Software verification and validation
CS3417 & SC4437

Term Project
AU Spark Testing

Submitted to
Aj. Kwankamol Nongpong

Submitted by
Mr. Jirasin Jirasakul No. 5610189
Mr. Supanat Techasothon   No. 5611779

Assumption University of Thailand
Semester 2, 2016

Step 1: Analyze the product

The test plan is designed to prescribe the scope, approach, resource, and schedule of all testing activities of the project AU Spark.

AU Spark is application for Assumption University's students to access their academic information and check course offered, schedule, and calendar.

This test focus on testing AU Spark application on Android platform.

Step 2: Develop Test Strategy

- **Step 2.1:** Define scope of testing
  - **2.1.1** Feature to be tested

Module Name	Description
Log in	Only students' account of Assumption University would be accepted by the system with using student ID and password
Advisor information	Student can see their courses who their advisors force and recommend courses to register in the next semester.
Advisor contact	Student can access to see their advisor contact
Login with Facebook	Student can connect to facebook with their Facebook account but not use as username. After connected, student would be able to see their friends who study at AU's plan
Advising	Show the correct information
Grade list	It must allow students to view grades in 2 types or view 1. By semester where grades are grouped according to the subjects they enroll each semester sorted by latest come first configuration 2. By curriculum where all subjects are grouped according to groups of subject of his/her curriculum 3. By curriculum where all subjects are grouped according to curriculum on faculty/major of his/her student and also show status and result grade in each subject.
Forgot Password	Student can request to change new password without ...
Schedule	It must allow student to view their schedule in 3 views 1. Current Semester Class Schedule 2. Current Semester Exam Schedule

	3. Previous Class Schedule and Previous Exam Schedule
Class search	For every search, the resulting subjects must be for the current and coming coming semester.
	Search is done by either using subject code or subject name
Plan for registration (Generate schedule + Constraints)	Students would be able to plan their registration plan within their credit limit. Subject that overlap each other would not be allowed. They would be able to include constraints to help filter with the combination results. Students would be able to mark their plans as favorite. Students would be able to delete or modify their plans.
Register	They would be able to register the plan they choose given that it is within their registration period and every subjects in the plan still have at least 1 seat left at the time.
	Once the plan is registered the success plan is shown.
	Student can modify their pre-registration result and also has chance to modify their pre-registration result with 3 times
Calendar	Calendar must show every holiday in the calendar and tell if the day is a holiday or do not have class.
Grade Estimate	It must allow students to estimate their grades according to their subjects where the grades have not been released yet.
Grade Summary	It must group subjects according to their grade. It must shows GPA by semester in chart form. It must shows how much or each grade they have get.
Change Password	Student can request to change password
Rate Us	It will redirect to AU Spark apps on google store
Logout	After logout the student would not be able to use other features unless they login again.

- **2.1.2** Feature not to be tested

  These feature are not be tested because they are not included in the software requirement specs

- Layout Design: How each object align or allocate on the screen. Because we do not have software document that specify how they suppose to locate.

- Hardware Interfaces: How each object align when use with different hardware. Not to be tested since we do not have document which tells the version supported by the software or how it should act when install on each device.

- Database logical: How database design and information retrieval is implemented. Not to be tested since we do not have access to them.

- Website Security and Performance: How security measures is designed and implemented. Not to be test since we do not want to focus our test on security but rather functionality.

- **Step 2.2:** Identify testing type
  - Functional test : Testing for when all modules in the system work together and give out the correct responses
  - Install/uninstall : Test if the installing and removing the system out do not affect the environment.
- **Step 2.3:** Document Risk & Issues

Risk	Mitigation
Invalid information form	Ask information source controller to check the source of information for correctness
Out of date information source	Ask information source controller to update the information
Lack of cooperation	Encourage them to endure their task for the sake of the goal

- **Step 2.4:** Create test logistics
  - Who will test ?

- Toy and Ball as test designers and testers
- When will test occur ?

    Test will start when the following conditions are met

    - Software is available for testing
    - Test Specification is created
    - Test Environment is built

Step 3: Define test objectives

- The test objectives are to verify the Functionality and Displaying Information in platform of AU Spark, the project should focus on testing the displaying information on AU Spark apps such as Academic Record, Class Schedule, Calendar, Course , Advising Information..etc. Also, to guarantee the pre-registration process can work normally in real business environment.

Step 4: Define test criteria

4.1 Suspension Criteria

- If cannot login, wait until the feature is fixed by developers.
- If cannot connect to facebook, cannot test see friends' plan.
- If cannot create new plan, cannot mark favorite, edit, delete, register plan.

4.2 Exit Criteria

- Specifies the criteria that denote a successful completion of a test phase
    - Students must be able to
        - login/ logout
        - Create new plan
        - Create new plan with constraints
        - Mark the plan as favorite
        - Update the plan
        - Delete the plan
        - Register with the plan within their allowance time period
        - See grade list by semester and by curriculum

Step 5: Resource Planning

5.1 System Resource

No.	Resource	Descriptions
1	Test tool	Develop a Test tool which can auto generate the test result to the pre- defined form and automated test execution on Appium desktop application
2	Network	Internet speed must not be enough that it would not cause request timeout in the system.
3	Android devices	10 different models of android phone using different sdk version
4	Student ID	List of student ids. 5 from each batch of each major of each faculty.

5.2 Human Resource

No.	Member	Tasks
1	Tester	Identifying and describing appropriate test techniques/tools/automation architecture - Verify and assess the Test Approach - Execute the tests, Log results, Report the defects. - Outsourced members

Step 6: Plan Test Environment

The Test Environment should be setup as figure below

Step 7: Schedule and Estimation

Task	Members	Estimate effort
Create the test specification	Tester	10 man-hour 5x2
Perform test execution	Tester	48 man-hour 2x2x4x3
Test Report	Tester	4 man-hour 2x2
Test Delivery		2 man-hour 1x2
Total		64 man-hour

Step 8: Determine test deliverables

8.1 Before testing phase
- Test plans document
- Test cases document
- Test Design specifications

8.2 During the test
- Test Data
- Error logs and execution logs

8.3 After the testing cycle is over
- Test Result/Report
- Defect Report