Course: COMP 3250- Software Engineering

Lecturer: Dr. Andrew Borg

Group: SCRUMptious

Group Members: Mitra Kalloo, Amit Maraj,

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Product Backlog:

USER STORIES

1. As a customer, who has multiple bank accounts (in several banks,) I want to be able to view my balance in order to transfer funds between my accounts.
2. As a customer, I want to be able to view my balance in order to transfer funds to another person's account.
3. As a customer, I want to be able to view all my account information in order to manage my accounts.
4. As a tester, I want to be able to test my test cases in order to debug my application.
5. As a developer, I want to be able to create a user interface in order for users to easily use my application.
6. As a customer, I want to be able to view my transaction history in order to keep a record of my bank activity.
7. As a developer, I want to be able to create a database in order to store information.
8. As a developer, I want to be able to refactor the user interface in order to create a better application.
9. As a developer, I want to be able to refactor code in order to make the application more efficient.
10. As a developer I want to be able to create a logout method in order to let customers log out without closing the application.
11. As a customer, I want to be able to access my credit card(s) in order to transfer funds from my Savings/Chequing account.

12. As a customer, I want to be able to register my utility billers in order to make bill payments.
13. As a developer, I want to be able to create a printing method in order to allow the customer to print bank statements.
14. As a customer, I want to be able to download my transaction log in the form of a document in order to keep an offline record of my banking activity.
15. As an administrator, I want to be able to add new items to the database in order to update the system.

Sprints:

SPRINT 1:

User Stories	Breakdown	Hours Allocated	Status
7. As a developer, I want to be able to create a database in order to store information.	- Create database - Add banks - Add clients	8	Completed
5. As a developer, I want to be able to create a user interface in order for users to easily use my application.		4	Completed
1. As a customer, who has multiple bank accounts (in several banks,) I want to be able to view my balance in order to transfer funds between my accounts.	- Write methods to retrieve relevant information from the database - Ensure the database can perform this task.	4	Completed
4. As a tester, I want to be able to test my test cases in order to debug my application.	- Write test cases and run them - create a test suite to run all created test cases	4	Completed

SPRINT 2:

User Stories	Breakdown	Hours Allocated	Status
3. As a customer, I want to be able to view all my account information in order to manage my accounts.	- Write methods to retrieve relevant information from the database	4	Completed
6. As a customer, I want to be able to view my transaction history in order to keep a record of my bank activity.	- Create transaction log - Write methods to update log	4	Completed
2. As a customer, I want to be able to view my balance in order to transfer funds to another person's account.	- Write method to transfer funds	4	Completed
4. As a tester, I want to be able to test my test cases in order to debug my application.	- Write test cases and run them	4	Completed

SPRINT 3:

For this sprint, the members of SCRUMptious opted to do fewer user stories since they all had other commitments.

User Stories	Breakdown	Hours Allocated	Status
8. As a developer, I want to be able to refactor the user interface in order to create a better application.	- Create login page - List banks that belongs to a user - List accounts of the user per bank - List the transaction log	8	Completed
9. As a developer, I want to be able to refactor code in order to make the application more efficient.	-Revise exception handling etc.	4	Completed
4. As a tester, I want to be able to test my test cases in order to debug my application.	- Write test cases and run them	4	Completed

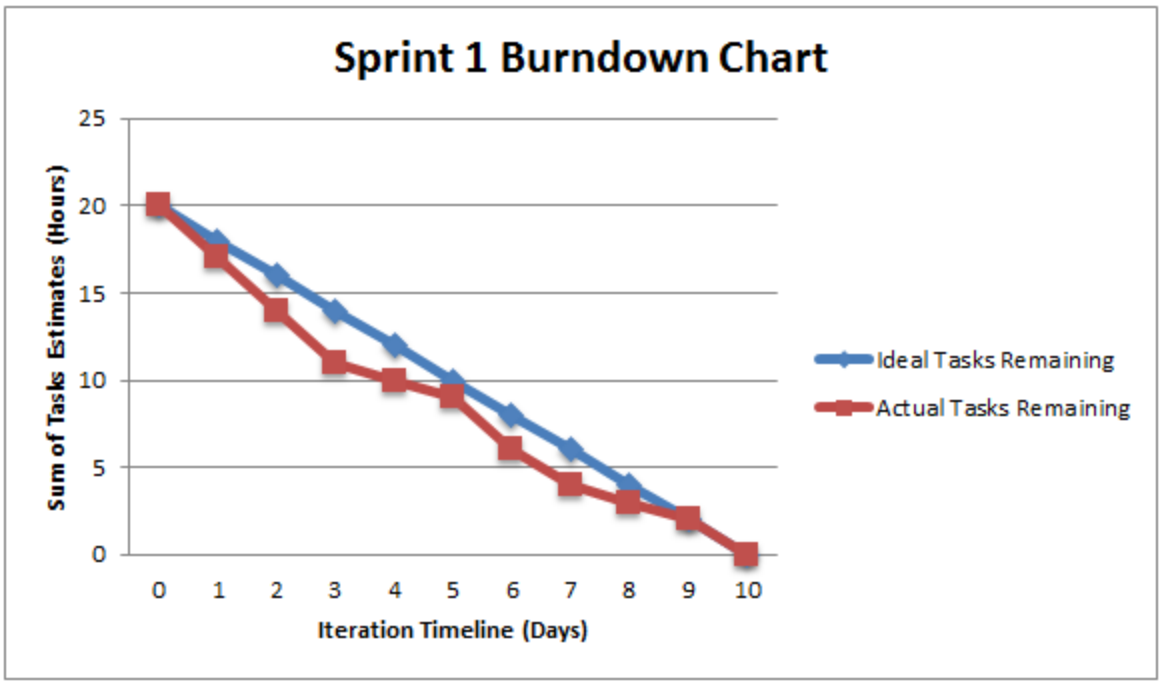
SPRINT 4:

User Stories	Breakdown	Hours Allocated	Status
4. As a tester, I want to be able to test my test cases in order to debug my application.	- Write test cases and run them	8	Completed
12. As a developer I want to be able to create a logout method in order to let customers log out without closing the application	- Write method to log out	4	Not yet started
10. As a customer, I want to be able to transfer funds from my Saving/ Chequing account to my credit card.	-Include a credit card attribute -Implementation of transferring funds to credit card -Converting currency before transferring, etc	8	Not yet started
14. As a customer, I want to be able to download my transaction log in the form of a document in order to keep an offline record of my banking activity.	- Create an export method to save log data in plain text.	4	Not yet started
15. As an administrator, I want to be able to add new items to the database in order to update the system.	-Create admin console to add/view banks, accounts and clients. -Ability to remove data from the database such as Clients and Accounts	8	Incomplete

Sprint Execution:

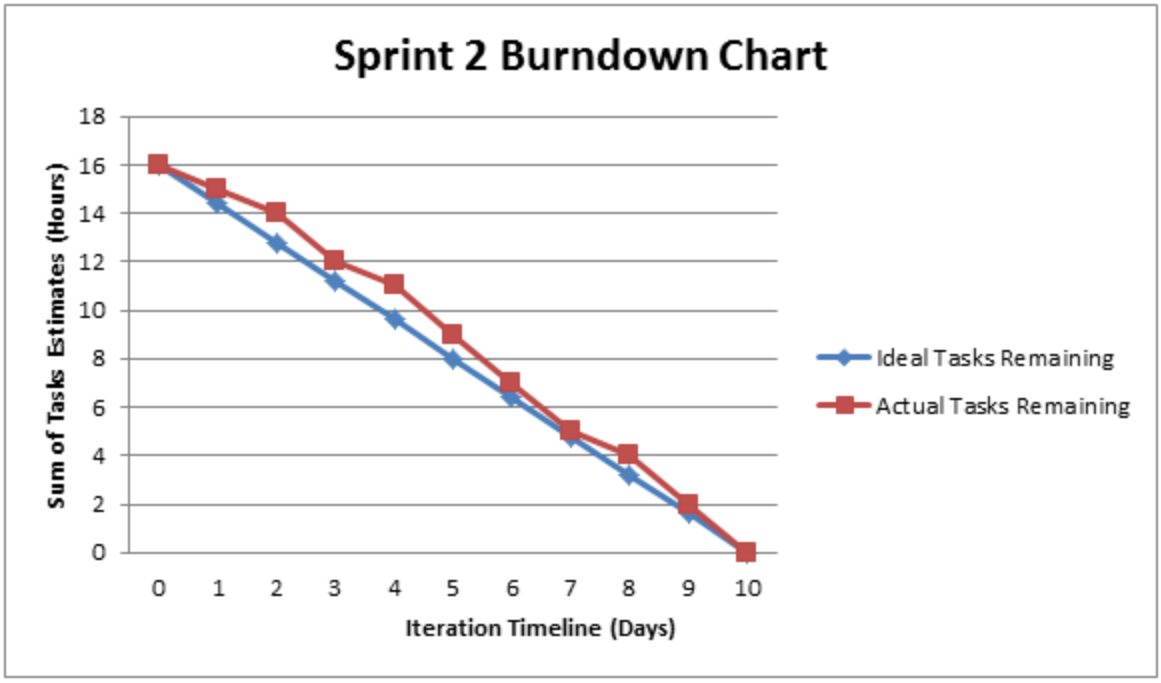
SPRINT 1:

Tasks	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
Create Database	2	2	2							
Add banks				1						
Add clients					1					
Code user interface	1	1	1						1	
Code account class						1				
Code bank class						1				
Code methods to retrieve account information							1			
Code method to transfer among one user's accounts							1			
Code tests						1		1		
Run tests										2



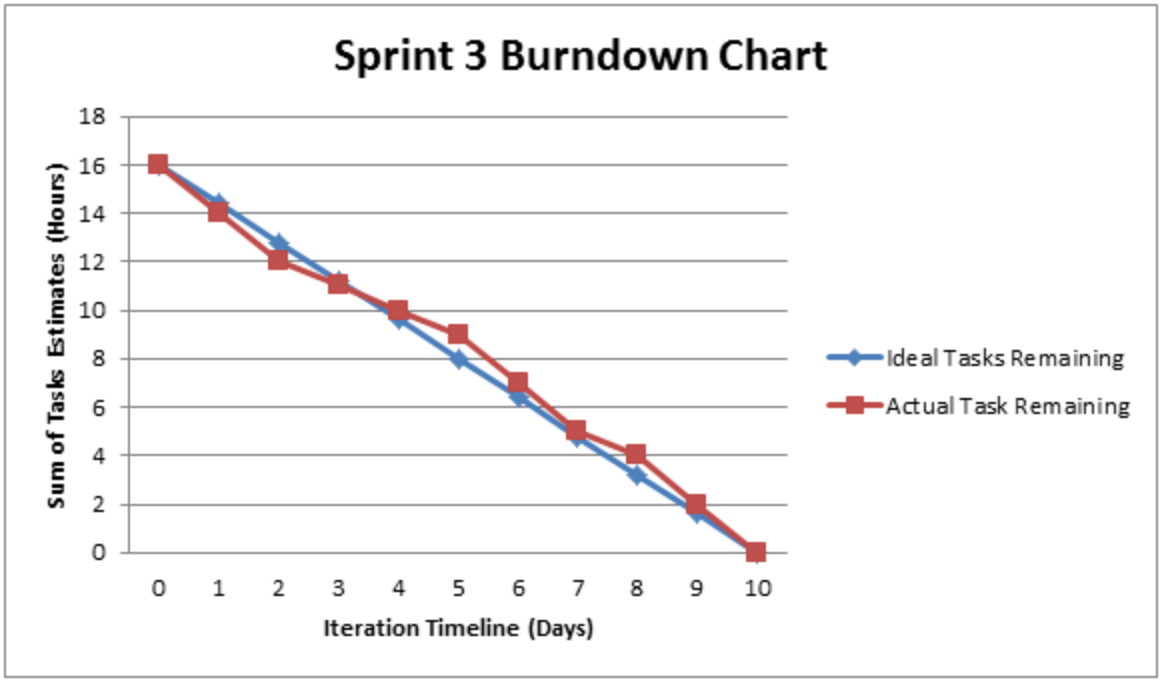
SPRINT 2:

Tasks	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
Code methods to retrieve from the database	1	1		1	1					
Code transaction log			1		1	1				
Code update method for transaction log								1		
Code transfer method to other users			1			1	2			
Code tests									2	
Run tests										2



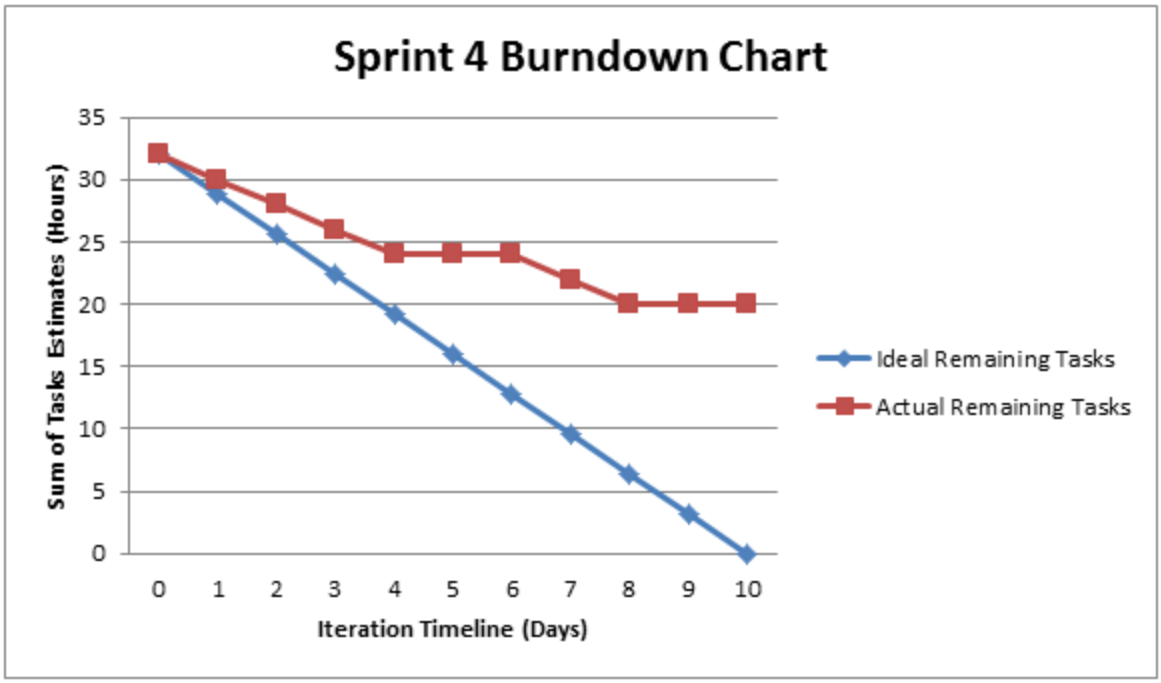
SPRINT 3:

Tasks	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
Code login page	2							1		
Display banks		1								
Display accounts in bank			1			1				
Display transaction log						1	1			
Code exception classes		1		1	1		1			
Code and run tests									2	2


Sprint 3 Burndown Chart
Sum of Tasks Estimates (Hours)
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6 7 8 9 10
Iteration Timeline (Days)
Ideal Tasks Remaining
Actual Task Remaining

SPRINT 4:

Tasks	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
Code tests		2		2						
Run tests							2	2		
Create admin console	2		2							
Code method to create/delete accounts in database										
Code logout method										
Create credit card attribute										
Code credit card transfer method										
Code export method										



Individual Logs:

Team Member	**Log**
Mitra Kalloo	Worked well with each other, problems faced were solved quickly. Everyone knew what their capabilities are and contributed to the best of their ability.
Amit Maraj	No major problems encountered with my team members. They gave advice and assistance when it was needed. We had worked together previously so communication was simple and effective.
Krishel Mahadeo	Team worked well together since we all knew each other beforehand. Help was readily available when I needed it. Impediments were caused by an increase of work for other courses but we managed to make time to meet up and discuss this project.
Danah Sudama	Could not have asked for a better team to work with. We all had different skills which proved to be very beneficial to our project.

Scrum Master Week:

Group Member	**Comments**
Krishel Mahadeo	Impediments were mostly due to having assignments and coursework exams in other courses. There wasn't much I could do about that but we managed to reschedule our in-person meeting times to online meetings since that was more convenient. We still managed to meet up in person to deal with any problems that we were faced with.
Danah Sudama	The obstacle I came across as scrum master was trying to allocate time for the daily scrums, etc but it resolved itself as we mostly used online components to communicate on a daily basis. Due to time restraints we were unable to complete all our user tasks, but we would have liked to complete it.

Architecture:

The application was split into two parts Graphical User Interface (GUI) and Library of functionality.

Library:

This included a package called DAccesss which contained classes. The main class of this package is DBConnection where it consist of methods that are to be used by all the other classes that extends DBConnection. DAccess attempts to make the classes modular by only placing methods that suits that particular class. The application will work if a child class is missing or replaced by another, this means that any child class does not affect the other child classes. Methods were given names close to that of the operation that was being performed by it. In addition it contains the user made exceptions and the MySQL connector.

GUI :

The Graphical User Interface was developed using the JavaFX library which is the new replacement for the previous library, SWING and because it has now been fully integrated into Java version 8. Each screen of the application has a separate Java class for handling all functionality of that particular screen as well as all visual components. Certain components such as the bank buttons and table views are generated dynamically using a Java library created by the other team members. The GUI components rely on these functions provided by the BankApp library to achieve functionality.

Personal Logs:

Mitra Kalloo:

My contribution to the project is my knowledge in linking Java and MySQL together for the retrieval of information on the database and the creation of a simple admin application. The creation of the databases was the most challenging part because it is the most essential. We needed to determine the data to be stored and how to normalize the database as best as we could. The creation of a general class was first done with basic functionalities that would be needed by the other classes. This was a little challenging since it was always being updated throughout the project to allow one method to be available in all some or all the other classes that extended it. Throughout the sprints, testing was done to confirm the proper working of a method and an entire class. Furthermore the allotted time for the implementation of a method was the right amount of time needed. In some cases, a method was done and passed every test, later in the other sprint it was noticed that it took quite some time to run. This led to putting most of the data sorting and gathering into the database and not the Java application. Modifying the code to do so reduced the length of methods and also reduces the amount of bugs and errors in the code.

Danah Sudama:

Prior to this course, I had some experience with object-oriented programming. This was basically my contribution to this project. I assisted my colleagues in implementing the functionalities of the classes as well as the creation of the database. With some knowledge of exception handling, I was able to collaborate with my partners in this area. Also, I was given the opportunity of being the scrum master for one of the sprints. As I was part of a very small

team, I was able to also be involved in the development for that sprint. Overall, the experience was a learning and enjoyable one.

Krishel Mahadeo:

For this project, I was responsible for handling the testing of the code. I created multiple tests for each of the classes and then ran the Test Suite for all the testing classes made. I also assisted with the theme as well as the general layout of the user interface. I have a little experience in user friendly designs and tried to come up with a simple but comprehensive layout. I was the scrum master for the first 3 sprints so I tried to handle the impediments my team faced as well as making sure they were all performing at their best.

Amit Maraj:

During the duration of this project, my contribution was the development of the Graphical User Interface. I chose this this task because of my previous experiences with Java programming.