

COSC2101
Software Engineering Process and Tools

Milestone 1 Report
<Group name:Group 5>

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Introduction

This project is an ecommerce website providing the features of online ordering for customers and product management for the administrator. This website is selling technology devices such as iphone, laptop, and ipad, then users can make and keep track information of the order in the system. This maven project is written using Java with MVC Spring Boot Framework.

Git repository: https://github.com/phuocminhbao/ecommerce_website

Tools

User story

Story 1: Display items	
As a	Visitor
I want	See the list of items
So that	I can choose items for my order
Acceptance criteria	<p>Criterion 1:</p> <p>Given that the user access the website successful And the homepage is showing up And all products are available When the user scroll down a little bit Then ensure products are displaying</p> <p>Criterion 2:</p> <p>Given that the user access the website successful And the homepage is showing up And all products are not available When the user scroll down a little bit</p>

	<p>Then ensure none products are displaying And message will be show</p> <p>Criterion 3:</p> <p>Given that the user access the website successful And the homepage is showing up And some products not available</p> <p>When the user scroll down a little bit Then ensure all available products are displaying And for those not available will be hiding</p>
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Story 2: Home page	
As a	Visitor
I want	See all the basic function at the homepage
So that	I can know what to do for ordering
Acceptance criteria	<p>Criterion 1:</p> <p>Given that the user access the website successful And the homepage is showing up</p> <p>When the user look at the home page Then ensure main functions are displaying on the top</p> <p>Criterion 2:</p> <p>Given that the user access the website successful And the homepage is showing up</p> <p>When the user scroll down Then ensure main functions are still displaying on the top</p>

Story 3: Category list	
As a	Visitor
I want	See the category list
So that	I can find items easier
Acceptance criteria	<p>Criterion 1:</p> <p>Given that the user access the website successful And the homepage is showing up with category list on the left And all products are available When the user click on one from the list Then ensure the website load to another interface And all products assign with that category are displaying without others unrelated products</p> <p>Criterion 2:</p> <p>Given that the user in one of the category interface And the category list is displayed on the left When the user click on another option from the list Then ensure the website load to that options's interface And all products assign with that category are displaying without others unrelated products</p>

Story 4: Home menu	
As a	Visitor
I want	See all the menu at the homepage
So that	I can choose which interface I want to access
Acceptance criteria	Criterion 1:

	<p>Given that the user access the website successful</p> <p>And the homepage is showing up</p> <p>And the menu is displayed</p> <p>When the user click on one option from the menu</p> <p>Then ensure the website load to that options's interface</p> <p>Criterion 2:</p> <p>Given that the user access the website successful</p> <p>And the homepage is showing up</p> <p>When the user click on another option from the menu</p> <p>Then ensure the website reload to that options's interface</p>
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Product backlog and prioritization

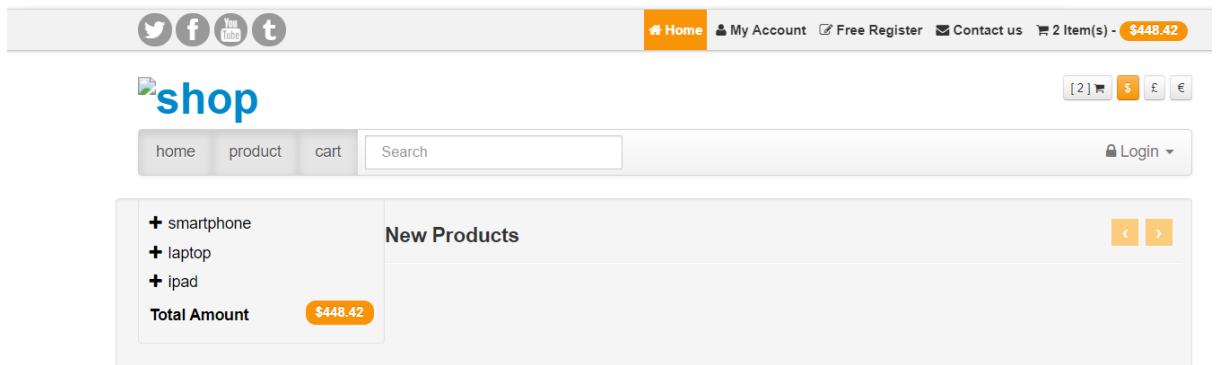
ID	Items	Owen	Priority	Sprint	Status
1	Home page	Thanh	High	1	Done
2	Category list	Phuoc	High	1	Done
3	Home menu	Thanh	High	1	Done
4	Display items	Phuoc	High	1	Done
5	Search items	Phuoc	High	2	Working in progress
6	Add items in cart	Thanh	High	2	Working in progress
7	Delete items in cart	Thanh	High	2	Working in progress

8	Update items in cart	Thanh	High	2	Working in progress
9	Register	Phuoc	High	3	To be started
10	login	Phuoc	High	3	To be started
11	Change password	Phuoc	Medium	3	To be started
12	Update information	Thanh	Medium	3	To be started
13	Keep track order	Thanh	Medium	3	To be started
14	Purchased list history	Phuoc	Medium	3	To be started
15	Add new items	Thanh	High	4	To be started
13	Delete items	Phuoc	High	4	To be started
14	Modify items	Phuoc	High	4	To be started

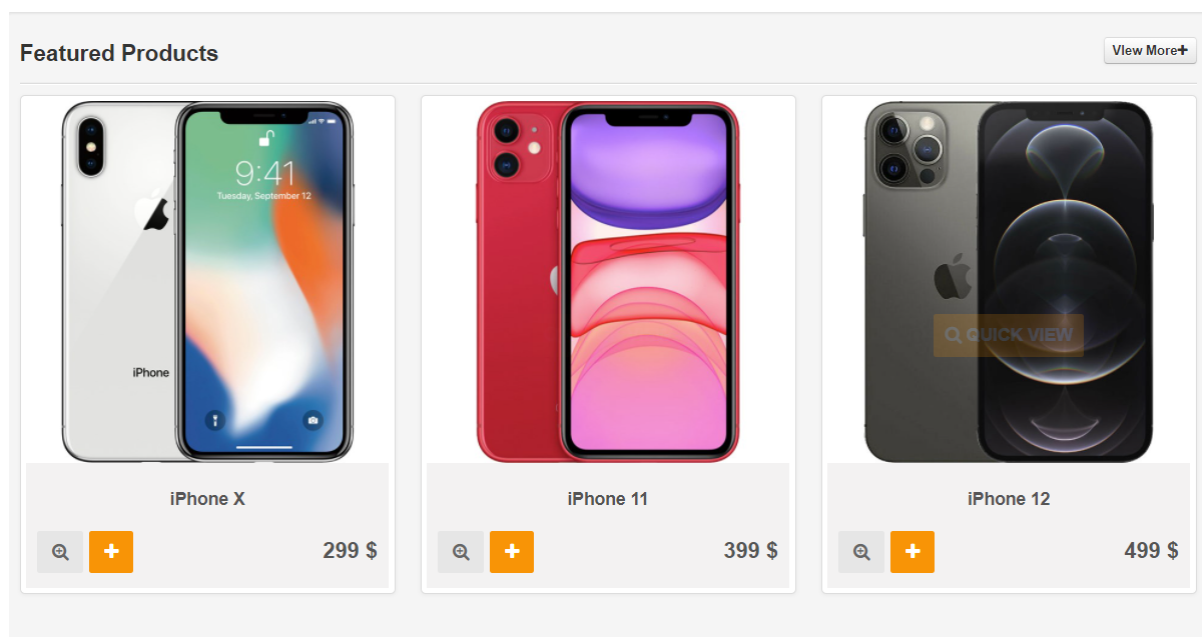
Functionality

Scope of functionality for milestone 1:

- **Displaying homepage with the menu and category list:** The menu is stored in the database and this function takes those to display to the home page which is also the same as category list.



- **Displaying featured products:** This functionality displays the product details including name, image, and price.



Test cases, DoD of PBIs

Test case Id	Description	Data	Check list
Tc-01	Check that if data of category returned from database are stored in List	1 - iPhone 2 - laptop 3 - iPad	- The returned List is not empty - The size of returned List is 3
Tc-02	Test category data stored in	1 - iPhone - iPhone, Vivo,	- First element of the

	List is exactly same with data from database	Oppo... 2 - laptop - ASUS, MSI, HP... 3 - iPad - ipad pro, ipad mini...	returned List must have: id 1, name iPhone and description iPhone, Vivo, Oppo... - Same with other elements which will be id 2 of second element or name ipad of third element
Tc-03	Check that if data of menu returned from database are stored in List	1 - home 2 - products 3 - cart	- The returned List is not empty - The size of returned List is 3
Tc-04	Test menu data stored in List is exactly same with data from database	1 - home	- First element of the returned List must have: id 1 and name home
Tc-05	Check that if data of products returned from database are stored in List	1001 - iPhone X - 299 1002 - iPhone 11 - 399 1003 - iPhone 12 - 499	- The returned List is not empty - The size of returned List is 3
Tc-06	Data show for featured products must be random	1001 - iPhone X - 299 1002 - iPhone 11 - 399 1003 - iPhone 12 - 499	- First element's name of the returned List must changed several times when run test 10 times
Tc-07	Check if the website show none product when user search with wrong name of items not in database	1001 - iPhone X - 299 1002 - iPhone 11 - 399 1003 - iPhone 12 - 499	- Show message "No matching results" - function must not return any element from List
tc-08	Check if related products is display when user input some keywords	Data: 1001 - iPhone X - 299 1002 - iPhone 11 - 399	- The returned List must not include the third item which id is 10002

		10002 - MSI Modern 14 - 799 User input: ip	- Show the 2 iPhone products in the Website
Tc-09	Check if items is added in cart		- The item stored in the cart list - The item amount increase if it already exist in the cart
Tc-10	Check if items is deleted from cart		- The item must be disappear in cart list The item still exist in database
Tc-11	Check if the amount of a specific item is increase after user add it to cart or click on “+”	1001 - iPhone X - 1	- The amount of the item have id 1001 in the cart increase into 2
Tc-12	Check if the amount of a specific item is increase after user click on “-” in the cart	1001 - iPhone X - 2 1002 - iPhone 11 - 1	- The amount of the item have id 1001 in the cart decrease into 1 - The amount of the item have id 1002 in the cart must be deleted
Tc-13	Check if user data is added to database after a user register		- The function will create a new object of new user with the information get from user - The data of new user is stored in database
Tc-14	Check if input of user is valid		- The function returned a new object of user when all input pass the validation

			- Show message to notify user for reinput
Tc-15	Check if user login with a right account		<ul style="list-style-type: none"> - The function compare the data from input of user with all datas in database - Load the current page into homepage when data is matched - Show message to notify user for reinput when data is not matched
Tc-16	Check if data in database is changed when user change password	S3804722 - 123456789 User input: 123456987	<ul style="list-style-type: none"> - The function get the correct data from database with user name: S3804722 - Reset the property password of user into 123456987 - New password of S3804722 stored in data is 123456987
Tc-17	Check if data in database is changed when user change information		- Retest same of Tc-16
Tc-18	Check if list of sold-items are restored in history list		<ul style="list-style-type: none"> - All product mark as sold must be add to another list - Each account have its own history list
Tc-19	Test if new data of product is added		- New data must be appeared in database after add

			- Show error message if product already exist in database
Tc-20	Test if data of an exist product is deleted		- The product must be deleted in database - The product must be disappeared in product page
Tc-21	Test if data of an exist product is modified		- Data of the product must be changed

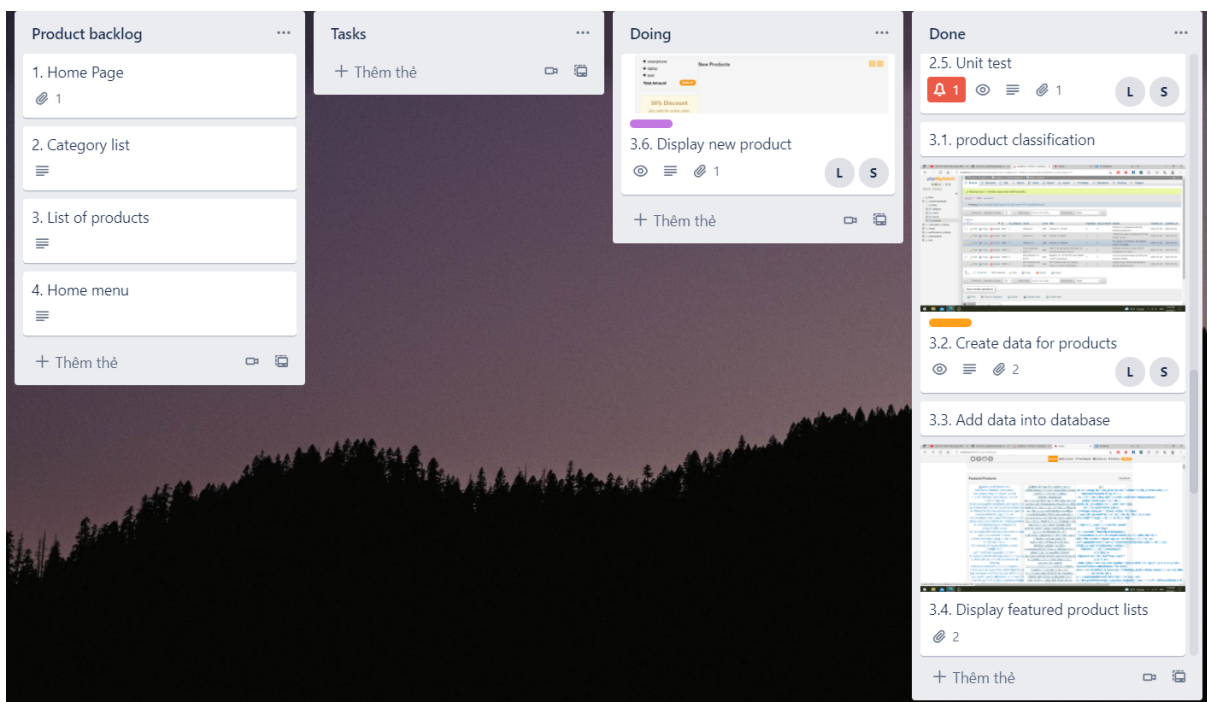
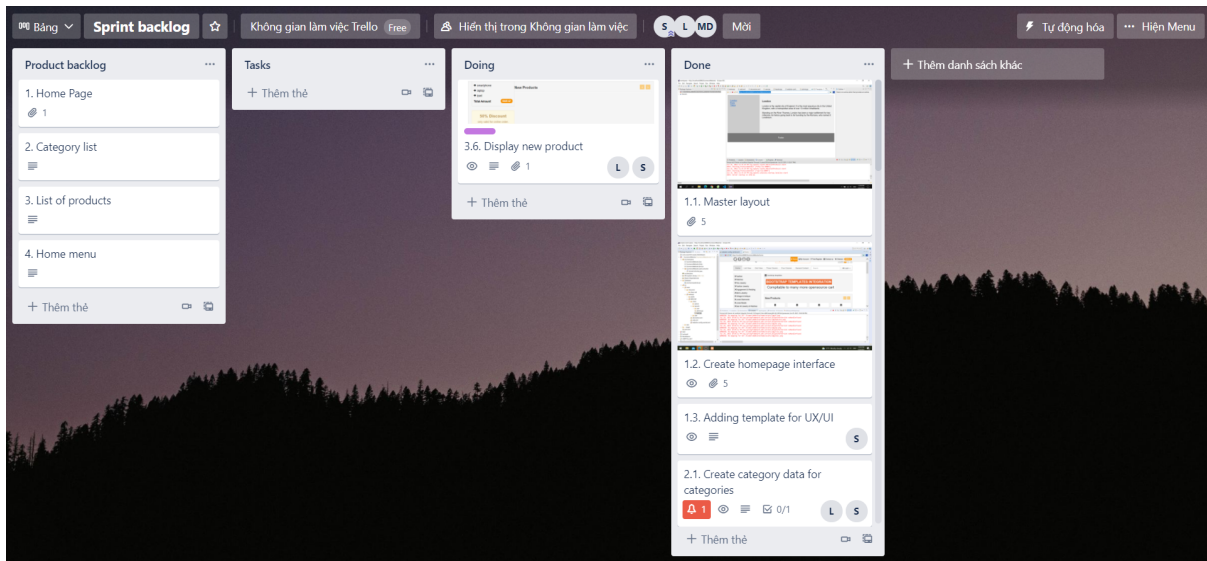
Sprint planning notes

Sprint goal:

- Set up workspace includes a Github repository, a maven project, essential dependencies in maven(spring-webmvc, spring-jdbc, mysql-connector-java, javax.servlet-api, jsp-api, opensymphony/sitemesh, jstl, javax.annotation-api), a Mysql database, deployment add-on: Spring tool 3 add-on for Spring tool on Eclipse market, trello, and travis-ci.
- Implement homepage, menu, and product displaying functionality.
- Front-end testing
- Unit test case, and Junit testing
- CI/CD on Travis-ci

Sprint Backlog

Link to Trello: <https://trello.com/b/FOHU9q2Q/sprint-backlog>



Scope of Work Clarification

When a function is completed, we will have a meeting to do a number of test cases based on acceptance criteria that we already have to check and confirm whether the functionality is successfully built or not. During this process, issues or bugs could be met, we need to go through all the tests on the checklist carefully and attempt to fix bugs by making changes on code or adding dependencies and libraries needed.

Key Risks & Concerns

There are a number of issues that could be seen from the goal and sprint backlog. For example, at the beginning, we decided that changing is not allowed during the sprint, it led to many problems when coding and the team may waste a lot of time on these. To solve this issue, our team made a decision that change is fine during the sprint. Furthermore, if the details of the sprint are not significant enough, the project will need more time to complete. As a result, more information for the sprint is essentially needed.

Notes and Takeaways

The main insight and discussion points of this sprint are keeping track of the project progress then we can follow the given sprint task which is made at the beginning. Moreover, if the function build needs to make some changes on sprint, we can decide based on the project process. Another takeaway that we can improve in the next sprint is velocity, which means we have to speed up the work to complete the project on time. Although we have some problems when two members leave the team in the beginning, we continue doing the project well. We just need to enhance the speed, we can finish the project before the deadline.

Take Action

Schedule sprint planning following the semester weeks. Due to some problems when two members drop the course on the middle of week 4(20-Jul)

Backlog	Task type	Duration	Participation
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Idea planning	Design	Week 4	Thanh + Phuoc
Decide technology use and communication platform	Design	Week 4	Thanh + Phuoc
Product backlogs and sprint planning	Design	Week 4	Thanh + Phuoc
Writing user story	Design	Week 4	Thanh + Phuoc
Design UX/UI	Design	Week 5	Thanh + Phuoc
Setup and config project(maven MVC, spring boot and database)	Deployment	Week 5	Thanh + Phuoc
Create data for the database and connection to maven	Back-end	Week 5	Thanh + Phuoc
Homepage and menu display	Fullstack	Week 5 and Week 6	Thanh + Phuoc
Items display	Fullstack	Week 5 and Week 6	Thanh + Phuoc
Write test cases	Test	Week 6	Thanh + Phuoc
Junit test and CI/CD	Test	Week 6	Thanh + Phuoc

Follow-Up

When communicating with each other on many platforms such as Messenger, Discord for the team meeting, and MS Teams for meeting with the product owner. When we have bugs, we always attempt to fix them individually first but not too long. After a short time if we can not solve the problem, we will ask for help from the team to make sure we code can be solved and the process can continue to complete on time.

Git and Github

Git repository of the project: https://github.com/phuocminhbao/ecommerce_website

Implementation

We set up different components in the source file in order to manage it easily as a MVC framework including model, view and control.

- Package **Controller.User**: Request mapping to the url link of the website when user firstly loads on the website including values “/” and “/home” and “product”. Furthermore, we set a mode and view function to get the data of “Category” and “Product” from the HomeServices(explain below) to set for user’s view
- Package **Dao**: Connect with Mysql database and handle queries. Each Dao will interact with one table
- Package **Entity**: Mapping with database which means build to map with column and table from data taken from Dao
- Package **Service**: Due to each Dao will interact with one table, Service will combine the interaction between many tables from Dao
- Package **Dto**: To join many table data, which can not reuse Entity, will be better to implement functions in the future

Automated maven build


```

[INFO] Scanning for projects...
[INFO] -----< com.ecommerce_website:EcommerceWebsite >-----
[INFO] Building EcommerceWebsite 1.0
[INFO] -----[ war ]-----
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ EcommerceWebsite ---
[INFO] Deleting D:\eclipse work-space\EcommerceWebsite\target
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ EcommerceWebsite ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 95 resources
[INFO] --- maven-compiler-plugin:3.6.0:compile (default-compile) @ EcommerceWebsite ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 14 source files to D:\eclipse work-space\EcommerceWebsite\target\classes
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ EcommerceWebsite ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO] --- maven-compiler-plugin:3.6.0:testCompile (default-testCompile) @ EcommerceWebsite ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 3 source files to D:\eclipse work-space\EcommerceWebsite\target\test-classes
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ EcommerceWebsite ---
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running EcommerceWebsite.Dao.CategoryDaoTest
[INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.275 s - in EcommerceWebsite.Dao.CategoryDaoTest
[INFO] Running EcommerceWebsite.Dao.MenuDaoTest
[INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.011 s - in EcommerceWebsite.Dao.MenuDaoTest
[INFO] Running EcommerceWebsite.Dao.ProductsDaoTest
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.023 s - in EcommerceWebsite.Dao.ProductsDaoTest
[INFO] Results:
[INFO] Tests run: 12, Failures: 0, Errors: 0, Skipped: 0
[INFO] --- maven-war-plugin:2.2:war (default-war) @ EcommerceWebsite ---
[INFO] Packaging webapp
[INFO] Assembling webapp [EcommerceWebsite] in [D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0]
[INFO] Processing war project
[INFO] Copying webapp resources [D:\eclipse work-space\EcommerceWebsite\src\main\webapp]
[INFO] Webapp assembled in [369 msecs]
[INFO] Building war: D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0.war
[INFO] WEB-INF\web.xml already added, skipping
[INFO] --- maven-install-plugin:2.4:install (default-install) @ EcommerceWebsite ---
[INFO] Installing D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0.war to C:\Users\ASUS\.m2\repository\com\ecommerce_website\EcommerceWebsite\1.0\EcommerceWebsite-1.0.war
[INFO] Installing D:\eclipse work-space\EcommerceWebsite\pom.xml to C:\Users\ASUS\.m2\repository\com\ecommerce_website\EcommerceWebsite\1.0\EcommerceWebsite-1.0.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 4.495 s
[INFO] Finished at: 2021-08-07T18:12:12+07:00
[INFO] -----

```

Continuous Integration (CI)

In order not to take much time to build or rebuild which may reduce the productivity of the development progress, Travis-CI tools will be included in this project.

At first when the team integrate Travis with the repo on github, everything seem going fine and the current build branch on Travis was build successfully as pictures below:

```
1 Worker information worker_info 0.00s
6
7 Build system information system_info 0.01s
413
414 1.26s
415 docker stop/waiting docker_mtu_and_registry_mirrors
417 resolvconf stop/waiting resolvconf
419 Installing openjdk10 install_jdk 0.00s
435
436 Installing SSH key from: default repository key ssh_key
438 Using /home/travis/.netrc to clone repository.
439
440 $ git clone --depth=50 --branch=unitTest https://github.com/phuocminhbao/ecommerce_website.git phuocminhbao/ecommerce_website git_checkout 1.16s
450
451 $ java -Xmx32m -version 0.01s
452 openjdk version "10.0.2" 2018-07-17
453 OpenJDK Runtime Environment 18.3 (build 10.0.2+13)
454 OpenJDK 64-Bit Server VM 18.3 (build 10.0.2+13, mixed mode)
455 $ javac -J-Xmx32m -version
456 javac 10.0.2
457 $ mvn install -DskipTests=true -Dmaven.javadoc.skip=true -B -V install 22.66s
1144 $ mvn test -B 2.90s
1145 [INFO] Scanning for projects...
1146 [INFO]
1147 [INFO] -----
1148 [INFO] Building EcommerceWebsite 1.0
1149 [INFO] -----
1150 [INFO]
1151 [INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ EcommerceWebsite ---
1152 [WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
1153 [INFO] Copying 95 resources
1154 [INFO]
1155 [INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ EcommerceWebsite ---
1156 [INFO] Nothing to compile - all classes are up to date
1157 [INFO]
1158 [INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ EcommerceWebsite ---
1159 [INFO] skip non existing resourceDirectory /home/travis/build/phuocminhbao/ecommerce_website/src/test/resources
1160 [INFO]
1161 [INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ EcommerceWebsite ---
1162 [INFO] No sources to compile
1163 [INFO]
1164 [INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ EcommerceWebsite ---
1165 [INFO] No tests to run.
1166 [INFO]
1167 [INFO] -----
1168 [INFO] BUILD SUCCESS
1169 [INFO] -----
1170 [INFO] Total time: 1.238 s
1171 [INFO] Finished at: 2021-08-05T17:12:50Z
1172 [INFO] Final Memory: 9M/30M
1173 [INFO] -----
1174 The command "mvn test -B" exited with 0.
1175
1176
1177 Done. Your build exited with 0. Top ^
```

However, a member noticed that although it built success, Travis did not run any test cases. Therefore, we come back to local repo and build it again and found all test cases only run in IDE which not run under maven build with error below:

```

<terminated> EcommerceWebsite (2) [Maven Build] C:\Program Files (x86)\Java\jdk1.8.0_202\bin\javaw.exe (Aug 7, 2021, 6:30:23 PM)
symbol: method assertEquals(int,int)
location: class EcommerceWebsite.Test.MenuDaoTest
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[43,17] cannot find symbol
symbol: method assertEquals(java.lang.String,java.lang.String)
location: class EcommerceWebsite.Test.MenuDaoTest
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[49,17] cannot find symbol
symbol: method assertEquals(int,int)
location: class EcommerceWebsite.Test.MenuDaoTest
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[50,17] cannot find symbol
symbol: method assertEquals(java.lang.String,java.lang.String)
location: class EcommerceWebsite.Test.MenuDaoTest
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[56,17] cannot find symbol
symbol: method assertEquals(int,int)
location: class EcommerceWebsite.Test.MenuDaoTest
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[57,17] cannot find symbol
symbol: method assertEquals(java.lang.String,java.lang.String)
location: class EcommerceWebsite.Test.MenuDaoTest
[INFO] 49 errors
[INFO] -----
[INFO] -----
[INFO] BUILD FAILURE
[INFO] -----
[INFO] Total time: 1.223 s
[INFO] Finished at: 2021-08-07T18:30:25+07:00
[INFO] -----
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-compiler-plugin:3.1:compile (default-compile) on project EcommerceWebsite: Compilation
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/ProductsDaoTest.java:[3,36] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/ProductsDaoTest.java:[8,29] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/ProductsDaoTest.java:[9,29] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Controller/User/HomeControllerTest.java:[3,24] package org.junit does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Controller/User/HomeControllerTest.java:[5,17] package org.junit does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/CategoryDaoTest.java:[3,36] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/CategoryDaoTest.java:[7,29] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/CategoryDaoTest.java:[8,29] package org.junit.jupiter.api does
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[3,36] package org.junit.jupiter.api does not
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[7,29] package org.junit.jupiter.api does not
[ERROR] /D:/eclipse work-space/EcommerceWebsite/src/main/java/EcommerceWebsite/Test/MenuDaoTest.java:[8,29] package org.junit.jupiter.api does not

```

The error appeared because of the conflict of Junit5 with the maven config so we made a hard effort on fixing this problem. Despite our team having fixed the problem and getting to rebuild successfully locally, it seems that Travis does not accept it and results in failure of all test cases

```

[INFO] --- maven-compiler-plugin:3.6.0:testCompile (default-testCompile) @ EcommerceWebsite ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 3 source files to D:\eclipse work-space\EcommerceWebsite\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ EcommerceWebsite ---
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running EcommerceWebsite.Dao.CategoryDaoTest
[INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.314 s - in EcommerceWebsite.Dao.CategoryDaoTest
[INFO] Running EcommerceWebsite.Dao.MenuDaoTest
[INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.012 s - in EcommerceWebsite.Dao.MenuDaoTest
[INFO] Running EcommerceWebsite.Dao.ProductsDaoTest
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.019 s - in EcommerceWebsite.Dao.ProductsDaoTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 12, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] --- maven-war-plugin:2.2:war (default-war) @ EcommerceWebsite ---
[INFO] Packaging webapp
[INFO] Assembling webapp [EcommerceWebsite] in [D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0]
[INFO] Processing war project
[INFO] Copying webapp resources [D:\eclipse work-space\EcommerceWebsite\src\main\webapp]
[INFO] Webapp assembled in [415 msecs]
[INFO] Building war: D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0.war
[INFO] WEB-INF\web.xml already added, skipping
[INFO]
[INFO] --- maven-install-plugin:2.4:install (default-install) @ EcommerceWebsite ---
[INFO] Installing D:\eclipse work-space\EcommerceWebsite\target\EcommerceWebsite-1.0.war to C:\Users\ASUS.m2\repository\com\ecommerce_website\EcommerceWebsite-1.0.war
[INFO] Installing D:\eclipse work-space\EcommerceWebsite\pom.xml to C:\Users\ASUS.m2\repository\com\ecommerce_website\EcommerceWebsite-1.0\EcommerceWebsite-1.0.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----

```

```
1145         at EcommerceWebsite.Dao.ProductsDaoTest.testGetDataProductsSize(ProductsDaoTest.java:37)
1146
1147 [INFO]
1148 [INFO] Results:
1149 [INFO]
1150 [ERROR] Errors:
1151 [ERROR] CategoryDaoTest.testGetDataCategory:33 » CannotGetJdbcConnection Failed to obt...
1152 [ERROR] CategoryDaoTest.testGetDataCategoryFirstElement:43 » CannotGetJdbcConnection F...
1153 [ERROR] CategoryDaoTest.testGetDataCategorySecondElement:50 » CannotGetJdbcConnection ...
1154 [ERROR] CategoryDaoTest.testGetDataCategorySize:38 » CannotGetJdbcConnection Failed to...
1155 [ERROR] CategoryDaoTest.testGetDataCategoryThirdElement:57 » CannotGetJdbcConnection F...
1156 [ERROR] MenuDaoTest.testGetDataMenu:32 » CannotGetJdbcConnection Failed to obtain JDBC...
1157 [ERROR] MenuDaoTest.testGetDataMenuFirstElement:42 » CannotGetJdbcConnection Failed to...
1158 [ERROR] MenuDaoTest.testGetDataMenuSecondElement:49 » CannotGetJdbcConnection Failed t...
1159 [ERROR] MenuDaoTest.testGetDataMenuSize:37 » CannotGetJdbcConnection Failed to obtain ...
1160 [ERROR] MenuDaoTest.testGetDataMenuThirdElement:56 » CannotGetJdbcConnection Failed to...
1161 [ERROR] ProductsDaoTest.testGetDataProducts:31 » CannotGetJdbcConnection Failed to obt...
1162 [ERROR] ProductsDaoTest.testGetDataProductsSize:37 » CannotGetJdbcConnection Failed to...
1163 [INFO]
1164 [ERROR] Tests run: 12, Failures: 0, Errors: 12, Skipped: 0
1165 [INFO]
1166 [INFO] -----
1167 [INFO] BUILD FAILURE
1168 [INFO] -----
1169 [INFO] Total time: 3.918 s
1170 [INFO] Finished at: 2021-08-06T08:11:31Z
1171 [INFO] -----
1172 [ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.22.2:test (default-test) on project EcommerceWebsite: There are test failures.
1173 [ERROR]
1174 [ERROR] Please refer to /home/travis/build/phuocminhbao/ecommerce_website/target/surefire-reports for the individual test results.
1175 [ERROR] Please refer to dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
1176 [ERROR] -> [Help 1]
1177 [ERROR]
1178 [ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
1179 [ERROR] Re-run Maven using the -X switch to enable full debug logging.
1180 [ERROR]
1181 [ERROR] For more information about the errors and possible solutions, please read the following articles:
1182 [ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
```

The cause of this problem was because of the way we conduct our test cases. All of them were tested with the data returned from the database which is installed locally and can not be accessed outside, therefore, Travis failed to connect the database server so the tests can not be passed. We tried several solutions for installing the server and importing the data file but met failure at final:

```
1 Worker information worker_info 0.06s
6
7 Build system information system_info 0.01s
161
162 docker_mtui_and_registry_mirrors 2.63s
163 Installing openjdk8 resolvconf install_jdk
164
165 $ sudo systemctl start mysql services 4.09s
166 Installing SSH key from: default repository key ssh_key
168 Using /home/travis/.netrc to clone repository.
169
170 $ git clone --depth=50 --branch=unittesting https://github.com/phuocminhbao/ecommerce_website.git phuocminhbao/ecommerce_website git.checkout 1.71s
180
181 $ java -Xmx32m -version 0.01s
182 openjdk version "1.8.0_252"
183 OpenJDK Runtime Environment (build 1.8.0_252-8u252-b09-1-16.04-b09)
184 OpenJDK 64-Bit Server VM (build 25.252-b09, mixed mode)
185 $ javac -J-Xmx32m -version
186 javac 1.8.0_252
187 $ mysql -u root --password="" < travis.sql 0.01s
188 mysql: [Warning] Using a password on the command line interface can be insecure.
189 ERROR 1396 (HY000) at line 2: Operation CREATE USER failed for 'root'@'localhost'
190 The command "mysql -u root --password="" < travis.sql" failed and exited with 1 during .
191
192 Your build has been stopped.
```

```

974 [INFO] T E S T S
975 [INFO] -----
976 [INFO] Running EcommerceWebsite.Dao.CategoryDaoTest
977 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
978 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
979 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
980 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
981 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
982 [INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.597 s - in EcommerceWebsite.Dao.CategoryDaoTest
983 [INFO] Running EcommerceWebsite.Dao.MenuDaoTest
984 [INFO] Tests run: 5, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.044 s - in EcommerceWebsite.Dao.MenuDaoTest
985 [INFO] Running EcommerceWebsite.Dao.ProductsDaoTest
986 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
987 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
988 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,
5.6.26+ and 5.7.6+ requirements SSL connection must be established by default if explicit option isn't set. For compliance with existing applications not
using SSL the verifyServerCertificate property is set to 'false'. You need either to explicitly disable SSL by setting useSSL=false, or set useSSL=true and
provide truststore for server certificate verification.
989 Fri Aug 06 14:31:29 UTC 2021 WARN: Establishing SSL connection without server's identity verification is not recommended. According to MySQL 5.5.45+,

```

```

995         at EcommerceWebsite.Dao.ProductsDaoTest.testGetDataProducts(ProductsDaoTest.java:31)
996
997 [ERROR] testGetDataProductsSize Time elapsed: 0.029 s <<< ERROR!
998 org.springframework.jdbc.BadSqlGrammarException: StatementCallback; bad SQL grammar [SELECT p.id AS id_product , p.id_category , p.name , p.price , p.title
, p.highlight , p.new_product , p.details , c.id AS id_color , c.name AS name_color , c.code AS code_color , c.img , p.created_at , p.updated_at FROM
products AS p INNER JOIN colors AS c ON p.id = c.id_product GROUP BY p.id , c.id_product ORDER BY RAND() LIMIT 9 ]; nested exception is
com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException: Expression #9 of SELECT list is not in GROUP BY clause and contains nonaggregated column
'ecommercewebsite.c.id' which is not functionally dependent on columns in GROUP BY clause; this is incompatible with sql_mode=only_full_group_by
999         at EcommerceWebsite.Dao.ProductsDaoTest.testGetDataProductsSize(ProductsDaoTest.java:37)
1000 Caused by: com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException: Expression #9 of SELECT list is not in GROUP BY clause and contains nonaggregated
column 'ecommercewebsite.c.id' which is not functionally dependent on columns in GROUP BY clause; this is incompatible with sql_mode=only_full_group_by
1001         at EcommerceWebsite.Dao.ProductsDaoTest.testGetDataProductsSize(ProductsDaoTest.java:37)
1002
1003 [INFO]
1004 [INFO] Results:
1005 [INFO]
1006 [ERROR] Errors:
1007 [ERROR] ProductsDaoTest.testGetDataProducts:31 » BadSqlGrammar StatementCallback; bad ...
1008 [ERROR] ProductsDaoTest.testGetDataProductsSize:37 » BadSqlGrammar StatementCallback; ...
1009 [INFO]
1010 [ERROR] Tests run: 12, Failures: 0, Errors: 2, Skipped: 0
1011 [INFO]
1012 [INFO] -----
1013 [INFO] BUILD FAILURE
1014 [INFO] -----
1015 [INFO] Total time: 4.693 s
1016 [INFO] Finished at: 2021-08-06T14:31:30Z
1017 [INFO] -----
1018 [ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.22.2:test (default-test) on project EcommerceWebsite: There are test
failures.
1019 [ERROR]
1020 [ERROR] Please refer to /home/travis/build/phuocinhbao/ecommerce_website/target/surefire-reports for the individual test results.
1021 [ERROR] Please refer to dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
1022 [ERROR] -> [Help 1]
1023 [ERROR]
1024 [ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
1025 [ERROR] Re-run Maven using the -X switch to enable full debug logging.
1026 [ERROR]
1027 [ERROR] For more information about the errors and possible solutions, please read the following articles:
1028 [ERROR] [Help 1] http://wiki.apache.org/confluence/display/MAVEN/MojoFailureException

```

Finally, the team decided to skip all test cases due to the reason that we can find a solution for this problem at least with our knowledge and ability with little time left of the first sprint. However, for the next sprint we will get back to this problem and try to

fix it. Moreover, so as not to repeat the mistake, next milestone all test cases will be about function testing instead of data testing in milestone 1.

```
1286 [INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ EcommerceWebsite ---
1287 [WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
1288 [INFO] skip non existing resourceDirectory /home/travis/build/phuocminhbao/ecommerce_website/src/test/resources
1289 [INFO]
1290 [INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ EcommerceWebsite ---
1291 [INFO] Nothing to compile - all classes are up to date
1292 [INFO]
1293 [INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ EcommerceWebsite ---
1294 [INFO] Surefire report directory: /home/travis/build/phuocminhbao/ecommerce_website/target/surefire-reports
1295 [INFO] Downloading from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-junit3/2.12.4/surefire-junit3-2.12.4.pom
1296 [INFO] Downloaded from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-junit3/2.12.4/surefire-junit3-2.12.4.pom (1.7 kB at 4.3 kB/s)
1297 [INFO] Downloading from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-providers/2.12.4/surefire-providers-2.12.4.pom
1298 [INFO] Downloaded from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-providers/2.12.4/surefire-providers-2.12.4.pom (2.3 kB at 168 kB/s)
1299 [INFO] Downloading from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-junit3/2.12.4/surefire-junit3-2.12.4.jar
1300 [INFO] Downloaded from google-maven-central: https://maven-central.storage-download.googleapis.com/maven2/org/apache/maven/surefire/surefire-junit3/2.12.4/surefire-junit3-2.12.4.jar (26 kB at 1.3 MB/s)
1301
1302 -----
1303   T E S T S
1304 -----
1305
1306 Results :
1307
1308 Tests run: 0, Failures: 0, Errors: 0, Skipped: 0
1309
1310 [INFO] -----
1311 [INFO] BUILD SUCCESS
1312 [INFO] -----
1313 [INFO] Total time: 2.102 s
1314 [INFO] Finished at: 2021-08-05T17:47:16Z
1315 [INFO] -----
1316 The command "mvn test -B" exited with 0.
1317
1318
1319 Done. Your build exited with 0.
```

This is how we set up Travis on .travis.yml file:

```
language: java
jdk:
  - openjdk8
  - openjdk10
services:
  - mysql
before_install:
  - mysql -u root --password="" < travis.sql

script:
  - echo "skipping tests"
```

Teamwork/Communication

1. Team roles

To start with the project the team has used the agile model which is SCUM in specific. For this methodology, there would be Product Owner, Scrum Master and developers. However, because of the meager amount of my team which is only 2 in specific, a team member will be a Scrum Master and also join the development team at the same time.

Role	Person-in-charge	Main Responsibilities
Product owner	Dr. Minh Dinh	- Reviewing the work and giving advice on how the product is conducted
Scrum Master	Thanh	- Prepare for sprint plan - Get all user stories of team member for reviewing and combining them - Always keep tracking on the progress of the sprint - Holding meeting to solve problems during the development period
Developer	Thanh, Phuoc	- Get to learn and practice new technologies for using in the project - Conducting tasks of each PBI

		- Write unit test case for each feature
--	--	---

2. Team communication

Types	Tools
Meeting and chat	<ul style="list-style-type: none"> - Microsoft Team - Discord - Messenger (Facebook)
Project management	<ul style="list-style-type: none"> - Github

Microsoft Team:

Mostly used for meeting with product owners for discussing the current situation of the project.

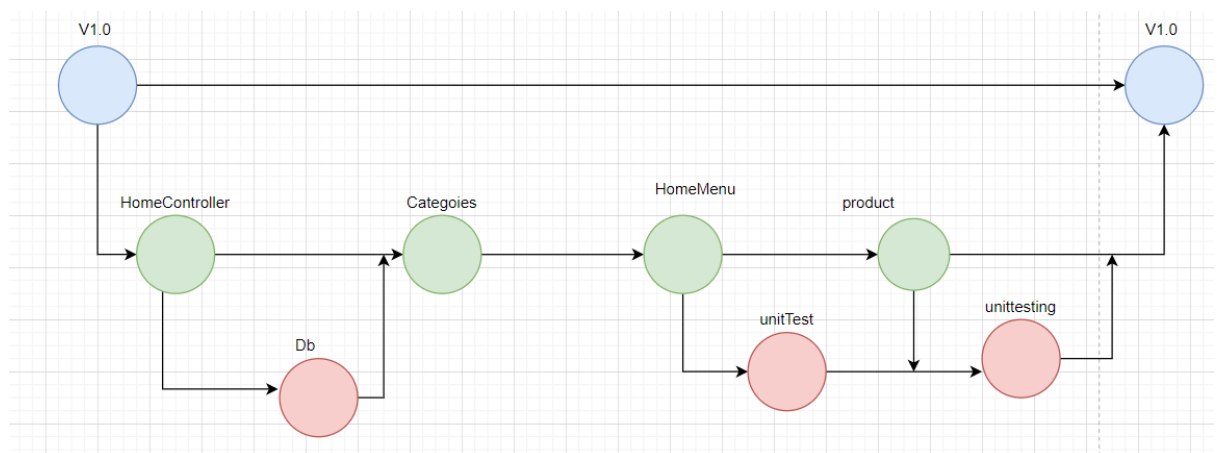
Meeting types	Frequency	Purpose
Sprint Meeting	Once weekly on Thursday	<ul style="list-style-type: none"> - Discussing about the current progress of product's development - Ask for advice from Product owner

Discord and Messenger:

The tools are always used for team member meetings.

Meeting types	Frequency	Purpose
Weekly scrum meetings	Once weekly on Friday	<ul style="list-style-type: none"> - Commenting on other works - Update the progress
Urgent meetings	5-6 days in a weeks	<ul style="list-style-type: none"> - Showing bugs for each other by streaming the screen - Test all solutions found

3. Gitflow



At the beginning of the project, the branch master and HomeController are created. After that, we completed building the database for the category tasks then branch Db and Categories were merged into Categories. Then we continue to code menu functionality and push it in a new branch called HomeMenu. In this process, we separated the work into building product functions and doing testing on two branch products and unitTest. After completing the product function, while unitTest is having some issues, we merge the product to unitTest and continue to fix bugs and push it to a new branch called unitTesting. In this state, we did the sprint one functionality, and it all ran fine, then we merged the final version to master.