Test
* Smoke Test Bugs review:

#2945,3035,3049, 3081 - Valid Smoke Test issues consistent with Assignment#1

#3082 - Valid and complete bug. Out of scope of Assignment#1/Smoke test

1. **Testing Procedure: Black Box Testing techniques/types:**

* **Smoke Test**
* Ad-hoc (informal)
* Test Case based (formal)
* Regression
* Usability
* Localization

1. **Localization Testing**

**Uninstall Beam-0.7.45.3720.apk and install**

Build: Beam-0.7.45.3777.apk

Localization testing requirements/attributes:

1. UI language and flows
2. App page layout (right-to-left language challenges )
3. Currency
4. Time zone (date and time format)
5. Collation /Sorting Order
6. Color and Font
7. Local Mobile Service Providers (Operators)
8. Integration with other apps

**Assignment #2**

Env: QA, Build: Beam-0.7.45.3777.apk

Testing type: **Localization**

Scope: All of app modules

Bug Tracking System: Bugzilla

1. **Homework:**

Complete **Assignment #2**

**Note: Use Localization Component to report the issues**

**BEAM Project Session 4/10**

1. Homework Review:

* Testing Procedure defines attributes of testing assignment: env/build, testing type, testing scope, bug tracking system and bug content.
* **Assignment #2**: Localization testing results

[Bug 3127](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3127)- Kristina: do not receive registration SMS

[Bug 3111](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3111)- Kristina: unclear currency description

[Bug 3087](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3087) - andrii mashaiev dizon- mobile app crashes upon pressing 'send' button in drop menu tree - Request for the info by development

1. Testing techniques - Test Cases (Formal)

Test Case Format/structure

**Assignment 3:**

Env: QA:Build: Beam-0.7.45.3777.apk

Testing technique: Test Cases - create and execute

Scope: Registration Module, Call Module

1. Homework:

Create your own BEAM TC doc. on your Personal account Google DRIVE (Download BEAM Project TC-online doc. and upload it to your Personal account Google DRIVE)

Complete **Assignment #3: complete/write test cases, post execution results to Execution Matrix including Bug number references for submitted to Bugzilla bugs.**

**Assignment 3:**

Env: QA:BEAM- Beam-0.7.45.3777.apk

Testing technique: Test Case

Scope: Registration Module, Call Module

Report execution bugs to Bugzilla

**Note: Include TC (for Test Case) to Bugzilla Bug Report’s Summary.**

**BEAM Project Session 5/10**

**Session 6- Friday, Dec 27 Session 7- Friday, Jan 3**

1. Homework Review:

Test Cases: Assignment #3:

[Bug 3057](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3057) - Anna S: Accepts more than 10 digits in the phone# field - Very important BUG,

[Bug 3084](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3084) - Lara - Program crashed after pressing the "Hang Up" button during Test call

Bug 3053-Confirmation Code input field length (Zhenya)

[Bug 3218](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3218) - Yuriy Gogol: registration failed - Log file (aLogcat) is to be attached!

1. Bug Life cycle
2. Gray Box Testing - Android Virtual Device (AVD)
3. Test **Cases - Mobile testing**

Assignment **#4:**

Env: QA:

Testing technique: Mobile Test Cases

Scope: All BEAM components

1. Homework:

* Install AVD and Beam-0.7.45.3777.apk
* Complete Assignment #3

Env: QA:BEAM- Beam-0.7.45.3777.apk

Testing technique: Test Case

Scope: Registration Module, Call Module

Report execution bugs to Bugzilla

**Note: Include TC (for Test Case) to Bugzilla Bug Report’s Summary.**

Tip: Steps to successfully complete Assignment #3

1. Complete/write Test Cases,

2. Execute TC.

3. Submit Bug Reports for execution failures, include BR# to execution matrix.

4. If Bug Report has been already submitted, include existing BR# to execution matrix.

* Share your Test Case spreadsheets in GOOGLE DRIVE format

with [mgolden44@gmail.com](mailto:mgolden44@gmail.com), COMMENT option

**Doc naming convention: Online-Your Full Name**

**BEAM Project Session 6/10**

1. Homework Review:

* Your personal Test case doc (DRIVE format), **Online TC - Your Full Name,** at Google DRIVE of your personal Google account, shared with [mgolden44@gmail.com](mailto:mgolden44@gmail.com) (Can comment option)
* Test Cases for Registration and Dial/Call modules completed
* Test Case execution results posted, Bug reports submit

<http://www.cisco.com/en/US/tech/tk652/tk698/technologies_white_paper09186a00800a8993.shtml#standarfordelaylimits>

1. Test Cases - Mobile testing

**Assignment #4:**

* Env: QA:
* Testing technique: Test Cases
* Scope: All BEAM components

1. **Interview preparation: Project Notes**

* Company overview
* Application overview including services and functionality (rivals-Skype/Viber, business model)
* Testing environments (QA), Bug Tracking System
* Assignments and Testing Procedure.
* What you did:
* Downloaded and installed mobile app (.apk file) on Android mobile device(s) and/or Bluestacks emulator
* Downloaded Java and Android SDK packs to install AVD and BWAM.apk file to run the app.
* Performed **Smoke Test/Build Verification Test**
* Performed **Localization testing** according to Localization attributes(examples). **Example Bug reports.**
* Tested BEAM app components by creating **Test Cases** and reporting execution issues. **TC and Bugs examples**
* Performed Exploratory/ad-hoc testing. **Bugs examples**
* *Performed Regression/Usability testing*

1. Homework

1. Complete Testing assignment #4, report execution issues to Bugzilla:

**Start bug report Summary with MT** -

2. Complete and share Personal Test Case doc, **Online TC - Your Full Name**

3. Start Project Notes

**BEAM Project Session 7/10**

**Session 8- Tuesday , Jan 7th**

1. Homework review

Mobile TC and execution

*Lara*

*Anna Shustrova*

*Polina Fiksson*

*Dmitry Dyuryagin*

*Katya*

Project Notes

1. Testing technique (continuation):

* **Regression**
* Usability

1. **Regression Testing**

Regression testing means re-running/re-executing existing test cases or perform another ad-hoc testing cycle to make sure that software changes (bug fixes and/or new features implementation) have no unintended side-effects or broken application behavior observed BEFORE the change.

* **Automated testing can be especially useful for Regression testing.**

[**http://www.soasta.com/testing-solutions/mobile-application-testing/**](http://www.soasta.com/testing-solutions/mobile-application-testing/)

[**http://www.borland.com/products/silkmobile/**](http://www.borland.com/products/silkmobile/)

* **Major challenge is defining a scope of regression testing**

1. **Testing procedure:**

**Release notes** is a doc that describes the a build/release including s/w changes, new features, and/or bug fixes.

*Release Notes Example (you don't have access to the below bugs with Bugzilla):*

Today we've released the Beam-0.6.44.3616.apk to QA env

Build includes the following bug fixes:

#6216 #6214 #5990 #6015 #6199 #6174

**Testing activities:**

* Smoke test/Build Verification
* Bug verification and bug status update (Fixed)
* New features/functions testing (can include new Test Cases)
* **Regression testing (** Ad-hoc/Test Case based/Usability)
* Report New bugs/issues

1. **Interview questions: Interactive Q and A**
2. **Homework:**
3. Complete Testing assignment #4
4. Complete and share Personal Test Case doc, **Online TC - Your Full Name**
5. Continue Project Notes

**BEAM Project Session 8/10**

1. Homework review (Project notes,
2. Testing technique (continuation):

* **Usability Testing**

**Definition of Usability**

Usability is a **quality attribute** that evaluates user experience (interfaces, app navigation, functionality).

Usability is defined by **a number of quality criterias by two categories - ease-of-use and satisfaction**:

* **Learnability :** How easy is it for users to accomplish basic actions/tasks the first time they use the applications? **(ease-of-use)**

**Actions:**

- *Registration process*

-*Call*

-Send *message*

*- Add/manage contacts*

* E**fficiency** : Once users have learned application design, how quickly (numbers of clicks) can they navigate it or/and perform actions? **(ease-of-use)**
* **Memorability** : When users return to the application after a period of not using it, how easily can they re-establish understanding of required actions? **(ease-of-use)**
* **Errors**: How many errors do users make, how severe are these errors, and how easily can they recover from the errors? **(ease-of-use)**
* **Satisfaction**: How pleasant is it to use the application? (emotional response):

*Look-and-feel,* ***UI and language consistency****, intuitive navigation, sufficient help/info*

**For mobile apps:** app integration (Contact management, Call and message history)

**Major challenge - distinguish the difference between usability and functional/GUI issues**

**Assignment #5:**

* Env: QA:
* Testing technique: Usability
* Scope: All BEAM components

Bug Reports for Usability Bugs:

Observation, Steps to reproduce, Suggestion, Device info. **Attachments**

1. Homework:

1. Complete **Assignment #5,** report issues to Bugzilla:

Start Summary with **Usability** - …….

2. Complete Project Notes

**BEAM Project Session 9/10**

1. Homework review

Usability bugs review:

[**Bug 3311**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3311) - Polina Fiksson-A cut sentence in a pop-up box in "Settings"

- Valid GUI bug with usability impact

[**Bug 3312**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3312) **-**Polina Fiksson-Inconsistency in style of the headings in "Help" section - Valid and well put usability (cosmetics) issue.

[**Bug 3310**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3310) **-**Dmitry Shatalov- "About" screen doesn't contain necessary navigation buttons - While consistent with standard ‘About’ implementation can be a Valid usability issue

[**Bug 3309**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3309) **-** Anna S Numbers on Beam Keypad appear cut-off - Valid GUI bug, not usability

[**Bug 3307**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3307) **-** Anna Om-No theme change - Excellent observation of not-kept promises

[**Bug 3305**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3305) and [**Bug 330**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3305)**6** - Valid FUNCTIONAL bugs.

[**Bug**](http://173.11.80.94:4615/bugzilla3/show_bug.cgi?id=3305)**s 3231- 3243**  from Iuliia - Excellent content validation issues with usability impact

1. **Interview preparation: Project Q**

* Tell about the company
* Tell about Application
* How did you do (regression testing, browser/device compatibility testing, test case execution, bug reports)
* Testing environment(s)
* Give me a few examples of the bugs you found and/or Test Cases you created and/or executed
* Challenges/achievements you had while testing the app - Have examples ready!

Q1. Write a functional test case for your study project.

Q2. Give me an example of an app feature from your study project you tested using black box technique.

Q3. What is your regression testing strategy for the study project?

Give a list of activities in order of their execution.

Tell me how you performed regression testing.

Q4. Give me an example of a feature from your study project which you would be testing using Gray Box technique and tell me WHY it is a good candidate for the gray box testing

Q5. Give me an example of functionality that is important to test across OS and/or Browsers and WHY

Q6. Write a usability defect for your study project

Q7. Give me an example of the automated test case for your study project.

Q8. Describe your project Testing procedure

Q9. How to install executable (.apk) file on a mobile device and/or AVD?

Q10. How to make a screenshot on a mobile device and transmit image to your Bug Report attachment?

Q11.

Homework:

Interview preparation: Project Q and A

**BEAM Project Session 10/10**

**Q1.** Write a functional test case for your study project.

**A1:** Functional test case is to verify that a business requirement/expected result, is properly designed and implemented by the application.

Functional TCs for “Call” module are good examples of Functional TCs

**Q2**. Give me an example of an app feature from your study project you tested using black box technique.

**A2:**

* Applying registration code
* FREE calls within BEAM network (call recipient is ONLINE)
* Contact management (Create/Edit/Delete)

**Q3**. What is your regression testing strategy for the study project?

Give a list of activities in order of their execution.

Tell me how you performed regression testing.

**A3:**Tested multiple builds in QA and Production env.

Regression testing strategy was based on re-execution existing test cases for the defined components (Registration, Call/Message) impacted by new or changed code. Reported execution issues to Bug Tracking tool, Bugzilla

**Q5**. Give me an example of functionality that is important to test on different mobile devices and WHY

**A5:** Registration related functionality was to be tested on a variety of mobile devices and systems. WHY: to ensure device and OS app compatibility

**Q6**. Write a usability defect for your study project

**A6:**

* Inconsistent use of *SMS* and *message* wording
* Pale font of registration page
* Registration page name is *Personal Information,* suggestion*: Registration*
* Nice-to-have app feature: *applying registration code automatically*

**Q7**. Give me an example of the automated test case for your study project.

**A7:** Automation was out of scope of the project, however, TSs of Registration module are the first candidate for automation to perform Regression testing.

**Q8.**Describe your project Testing procedure

**A8:** According to testing procedure Assignment included

a) Environment (Prod or QA),

b) Testing technique: Test-case/Ad-hoc (to perform Localization, integration testing) and/or Usability.

**For a new build Smoke test (Build verification), Bug verification and Regression testing were also required.**

c) App Scope/Component (Registration, Call, Setting, etc.).

d) Bugzilla instance to report bug/issue by app component.

**Q9.** How to install executable (.apk) file on a mobile device and AVD?

**A: AVD:**

* AVD Manager must be installed and running
* Put **.apk** file to “C:\Program Files\ (x86)\Android\android-sdk\platform-tools” directory
* Install Genietrack.apk application on a virtual device by running

**adb install <full file path to the .apk file >:**

adb install "C:\Program Files (x86)\Android\android-sdk\platform-tools\beam-xxx .apk".

**A: Mobile device:**

* Download .apk file onto mobile drive from a desktop computer
* Click the file to install
* Allow to install from not secure source

or

* Upload .apk file onto GOOGLE DRIVE
* Install GOOGLE DRIVE app on a mobile device
* Locate the file on the DRIVE and click to install

**Q10.**  How to make a screenshot on a mobile device and transmit image to your desktop computer?

**A10:** Depends on mobile device (push and hold “Start” and “Volume” buttons, for instance)

**Q11**: Give an example of your app crash and your actions.

**A11:** Intermittent runtime app failure. Samsung devices were more crash prone as opposed with Motorola ones.. See Bug Report on BEAM crashes. Attachments included log file.

In **Gray Box Testing** the internal application structure is partially known. It also involves access to internal data structures and algorithms for purposes of creating the test cases. Test case execution may involve use of external applications (AVD), tools and/or scripts.

**Grey Box example**: using SQL to access internal app data stored within a Database.

* Verify versus Validate

**BI demo**