

CSC301 - Assignment 1
Kaushik Murali and Hyeon Jeong Byeon
Application details

Group: assignment-1-81-kaushikmurali01-hyeonjeongbyeon

Important Links Summarized

Assignment Repository:

<https://github.com/csc301-fall-2021/assignment-1-81-kaushikmurali01-hyeonjeongbyeon>

Environments

(1) Development Environment:

<http://checkoutcalculatortesting-env.eba-3imhvu24.us-east-2.elasticbeanstalk.com/>

(2) Production Environment:

Checkoutcalculator-env.eba-s2eq4spd.us-east-2.elasticbeanstalk.com

Video rundown explaining functionality of web app:

https://www.youtube.com/watch?v=UjxlrOY6X0A&ab_channel=XOsKeLeToN

Video explaining CICD and deployment:

https://www.youtube.com/watch?v=tJop3hY5gZI&ab_channel=XOsKeLeToN

Application Usage and Functionalities

The page will be divided into 2 panels. The first panel on the left contains:

1. A dropdown menu which says 'Select Item'. You can select any item that you want to add to your cart.
2. You can change the quantity of the item by clicking the + button if you want to increase the quantity by one or the - button if you want to decrease the quantity by one.
3. You can add a discount for each group of items that you are going to add to your cart.
4. If you want to add the item to your cart, click the button 'Add Item to Cart'.
5. Once you click the add item to cart button, you should see your item and its details displayed on the second panel on the right.

One the second panel on the right:

1. You will see the items in your cart. You will be able to see for every item, row by row, details such as the product name, product quantity, product price, discount applied and subtotal.
2. You will also see a trash can image for each product in the cart. If you click that image, then the item will be removed from the cart.
3. The overall total can be seen below the details for each item. This total constantly updates when you add items to the cart and remove items from the cart.
4. There is also a label at the top of the panel that shows you how many items you have in your cart.

At the top right of the web page, you will be able to see a button 'Login to Dashboard'. If you click that button it takes you to another page, which shows you the list of products on sale along with their details.

There is a button on the top right of the page called 'Back to Shopping Cart', that takes you back to the previous shopping cart page. There is also another button called 'Add Product' that lets you add a product by removing the list of items and instead showing you a form which you can fill up to add a product of your choice. If you click the 'Product List' button which is above the 'Add product' button, it will display the updated list of products. You can then go back to the shopping cart and see that the product you added is in the dropdown list of items and you can add this item to your cart as well.

Video: https://www.youtube.com/watch?v=UjxlrOY6X0A&ab_channel=XOsKeLeToN

Web Application Local Testing

If you download the project from github, then to run it on your computer, you will need to download the Eclipse IDE and then do the following steps:

1. Download apache tomcat 8.5 or higher
2. Configure tomcat server in eclipse IDE
Useful video tutorial: <https://www.youtube.com/watch?v=PH-bK3g2YmU>
3. Download and install Java 11 or higher

Instructions:

<https://www.codejava.net/java-se/download-and-install-java-11-openjdk-and-oracle-jdk>

Once you set up everything, you will need to open a maven project and copy all the files into the new maven project you created.

To run on localhost, start the Tomcat server and then go to your browser and go to the URL: `localhost:8080/<project-name>`

Web Application CI/CD and Deployment

Our web app uses Jenkins to do the CI/CD. All the steps are shown in the video below.

https://www.youtube.com/watch?v=tJop3hY5gZI&ab_channel=XOsKeLeToN

Here are some screenshots of our latest build.

Dashboard ▶ checkout_calculator_project ▶ #32

Back to Project

Status

Changes

Console Output

View as plain text

Edit Build Information

Delete build '#32'

Git Build Data

Test Result

Redeploy Artifacts

See Fingerprints

Previous Build

✓ Console Output

Started by user **kaushik**
Running as SYSTEM
Building in workspace /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project
[WS-CLEANUP] Deleting project workspace...
[WS-CLEANUP] Deferred wipeout is used...
[WS-CLEANUP] Done
The recommended git tool is: NONE
using credential 97773a6f-90fb-48c5-97f6-51fd1865805c
Cloning the remote Git repository
Cloning repository <https://github.com/csc301-fall-2021/assignment-1-81-kaushikmurali01-hyeonjeongbyeon>
> git init /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project # timeout=10
Fetching upstream changes from <https://github.com/csc301-fall-2021/assignment-1-81-kaushikmurali01-hyeonjeongbyeon>
> git --version # timeout=10
> git --version # 'git version 2.20.1 (Apple Git-117)'
using GIT_ASKPASS to set credentials added person access token
> git fetch --tags --force --progress -- <https://github.com/csc301-fall-2021/assignment-1-81-kaushikmurali01-hyeonjeongbyeon> +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url <https://github.com/csc301-fall-2021/assignment-1-81-kaushikmurali01-hyeonjeongbyeon> # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision bbb809af7564442d14c5781d19a7d0f08590d0e9 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f bbb809af7564442d14c5781d19a7d0f08590d0e9 # timeout=10
Commit message: "tests"
> git rev-list --no-walk dadc8c304125c9385a3045975501bb1bdbada85a # timeout=10
Parsing POMs
Modules changed, recalculating dependency graph
Established TCP socket on 62883
[checkout_calculator_project] \$ /Users/muraligopalswamy/.jenkins/tools/hudson.model.JDK/1d1.8/bin/java -cp

The tick check mark shows that the build was successful. If you zoom in you can see that when we pushed, the build started running and pulled from our git repository.

Dashboard ▶ checkout_calculator_project ▶ #32

[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory
/Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:testCompile (default-testCompile) @ hello ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/target/test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ hello ---
[INFO] Surefire report directory: /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/target/surefire-reports

T E S T S

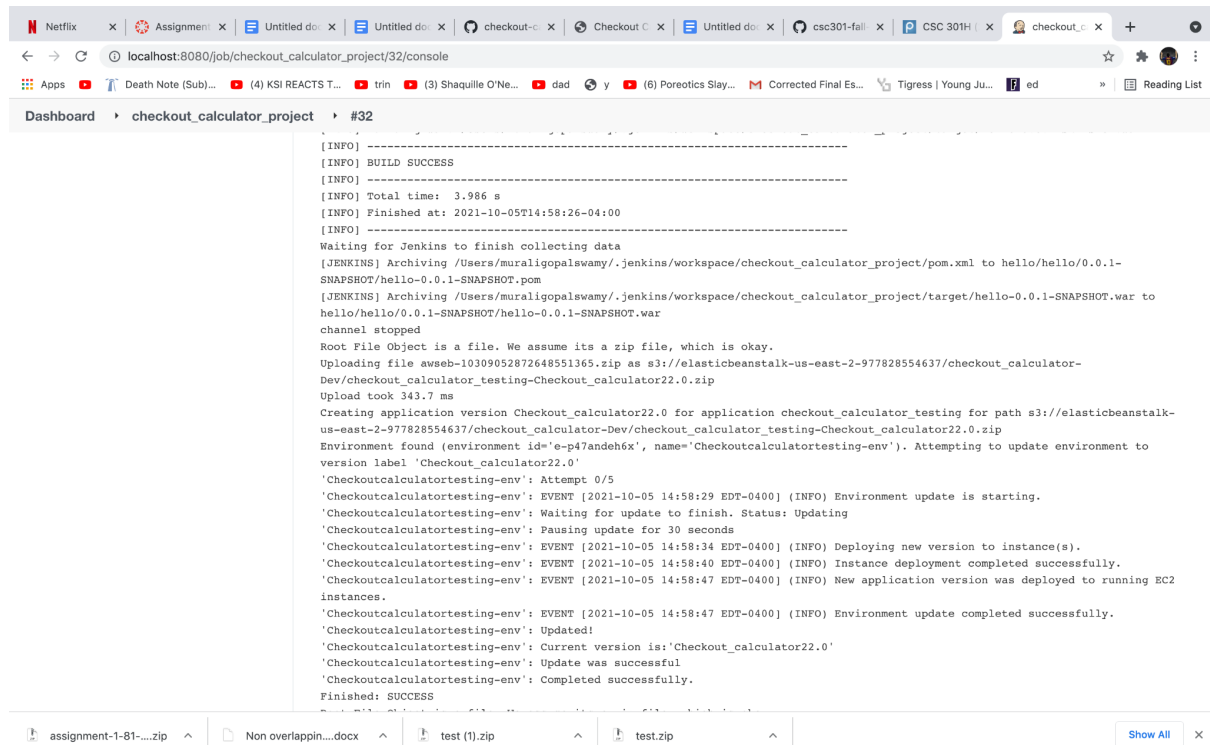
Running org.ProductManagementTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.067 sec

Results :

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

[JENKINS] Recording test results
[INFO]
[INFO] --- maven-war-plugin:3.2.3:war (default-war) @ hello ---
[INFO] Packaging webapp
[INFO] Assembling webapp [hello] in [/Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/target/hello-0.0.1-SNAPSHOT]
[INFO] Processing war project
[INFO] Copying webapp resources [/Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/src/main/webapp]
[INFO] Webapp assembled in [55 msecs]
[INFO] Building war: /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/target/hello-0.0.1-SNAPSHOT.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----

If you zoom into the screenshot, you can see that the build automatically runs our JUnit test and passes.

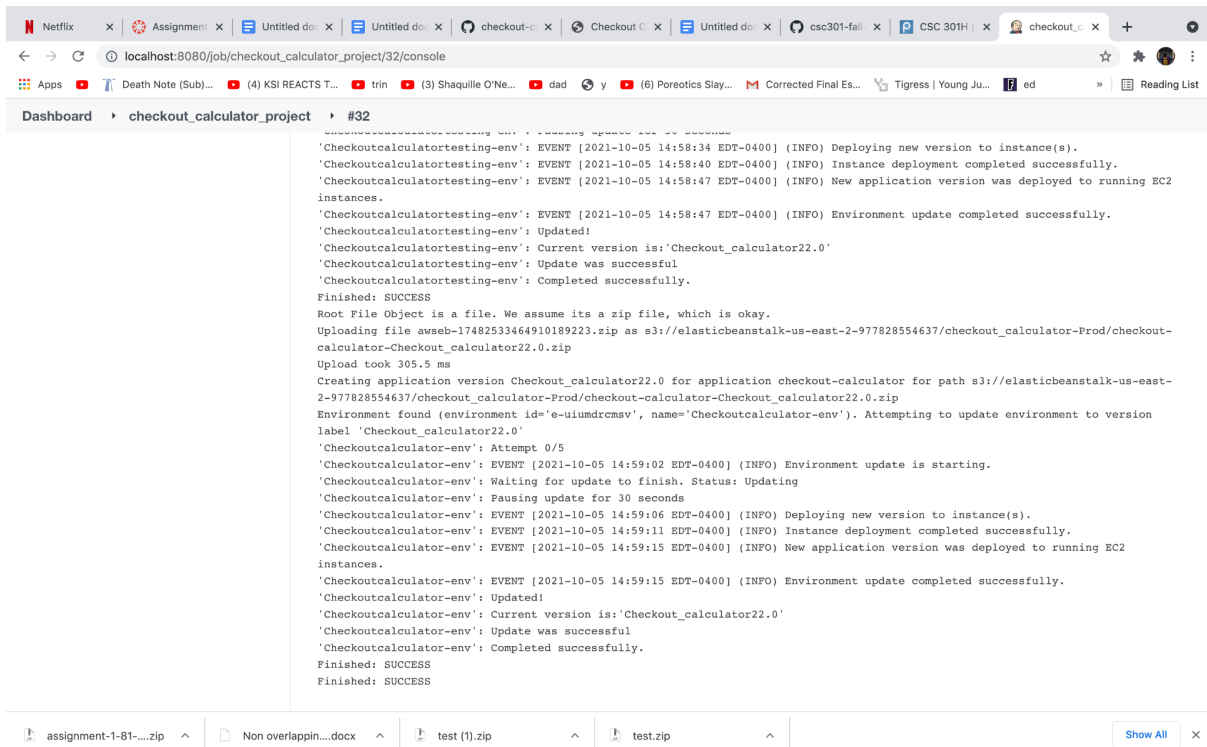


```
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.986 s
[INFO] Finished at: 2021-10-05T14:58:26-04:00
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/pom.xml to hello/hello/0.0.1-SNAPSHOT/hello-0.0.1-SNAPSHOT.pom
[JENKINS] Archiving /Users/muraligopalswamy/.jenkins/workspace/checkout_calculator_project/target/hello-0.0.1-SNAPSHOT.war to hello/hello/0.0.1-SNAPSHOT/hello-0.0.1-SNAPSHOT.war
channel stopped
Root File Object is a file. We assume its a zip file, which is okay.
Uploading file awseb-10309052872648551365.zip as s3://elasticbeanstalk-us-east-2-977828554637/checkout_calculator-Dev/checkout_calculator_testing-Checkout_calculator22.0.zip
Upload took 343.7 ms
Creating application version Checkout_calculator22.0 for application checkout_calculator_testing for path s3://elasticbeanstalk-us-east-2-977828554637/checkout_calculator-Dev/checkout_calculator_testing-Checkout_calculator22.0.zip
Environment found (environment id='e-p47andeh6x', name='Checkoutcalculatortesting-env'). Attempting to update environment to version label 'Checkout_calculator22.0'
'Checkoutcalculatortesting-env': Attempt 0/5
'Checkoutcalculatortesting-env': EVENT [2021-10-05 14:58:29 EDT-0400] (INFO) Environment update is starting.
'Checkoutcalculatortesting-env': Waiting for update to finish. Status: Updating
'Checkoutcalculatortesting-env': Pausing update for 30 seconds
'Checkoutcalculatortesting-env': EVENT [2021-10-05 14:58:34 EDT-0400] (INFO) Deploying new version to instance(s).
'Checkoutcalculatortesting-env': EVENT [2021-10-05 14:58:40 EDT-0400] (INFO) Instance deployment completed successfully.
'Checkoutcalculatortesting-env': EVENT [2021-10-05 14:58:47 EDT-0400] (INFO) New application version was deployed to running EC2 instances.
'Checkoutcalculatortesting-env': EVENT [2021-10-05 14:58:47 EDT-0400] (INFO) Environment update completed successfully.
'Checkoutcalculatortesting-env': Updated!
'Checkoutcalculatortesting-env': Current version is:'Checkout_calculator22.0'
'Checkoutcalculatortesting-env': Update was successful
'Checkoutcalculatortesting-env': Completed successfully.
Finished: SUCCESS
```

After running the tests, it starts to deploy the master branch to the staging server (development environment) called Checkoutcalculatortesting-env.

Development Environment:

<http://checkoutcalculatortesting-env.eba-3imhvu24.us-east-2.elasticbeanstalk.com/>



```
'Checkoutcalculator-env': EVENT [2021-10-05 14:58:34 EDT-0400] (INFO) Deploying new version to instance(s).
'Checkoutcalculator-env': EVENT [2021-10-05 14:58:40 EDT-0400] (INFO) Instance deployment completed successfully.
'Checkoutcalculator-env': EVENT [2021-10-05 14:58:47 EDT-0400] (INFO) New application version was deployed to running EC2 instances.
'Checkoutcalculator-env': EVENT [2021-10-05 14:58:47 EDT-0400] (INFO) Environment update completed successfully.
'Checkoutcalculator-env': Updated!
'Checkoutcalculator-env': Current version is:'Checkout_calculator22.0'
'Checkoutcalculator-env': Update was successful
'Checkoutcalculator-env': Completed successfully.
Finished: SUCCESS
Root File Object is a file. We assume its a zip file, which is okay.
Uploading file awseb-17482533464910189223.zip as s3://elasticbeanstalk-us-east-2-977828554637/checkout_calculator-Prod/checkout-calculator-Checkout_calculator22.0.zip
Upload took 305.5 ms
Creating application version Checkout_calculator22.0 for application checkout-calculator for path s3://elasticbeanstalk-us-east-2-977828554637/checkout_calculator-Prod/checkout-calculator-Checkout_calculator22.0.zip
Environment found (environment id='e-uidmrcmsv', name='Checkoutcalculator-env'). Attempting to update environment to version label 'Checkout_calculator22.0'
'Checkoutcalculator-env': Attempt 0/5
'Checkoutcalculator-env': EVENT [2021-10-05 14:59:02 EDT-0400] (INFO) Environment update is starting.
'Checkoutcalculator-env': Waiting for update to finish. Status: Updating
'Checkoutcalculator-env': Pausing update for 30 seconds
'Checkoutcalculator-env': EVENT [2021-10-05 14:59:06 EDT-0400] (INFO) Deploying new version to instance(s).
'Checkoutcalculator-env': EVENT [2021-10-05 14:59:11 EDT-0400] (INFO) Instance deployment completed successfully.
'Checkoutcalculator-env': EVENT [2021-10-05 14:59:15 EDT-0400] (INFO) New application version was deployed to running EC2 instances.
'Checkoutcalculator-env': EVENT [2021-10-05 14:59:15 EDT-0400] (INFO) Environment update completed successfully.
'Checkoutcalculator-env': Updated!
'Checkoutcalculator-env': Current version is:'Checkout_calculator22.0'
'Checkoutcalculator-env': Update was successful
'Checkoutcalculator-env': Completed successfully.
Finished: SUCCESS
Finished: SUCCESS
```

Then it deploy the master branch to the production server (production environment) called Checkoutcalculator-env.

Production Environment:

Checkoutcalculator-env.eba-s2eq4spd.us-east-2.elasticbeanstalk.com