

# Sprint Retrospective, Iteration # 6

Context Project: Blockchain

Group: BullsBearsWolves

## Introduction

This week started off with a meeting with our Software Engineering TA. This meeting changed the course of this week's sprint. Initially the focus was laid on the GUI, which wasn't a priority, because our goal isn't to build an app. The TA pointed out that the structure of our code was hideous, which we agreed on. So we took a whole day to gain knowledge about the structure of our program and made a new UML with a clear structure and split classes with a lot of responsibilities. Next what we did is looking at it with the TA, so he could approve it. This was on thursday. When this was done, note that we were almost at the end of the week, we started refactoring. This took longer than expected, because of various reasons, for example tasks were still dependent on each other. We tried to avoid these kind of conflicts by using pair programming. The result is still that we couldn't finish the refactoring for this sprint. Resulting in a relatively small difference with the code of last sprint.

User Story	Issue #	Task	Members worked on	Estimated Effort per Task (in hours)	Actual Effort per Task	Done? (yes/no)	Notes
As a developer, I want to have a draft of the structure of the Graphical User Interface	121	Updating the Main Page activity document.	Naqib	1	0	No	obsolete
	122	Updating the Pair Page activity document	Naqib	1	0	No	obsolete
	123	Updating the Friends Page activity document	Naqib	1	0	No	obsolete
	124	Creating the Transaction Page activity document	Ashay	2	0	No	obsolete

	125	Updating the Contact Page activity document	Ashay	1	0	No	obsolete
	127	Creating the Friend Contacts Page activity document	Ashay	1	0	No	obsolete
As a user, I want to optimize the addition of someone else their blockchain to my database.	132	Documentation	Luat	2	0	No	This week's focus was on refactoring the code. This task was based on the previous architecture.
	132	Testing	Luat	4	0	No	
	132	Implementation	Luat	4	0	No	
As a developer, I want to be able to generate a public and private key pair per user using the ED25519 protocol.	134	Documentation	Jasper	2	1	yes	
	134	Testing	Jasper	4	4	yes	
	134	Implementation	Jasper	4	6	yes	
As a developer, I want to be able to save a generated public and private	139	Documentation	Jasper	2	1	yes	
	139	Testing	Jasper	3	4	yes	

key pair per user in the database.	139	Implementation	Jasper	4	4	yes	
As a developer, I want to be able to use the generated public key in the genesis block as key attribute.		Documentation	Jasper	1	0	no	All the functions were being refactored. As a result this was a task that had to wait to avoid double work.
		Testing	Jasper	4	0	no	“
		Implementation	Jasper	4	0	no	“
As a developer, I want to automatically encrypt my personal data with the AES-CBC encryption protocol upon creating a block.	138	Testing	Luat	1	0	no	This would be a contribution to the old code. Since we agreed that we would focus on refactoring, this task was postponed in order to avoid double work.
	138	Implementation	Luat	1	0	no	“

As a developer, I want to automatically decrypt my personal data with the AES-CBC encryption protocol upon reading out a block.	138	Testing	Luat	1	0	no	This would be a contribution to the old code. Since we agreed that we would focus on refactoring, this task was postponed in order to avoid double work.
	138	Implementation	Luat	1	0	no	“
As a developer, I want to refactor my BlockController into multiple classes. Into BlockController, BlockVerificationController and TrustValueController.	140	Implementation	Ashay	4	7	no	Not merged yet, because the integration with the database is missing.
	140	Testing	Ashay	4	2	no	“
		Documentation	Ashay	1	0	no	“
As a developer, I want to be able to persist my user in the database	136	Documentation	Ashay	2			
	136	Testing	Ashay	2			
	136	Implementation	Ashay	2			

As a developer, I want to be able to retrieve a user from the database	136	Documentation	Ashay	1			
	136	Testing	Ashay	1			
	136	Implementation	Ashay	1			
As a user, I want to be able to login/register using a password	133	Documentation	Luat	2	0	no	Luat could not meet Stefan due to Stefan his busy schedule. So we decided not to do this task because it is also GUI related.
	133	Testing	Luat	2	0	no	“
	133	Implementation	Luat	4	0	no	“
As a developer, I want to be able to add a relation between the blocks table and user table	137	Documentation	Ymte	1	0	no	Not yet.
	137	Testing	Ymte	3	2	yes	
	137	Implementation	Ymte	3	3	yes	
As a developer, I want to create a UML to get a better overview of	135	UML of all Model classes	Ymte, Luat, Naqib, Ashay, Jasper	1	Ymte: 2 Jasper: 1/2 Ashay: 1/2 Luat: 5 Naqib: 5	yes	The reason why this took so long was because our previous UML told us how messed up our code was. We

the classes in my code.							had to find a good architecture since there is not much time left. In the begin we discussed whether we would create API, Model and Storage packages and have Action controllers. The complete team did not agree on this idea and then we decided to create Database packages (with queries), Blockchain Components (with user package, block package and key package in it). Then we had to find a creative way how these mappes would interact.
	135	UML of all View classes	Ymte, Luat, Naqib, Ashay	1	Ymte: 1 Jasper: 1/2 Ashay: 1/2 Luat: 1	yes	“

					Naqib: 1		
	135	UML of all Controller classes	Ymte, Luat, Naqib, Ashay	2	Ymte: 2 Jasper: 1/2 Ashay: 1/2 Luat: 5 Naqib: 5	yes	“
As a developer, I want to use the BlockController instead of the BlockFactory to create blocks.	131	Refactoring inside main code	Ashay	2	2	yes	
	131	Refactoring inside unittests	Ashay	4	3	yes	
	131	Fixing failing unittests	Ashay	4	1	no	Not finished yet. Waiting for the complete refactoring.
As a user, I want an algorithm that calculates user trust values more accurately using the inverse exponential function for successful transactions and exponential functions for failed	130	Implementation	Jasper	2	8	yes	The creation of the distribution function took a very long time. Next, the distribution function had to be optimized and adjusted for our trust value implementation. Finally, the implementation contained a bug,

transactions to increase/decrease the trust value.							which also took quite a time to find.
	130	Testing	Jasper	1	2	yes	
	130	Documentation	Jasper	1	1	yes	
As a developer I want to extract an abstract class out of the adapters because I want to reduce duplicate code	129	Implementation	Ymte	2	0	no	This issue is in conflict with issue number 126. Thus obsolete.
	129	Documentation	Ymte	1	0	no	“
As a user I want to have user-friendly and self learning GUI because I don't want to use a difficult application	128	Refactoring Main Page such that we have a login module and some nice buttons where we can surf through the pages.	Naqib	3	0	no	We let go of the whole GUI since this is not our project task. The GUI how it is now is fine.
	128	Refactoring the Friends Page such that the trust is updated correctly, app should be able to assign the name, etc .	Luat	2	0	no	“



	128	Refactoring DisplayContactFriendListActivity such that the addbutton for the pairing contact is removed, the trust graph to update properly	Luat	2	0	no	“
	128	Refactoring the Contacts Page such that the buttons are not overlapping and the make a transaction is put somewhere else when the list of contacts is big. Also change the lay out and make the table more descriptive.	Naqib	3	0	no	“
	128	Refactoring the Pair Page such that we do not have hard coded test subjects.	Naqib	3	0	no	“
	128	Refactoring the Transaction Page such that the information of the transferor and transferee is retrieved via testable code and the budget is also updated correctly.	Naqib	4	0	no	“
	128	Refactoring the Friend Contact Page such that this is the same as the own contact list. You should not be able to revoke their contacts.	Naqib	2	0	no	“
As a developer I want to create a databaseseeder,	126	Implementation	Ymte	4	0	no	This task is postponed since it would affect the refactored code.

such that it decreases duplicate code in the adapters.							The priority was also not high enough so we decided to postpone this task.
	126	Testing	Ymte	4	0	no	“
	126	Documentation	Ymte	2	0	no	“
As a developer I want to have a clear Requirements document that is approved by the TA.		Writing	Ashay	3	1	no	This will be done in the weekend before Saturday evening. Stefan (our TA) has promised us to take a look at it and give us feedback so we know what requirements are.
As a developer I want to refactor the existing code in a way that I have five packages: Database, Blockchain Components, API, Activities and Controllers/Handlers.		Refactoring the Database according to the UML.	Ymte	4	8	no	Not finished yet.
		Refactoring the Blockchain Components according to the UML.	Naqib en Luat	8 (pair programming)	12	yes	
		Creating an API according to the UML.	Ashay	3	5	yes	
		Refactoring the Controllers/Handlers according to the UML.	Ashay	4	6	yes	

		Refactoring the Activities according to the UML.	Naqib & Ashay	4	6	yes	
As a developer I want to do a step back and analyze the current code in order to find the weakness in my software.		Analyzing	Naqib Ymte Luat Ashay Jasper	Naqib: 5 Ymte : 5 Luat : 5 Ashay : 2 Jasper : 2	Naqib: 5 Ymte : 5 Luat : 5 Ashay : 2 Jasper : 2	yes	

## What went well

1. Before creating a PR the formatting was correct. This way we did not have to review these kind of errors.
2. The pull requests were well reviewed. The comments made sense and this resulted in code improvement.
3. The 'kut punten system' was updated correctly. This way (most of) the members were sharp.
4. We wrote the retrospective together so this way every knows the status of the project.
5. We made sure that person that creates a pull request is not the same person that merges the changes into develop. This way everyone was responsible for the changes and the last person that approved had to merge. This person had to check whether the changes were made.

## What went wrong

1. We did not know what the exactly requirements were until friday. We contacted the TA (Stefan) but he said that he could meet us friday with Johan. This way we did not know until the end of the sprint whether we were on the right course. We still have a problem because he will study our requirements this weekend, so we get his feedback on monday
2. Ymte went radio silent on the day of the meeting with the TAs and Johan (09/06/2017), we could not reach him by any means, this is unacceptable. We do not want to kick him out of the group, but we need to do something about this.
3. Members were having personal appointments left and right. This should not be a problem, but as we are approaching the end of the project, this should be minimized at all cost, especially during the regular meeting hours (from 9:30 to 13:00) every working day.
4. The sprint backlog of this week was incorrect. It wasn't made well and therefore a lot of tasks were omitted. Also the tickets did not correspond so new tickets had to be made.
5. Because other tasks had higher priority, we prioritized them above the tasks of the current sprint. This was the cause of the planning becoming a little bit chaotic. The same holds for the github project.
6. Since everything was refactored, we could not fix the checkstyle/pmd/findbugs errors before the refactoring was done and this was also the cause of the delay and the cause of the tasks not being done.
7. Travis took a really long time to run the tests. Almost every running task took around 2 hours to finish and even then, some jobs failed, because the android emulator would not start. So we had to restart the jobs again. So we had to wait a really long time for the travis task to finish and thus also wait a really long time for a pull request to merge. Although the code was correct.
8. We did not manage to test the activities (yet). A lot of effort was put in this task by some members and we feel like we make progress but it still does not result in some coverage. We first tried to write tests that would just make sure some buttons were clicked. We did not hit any methods or lines. Then we did lots of research on the internet, but a lot of proposals were outdated. After one of the member spoke with Martijn, he said that Martijn suggested to checkout Nervous Fish's repository. They managed to test activities. We tried to test it like they did (via Cucumber) but still got the error 'Instrumentation Runner class not specified' (See commit: 4224c1c). Then we tried to do it the old way (just via @Runnerwith(JUnit4).
9. A lot of tasks were dependent on the other tasks, such as the refactor. A lot of new implementations/ functionality were dependent on the refactor. And because the refactor was not finished, the new implementations/ functionality could not be done. This is not only the groups fault, because we confirmed the UML on thursday and still the requirements have to be confirmed.

## How should we improve

1. Heavy penalty should be applied if this happens one more time in the future. This will be brought immediately to the TA and a proposal will be made to have this member excluded from the group. The decision is left to the TA. This penalty will be applied to any member of the group who absent without a reason and communication.
2. If a member is absent because of his/her own personal reason during regular meeting hours (from 9:30 to 13:00), for example a personal appointment, this member will have to give a reasonable reason to the group, and will have to be present from 9 am to 7 pm at the university for the next two (2) working days (any dishonest will NOT be tolerated if found) or should have finished their tasks, which have been set at the daily sprint.
3. Everyone should update the architecture design, according to their changes to the code.
4. The pull requests should be split up to address 1 or max 2 issues.
5. Everyone should be responsible for their own checkstyle/ pmd/ findbugs/ code coverage. The pull requests should not be merged, before these issues have been fixed.
6. For testing purposes: We should change some methods that are created in the activity classes such that we can access them via the layout XML files.
7. The refactor of the main code should have the utmost priority. Almost all new implementations are dependent on the large refactor.
8. If someone does not have finished his task before the weekly deadline and does not have a good reason (or reasonable amount of invested effort) for it, he will be kicked from the group without any further questions and/or will not participate in this project anymore.