SW Engineering CSC 648/848 Fall 2018
Section 01

GatorTrader

Team # 02 (Local)

Gayatri Pise, Team Lead | gpise@mail.sfsu.edu
Peter Malolepszy
Divam Shah
Dylan Wright
Moses Martinez
Charul Ramtekkar
Regine Manuel

"Milestone 4"

Date: 12/2/2018

History Table

Version	Date	Owner(s)	Description
1.0	12/02/18	Gayatri	Submitted for Review
2.0	12/14/18	Gayatri	Document Revision and Freeze

1) PRODUCT SUMMARY

Name of our product - **GatorTrader**

Below is the list of ALL major committed P1 functions for GatorTrader.

- Home Page
- Search (with search text validation)
- Search results
- Item details
- Login and Registration
- Item posting
- Message from buyer to seller
- Seller dashboard (for seller items and messages)
- Admin dashboard (back up is to use DB native admin tool but must show ability to approve posted images)

GatorTrader is a buying and selling website specially designed for San Francisco State University students. Gator Trader will be marketed as a website created by SFSU students for SFSU students. This website would serve as a platform for students to sell their unused items, old class materials, etc. as well as buy essential items at a cheaper rate compared to the market price. It will provide an affordable and safe marketplace for students to exchange their belongings.

Moreover, this website builds direct communication between buyer and seller. This unique approach will eliminate long wait times and no shipping costs would be involved. The basic attraction of our website is its simplicity and user-friendliness. Also, the good design of GatorTrader can be eventually used as a template for other universities looking to design their own buy and sell website.

URL to our website: **https://se-csc648-fa18-section1-team02.herokuapp.com**

2) USABILITY TEST PLAN

Test Objective:

The goal of usability testing is to identify any usability problems, collect quantitative data on participants' performance as well as determine user satisfaction for the website. If a website is difficult to navigate or doesn't clearly articulate a purpose, users will leave it. Ideally, usability testing is done before a site launches, and then many times after. Currently, our website is in its development and testing phase. Hence, usability testing will help us to find out the flaws or weakness in the usability flow at an early stage. User comments or reviews will help us to judge and improve our website in terms of usability.

We will be conducting a usability test for posting an item on our website. This will allow the user to navigate through a series of usage flows touching on the main components of the website. It will focus on logging in with user details on GatorTrader, posting an item for sale and then reviewing the posted item in seller dashboard. Also, test users will be asked to fill a survey consisting of a Likert scale. Success factors would then be determined based on feedback from the test users.

Test plan:

Purpose:

The purpose of this test is to identify any usability problems within our website. Usability test would include the functionality of posting an item for sale and viewing it.

System Setup:

A laptop with an internet connection is required and access to any web browsers such as Google Chrome, Mozilla Firefox, Safari, etc. We will be testing our website on two latest versions of all major browsers in order to check the consistency while using our website on different browsers.

Starting point:

The starting point will be the homepage of our website located on below URL.
URL: **https://se-csc648-fa18-section1-team02.herokuapp.com/**

Task Description:

There are different tasks that the user needs to go through in order to successfully post an item and then view the posted item. This consists of opening the website, logging in with credentials, posting an item for sale and then checking the posted item in their respective seller dashboard and view item details.

Task	Machine State	Successful Completion criteria	Benchmark
Open GatorTrader website on browser	URL just loaded	Homepage of the website displayed	Completed in 30 sec
Login on Gator Trader with	Login Page loaded	Login successful and search page displayed	Completed in 30 sec

credentials		consisting item list	
Post an item for sale	Empty post form loaded	Filled out all the required fields and posted the item successfully.	Completed in 30 sec
Checking the posted item in My Dashboard	My Dashboard page loaded	Located the posted item in My Dashboard with status Pending.	Completed in 30 sec

Completion Criteria:
User has successfully completed the following tasks: -

1. Launched the website URL on browser.
2. Found the Login button and Logged in successfully.
3. Found the Sell an Item button and posted an item successfully.
4. Found My Dashboard button and could see the item posted in My Dashboard with status pending.

User Satisfaction Questionnaire

Website user survey. Select one option for below questions: -

Task	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The GUI is simple and user friendly.					
It was easy to post an item for sale on Gator Trader.					
It was easy to locate the posted item in My Dashboard after posting.					
Item details were easy to understand when displayed in My Dashboard page.					

General Comments/Feedback: -

3) QA TEST PLAN

Test Objective:
Quality assurance (QA) is a systematic process of verifying whether a software meets required specifications and customer expectations. The objective of below QA tests would be to test the functionality of posting an item for sale and viewing it on GatorTrader website, find bugs and resolve them prior to product release.

HW and SW setup:

- A laptop with an internet connection is required and access to any web browsers such as Google Chrome, Mozilla Firefox, Safari, etc.
- Browse to the website using the following URL. This will direct to the homepage of our website.
- URL: https://se-csc648-fa18-section1-team02.herokuapp.com/
- Unregistered users need to sign up using the Sign-Up clickable text located at the top right corner of the homepage.
- After successful registration, User should login by clicking on the Login text located at the top right corner of the home page.
- Enter Email and Password and Click Login Button.
- User should be logged in successfully and the search page should be displayed.
- Once logged in, test the following cases for posting an item.

Feature to be tested: The post an item feature for registered and logged in users.

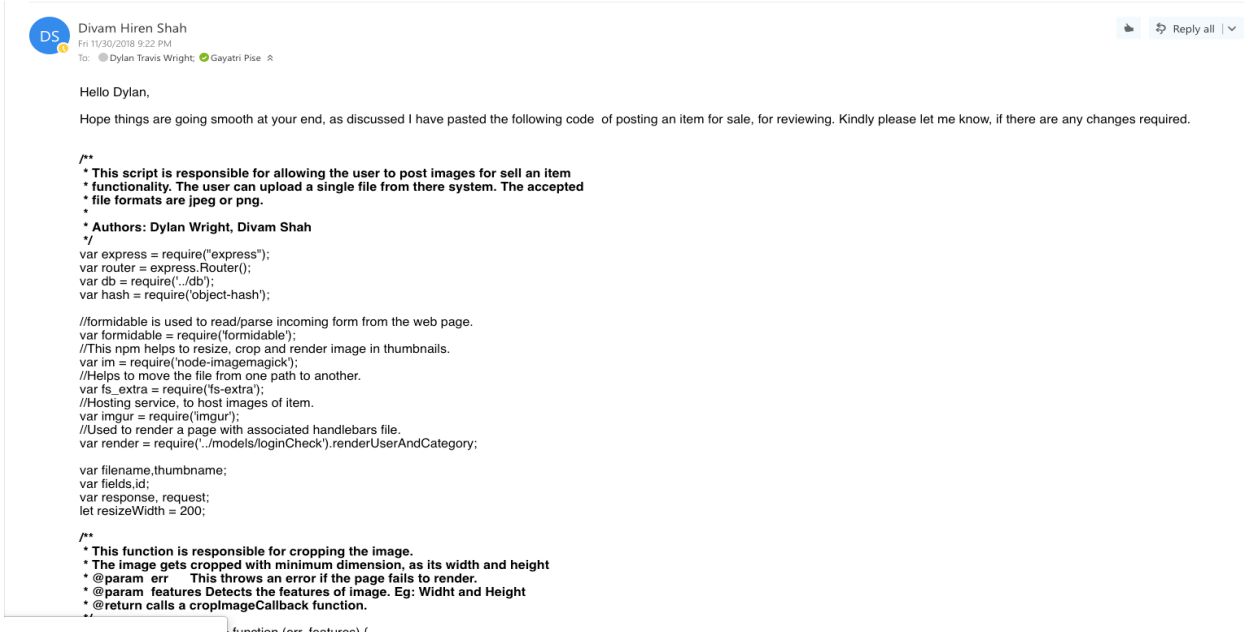
Tasks:

Test ID	User Type	Test Description	Test Input	Expected Correct Output	Test Results on Chrome	Test Results on Firefox
1.	Registered and Logged In User	Open the following URL in browser. **https://se-csc648-fa18-section1-team02.herokuapp.com/post** Users is logged in and shall post an item for sale. This test will check if logged in user can locate and go to Sell an	Locate Sell an Item button located at the top right of the page the home page. Input – Click on Sell an Item button	If user is logged in, Sell an Item page should be loaded successfully consisting of form fields as below. Title, Category, Price Description, Image upload button.	Pass	Pass

		Item page by clicking the Sell an Item button.		Post and Cancel button at bottom of the page.		
2.		Open the following URL in browser. **https://se-csc648-fa18-section1-team02.herokuapp.com/post** Users is logged in and shall post an item for sale by entering the details required in the post form. This test will check if logged in users can enter the details in the post form and post an item successfully.	Input the below data in the form displayed after clicking on Sell an Item button. Input details as below: - Title - Cap Category - Clothes Price - $5 Description - Unused cap for sale at cheaper price Image - Upload any cap image. After entering the details Click on Post button located at the bottom of the post page.	Item should be posted successfully displaying item details such as Item Image, Item Name, Price, Category Description and Contact Seller Button. The Item details displayed should match the input item details. Note – Posted Item should not be displayed on the Home/Search page of the website unless approved by the admin.	Pass	Pass
3.		Open the following URL in browser. **https://se-csc648-fa18-section1-team02.herokuapp.com/post** Users is logged in and shall post an item for sale by entering the	Input the below data in the form displayed after clicking on Sell an Item button. Input details as below: - Category -	Item should not be posted and a message “Please fill out this field” should be displayed for field Title.	Pass	Pass

		details required in the post form. This test will check that logged in users cannot post an item as they did not enter all required fields.	Books Price - $100 Description - Cracking the coding Interview book Image - Upload the book image. After entering the details Click on Post button located at the bottom of the post page.			
4.		Open the following URL in browser. **https://se-csc648-fa18-section1-team02.herokuapp.com/dashboard** Users is logged in and shall post an item for sale successfully. User shall be able check the posted item in My Dashboard with Pending status. This test will check if logged in user can locate My Dashboard button and go to My Dashboard page by clicking on it.	Locate My Dashboard button located at the top right of the page Input - Click on My Dashboard button	My dashboard page should be loaded. In the Items tab, it should display posted item details with Pending status. My Dashboard page should contain following fields: - Thumbnail of the image Title, Category, ID Number, Price, Date, Description, Status, And Remove Item button.	Pass	Pass

4) CODE REVIEW



Divam Hiren Shah
Fri 11/30/2018 9:22 PM
To: Dylan Travis Wright; Gayatri Pise

Reply all

Hello Dylan,

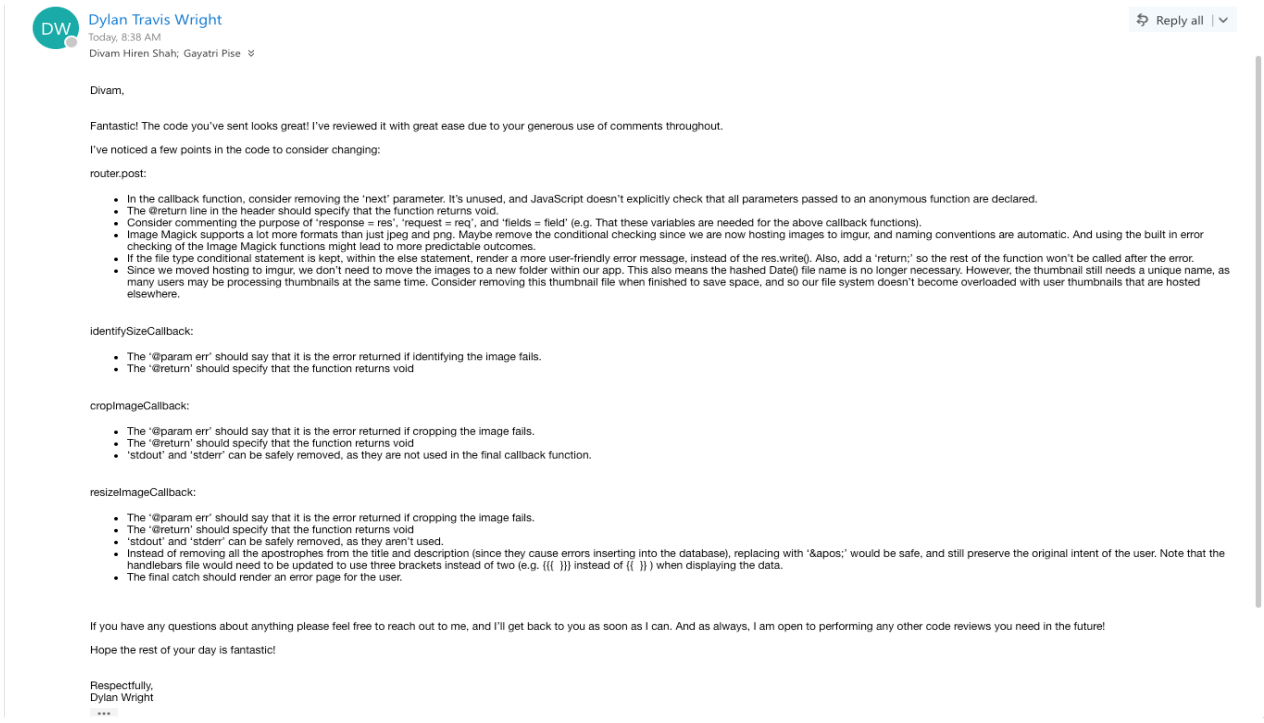
Hope things are going smooth at your end, as discussed I have pasted the following code of posting an item for sale, for reviewing. Kindly please let me know, if there are any changes required.

```
/**
 * This script is responsible for allowing the user to post images for sell an item
 * functionality. The user can upload a single file from there system. The accepted
 * file formats are jpeg or png.
 *
 * Authors: Dylan Wright, Divam Shah
 */
var express = require("express");
var router = express.Router();
var db = require('../db');
var hash = require('object-hash');

//formidable is used to read/parse incoming form from the web page.
var formidable = require('formidable');
//This npm helps to resize, crop and render image in thumbnails.
var im = require('node-imagemagick');
//Helps to move the file from one path to another.
var fs_extra = require('fs-extra');
//Hosting service, to host images of item.
var imgur = require('imgur');
//Used to render a page with associated handlebars file.
var render = require('../models/loginCheck').renderUserAndCategory;

var filename,thumbname;
var fields,id;
var response, request;
let resizeWidth = 200;

/**
 * This function is responsible for cropping the image.
 * The image gets cropped with minimum dimension, as its width and height
 * @param  err      This throws an error if the page fails to render.
 * @param  features Detects the features of image. Eg: Widht and Height
 * @return calls a cropImageCallback function.
```



Dylan Travis Wright
Today, 8:38 AM
Divam Hiren Shah; Gayatri Pise

Reply all

Divam,

Fantastic! The code you've sent looks great! I've reviewed it with great ease due to your generous use of comments throughout.

I've noticed a few points in the code to consider changing:

router.post:

- In the callback function, consider removing the 'next' parameter. It's unused, and JavaScript doesn't explicitly check that all parameters passed to an anonymous function are declared.
- The @return line in the header should specify that the function returns void.
- Consider commenting the purpose of 'response = res', 'request = req', and 'fields = field' (e.g. That these variables are needed for the above callback functions).
- Image Magick supports a lot more formats than just jpeg and png. Maybe remove the conditional checking since we are now hosting images to imgur, and naming conventions are automatic. And using the built in error checking of the Image Magick functions might lead to more predictable outcomes.
- If the file type conditional statement is kept, within the else statement, render a more user-friendly error message, instead of the res.write(). Also, add a 'return;' so the rest of the function won't be called after the error.
- Since we moved hosting to imgur, we don't need to move the images to a new folder within our app. This also means the hashed Date() file name is no longer necessary. However, the thumbnail still needs a unique name, as many users may be processing thumbnails at the same time. Consider removing this thumbnail file when finished to save space, and so our file system doesn't become overloaded with user thumbnails that are hosted elsewhere.

identifySizeCallback:

- The '@param err' should say that it is the error returned if identifying the image fails.
- The '@return' should specify that the function returns void

cropImageCallback:

- The '@param err' should say that it is the error returned if cropping the image fails.
- The '@return' should specify that the function returns void
- 'stdout' and 'stderr' can be safely removed, as they are not used in the final callback function.

resizeImageCallback:

- The '@param err' should say that it is the error returned if cropping the image fails.
- The '@return' should specify that the function returns void
- 'stdout' and 'stderr' can be safely removed, as they aren't used.
- Instead of removing all the apostrophes from the title and description (since they cause errors inserting into the database), replacing with ''' would be safe, and still preserve the original intent of the user. Note that the handlebars file would need to be updated to use three brackets instead of two (e.g. {{{ }}} instead of {{ }}) when displaying the data.
- The final catch should render an error page for the user.

If you have any questions about anything please feel free to reach out to me, and I'll get back to you as soon as I can. And as always, I am open to performing any other code reviews you need in the future!

Hope the rest of your day is fantastic!

Respectfully,
Dylan Wright

CSC648- SOFTWARE ENGINEERING - CODE REVIEW - POST AN ITEM

Dylan Travis Wright

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Reply all|

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 * functionality. The user can upload a single file from there system. The accepted
 * file formats are jpeg or png.
 *
 * Authors: Dylan Wright, Divam Shah
 */

var express = require("express");

var router = express.Router();

var db = require('../db');

var hash = require('object-hash');
```

```
//formidable is used to read/parse incoming form from the web page.
var formidable = require('formidable');
//This npm helps to resize, crop and render image in thumbnails.
var im = require('node-imagemagick');
//Helps to move the file from one path to another.
var fs_extra = require('fs-extra');
//Hosting service, to host images of item.
var imgur = require('imgur');
//Used to render a page with associated handlebars file.
var render = require('../models/loginCheck').renderUserAndCategory;

var filename,thumbname;
var fields,id;
var response, request;
let resizeWidth = 200;

/**
 * This function is responsible for cropping the image.
 * The image gets cropped with minimum dimension, as its width and height
 * @param  err      This throws an error if the page fails to render.
 * @param  features Detects the features of image. Eg: Widht and Height
 * @return calls a cropImageCallback function.
 */
var identifySizeCallback = function (err, features) {
  if (err) throw err;
  // Get height and width
  let width = features.width;
  let height = features.height;
  // Get smallest dimension
  let smallestDimension = Math.min(height, width);
  // Crop width from center
```

```
  console.log("Cropping...")
  im.crop({
    srcPath: './public/images/user_images/' + filename,
    dstPath: './public/images/user_images/' + thumbname,
    width: smallestDimension,
    height: smallestDimension,
    quality: 1,
    gravity: "Center"
  }, cropImageCallback);
}

/**
 * This function is responsible for resizing image after getting cropped.
 * @param  err throws error if page fails to render.
 * @param  stdout Standard output
 * @param  stderr Standard error
 * @return calls resizeImageCallback function.
 */

var cropImageCallback = function(err, stdout, stderr){
  if (err) throw err;
  console.log('Cropped');
  console.log('Resizing');
  // Resize image
  im.resize({
    srcPath: './public/images/user_images/' + thumbname,
    dstPath: './public/images/user_images/' + thumbname,
    width:   resizeWidth
  }, resizeImageCallback(err, stdout, stderr));
}

/**
```

```
 * This function is responsible for uploading image on imgur hosting service.
 * It uploads the original file as well as thumbnail version of it.
 * It also populates the image database through pg-promise.
 *
 * @param  err throws error if page fails to render.
 * @param  stdout Standard output
 * @param  stderr Standard error
 * @return calls renderUserAndCategory through render with corresponding post handlebars
 * and css.
 */


var resizeImageCallback = function(err, stdout, stderr){
  if (err) throw err;
  console.log('Resized');
  //Uploading of original file
  imgur.uploadFile('./public/images/user_images/' + filename)
    //returns a json file.
    .then( (filejson) => {
      //Uploading of thumbnail version of file.
      imgur.uploadFile('./public/images/user_images/' + thumbname)
      //returns a json file of thumbnail version.
      .then( thumbjson => {
        console.log(filejson.data.link);
        console.log(thumbjson.data.link);
        console.log(fields.category)
        //Removes all the '/" from incoming form.
        let title = fields.title.replace(/'/g, '');
        let description = fields.description.replace(/'/g, '');
        // Insert new item into database
        db.any(
          `INSERT INTO item(
            item_title,
```

```
    item_description,
    item_price,
    item_status,
    user_id,
    category_id,
    item_image,
    item_availability,
    item_image_thumbnail
  )
  VALUES
  (
    '` + title + `',
    '` + description + `',
    '` + fields.price + `',
    'Pending',
    ` + id + `,
    ` + fields.category + `,
    '` + filejson.data.link + `',
    true,
    '` + thumbjson.data.link + `'
  )
  RETURNING item_id`
 )
 // Query returns with data called 'myData'
 .then(function(myData) {
  response.redirect('./item/' + myData[0].item_id);
 })
 //If there is an error, it is catched here.
 .catch(function(error) {
  render(request, response, 'post', 'POST PAGE', 'post');
 });
})
```

```
    })
    .catch(function (err) {
        console.error(err.message);
    });
}

/**
 * This is the main function route, which parses the incoming form and then performs
 * the above mentioned fucntions and callBacks. It also moves the image file from original
 * file directory to a new directory.
 * @param req  it is a request to the http
 * @param res  it is a response to the http
 * @returns newpath of the file
 */
router.post('/', function(req, res, next) {
  id = req.session.user_id;
  response = res;
  request = req;
  // Get incoming form
  var form = new formidable.IncomingForm();
  // Parse incoming form
  form.parse(req, function (err, field, files) {
    fields = field
    // Hash the time now for uncollidable filenames
    var name = hash.sha1(Date.now());
    // If the file is a jpeg...
    if (files.image_file.type == 'image/jpeg') {
      // Append the correct suffix
      filename = name + '.jpg';
      thumbname = name + '_thumb.jpg';
    }
    // If the file is a png...
```

```
    else if (files.image_file.type == 'image/png') {
      // Append the correct suffix
      filename = name + '.png';
      thumbname = name + '_thumb.png';
    }
    else {
      res.write("Not an image file");
      res.end();
    }
    console.log(filename);
    // Get temp path of uploaded image
    var oldpath = files.image_file.path;
    // Specify new path for uploaded image
    var newpath = './public/images/user_images/' + filename;
    // Move and rename image file to public/images/
    fs_extra.move(oldpath, newpath, function (err) {
      if (err) throw err;
      // Read height and width
      im.identify(newpath, identifySizeCallback);
    });
  });
});
module.exports = router;
```

Regards,

Divam Shah

Back End Team

5) SELF-CHECK ON BEST PRACTICES FOR SECURITY

Major assets we are protecting:

1. User Information - User Information is securely stored in DB and is visible only to the authorized administrator of the website.
2. Password Protection - Passwords are encrypted.
3. Image Uploads - Rename the file on upload to ensure the correct file extension, or to change the file permissions. Also, protect item id by putting them in DB with access control so that no one access with item id.
4. Watching out for SQL Injection - Search bar input validation of less than 40 alphanumeric characters has been taken care of.
5. Append a user agreement in the terms and conditions while signing up for our website - This will help to assure that all image uploads belong to user and any copyright issues will be the user responsibility.
6. The website shall prominently display the following text on all pages “SFSU-Fulda Software Engineering Project CSC 648-848, Fall 2018. For Demonstration only” in order to avoid conflicts with other buy and sell websites.

Confirm of the password in the DB

Yes, the password is encrypted.

Confirm Input data validation

- Search bar input validation - less than 40 characters.
- Search bar input validation - no special characters (alphanumeric only).
- Search bar input validation - empty search shows all the item list.
- Search bar output validation - provided valid search, provides some result.

6) SELF-CHECK: ADHERENCE TO ORIGINAL NON-FUNCTIONAL SPECS

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team, but all tools and servers have to be approved by class CTO) - **DONE**
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome - **DONE**
3. Selected application functions must render well on mobile devices - **ON TRACK**
4. Data shall be stored in the team's chosen database technology on the team's deployment server - **DONE**
5. No more than 50 concurrent users shall be accessing the application at any time - **ON TRACK**
6. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users - **DONE**
7. The language used shall be English - **DONE**
8. Application shall be very easy to use and intuitive - **ON TRACK**
9. Google analytics shall be added - **ON TRACK**
10. No email clients shall be allowed - **DONE**
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented
nor simulated - **DONE**
12. Site security: basic best practices shall be applied (as covered in the class) - **DONE**
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development - **DONE**
14. The website shall prominently display the following exact text on all pages **"SFSU-Fulda Software Engineering Project CSC 648-848, Fall 2018. For Demonstration Only"** at the top of the WWW page. (Important so as to not confuse this with a real application). - **DONE**