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|  | |  | | | |
| Project: | | Auto-Learn | | | |
| Team No.: | | 2 | | | |
| Class: | | CSE 3310; Spring 2020 | | | |
| Module: | | Test Plan | | | |
| Deliverable: | | Test Plan Document | | | |
| **Version:** | | | **[2.0]** | **Date:** | **[04/27/2020]** |

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**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Version number*** | ***Date*** | ***Originator*** | ***Reason for change*** | ***High level description of changes*** |
| 1.0 | 04/06/2020 | Edrik Aguilera  William Anderson  Ryan Laurents | Initial draft | Sections 2-8 implemented |
| 1.1 | 04/15/2020 | Edrik Aguilera | Last column filled | Pass or fail checks |
| 1.2 | 04/26/2020 | Ryan Laurents | Updating changes | Preparing for final draft |
| 2.0 | 04/27/2020 | Ryan Laurents  Edrik Aguilera | Final draft |  |

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# 1. Introduction and Plan of Approach

**Summary**

AutoLearn is an android application supporting version 7.0 (Nougat) of Android. The app should be able to allow users to upload pictures, and classify the picture if it has a vehicle or not. The app should use a machine learning model to classify the vehicles. The picture should be classified as one of the following categories: Coupe, SUV, Sedan, Convertible, Van, Truck. After the user has taken a picture or chosen one to classify the model should classify the picture and display the results to the user. The user can then choose to make another classification by uploading another picture, or the user can choose to view the statistics of the classification they just performed. The user should also be able to customize their account by choosing another profile picture, changing their password, changing their college/academic information, and the changes should be saved to a database. Previous classifications should be seen in the user’s account statistics and they should be able to view them, save them, or delete them.

In general here are the functions users should be able to do with AutoLearn in no specific order:

* Upload a picture
* Create an account
* Classify a picture with a vehicle
* View statistics of a previous classification performed
* View, save, or delete previous classifications
* Customize their account
* Change profile picture, personal information, and password

**Assumptions**

* User’s phone has wifi connection
* User’s phone has a camera
* User’s phone has a touch screen
* User’s phone has sufficient system requirements
* User’s phone has the accurate operating system

**Components covered**

1. Login
2. Sign up
3. Home Screen
4. Menu
5. Account Settings
6. Take Photo
7. Upload Photo
8. Classification

# 2. Test Cases: “Login”

**Project Name:** Auto-Learn

**Test Case Name:** Login

**Test Case Id**: CSE3310/Spring 2020/Team2/ Login

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Sign Up | Click the “Sign up” text in the bottom right of the login page. | The user will be navigated to the sign up page. | **Pass:** New activity is presented |
| TC2 - Login | Tab into the email and password fields and enter a valid user ID/password. | System should allow the user to login and navigate to the home screen. | **Pass:** Firebase successfully retrieves the account information. |
| TC3 - Invalid Login | Tab into the email and password fields and enter an invalid username and password. | System should not accept the invalid credentials and prevent you from entering the system. | **Pass:** Firebase successfully checks for valid login information. |
| TC4 - Forgot Password | Enter a valid username and press “Forgot Password”. | System should prompt you with a security question and send a temporary password to your email. | **Pass:** The app will send a password reset link to your email |
| TC6 - Logo | AutoLearn logo. | The AutoLearn logo should display on the splash page. | **Pass** |

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# 3. Test Cases: “Sign up”

**Project Name:** Auto-Learn

**Test Case Name:** Sign up

**Test Case Id**: CSE3310/Spring 2020/Team2/Sign\_Up

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|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Enter Profile Info | Enter the below information and hit “Next”   * Name * Profile picture (optional) * Email - Valid email address. * Password * Confirm password | Application will create a firebase account and navigate to Maverick Information  If the user provided a picture, store it in the newly created firebase user. | **Pass:** Firebase successfully stores the new account information. |
| TC2 - Maverick Information | From the Maverick Information page select a profession: (Student/Professor) and enter UTA ID, then press next | System will store additional information in the Firebase firestore no-SQL database.  Application navigates to Email verification | **Pass:** Firebase successfully retrieves the account information. |
| TC3 - Email verification | From email verification page press Send Email button | Users will receive an email verification request. Application will log the user in and display the Home Page. | **Pass:** Firebase successfully sends an email request |

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# 4. Test Cases: “Home Screen”

**Project Name:** Auto-Learn

**Test Case Name:** Home Screen

**Test Case Id**: CSE3310/Spring 2020/Team2/ Home\_Screen

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Menu | Click the “Menu” button in the top left of the home screen. | Navigation view with additional menu items, and profile information displayed opens from the left side of the screen. | **Pass** |
| TC2 - Model Statistics | Click the “Graph” button in the top right of the home screen. | Model Statistics popup will display with previous classifications. | **Pass** |
| TC4 - Select an image | Click the “Gallery” button in the bottom right of the home screen. | Pop up menu will display with options:   * Take photo * Choose from Gallery * Cancel | **Pass** |
| TC5 - View Results | With an image loaded into the ImageView by the user, click the View Results button | Machine learning model will be run on image and results will be displayed in Results Dialog | **Pass** |

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# 5. Test Cases: “Menu”

**Project Name:** Auto-Learn

**Test Case Name:** Menu

**Test Case Id**: CSE3310/Spring 2020/Team2/Menu

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Back Home | From menu press the right side of the screen or swipe menu away | Settings menu will disappear and Home page will be displayed | **Pass** |
| TC2 - Account Settings | From menu click the Account Settings button | Application navigates to the Account Settings page where user may:   * Change password * Change email * Delete account | **Pass** |
| TC3 - Profile Info displayed | From menu, navigation view header will display  information:   * Name * UTA ID * Profession * Profile Picture | Application extracts information from Google Firebase | **Pass** |
| TC4 - Change Profile Picture | Click the Profile Picture Bubble located in the navigation view header. | Pop up menu will display with options:   * Take photo * Choose from Gallery * Cancel   Upon completion firebase user profile picture will be updated | **Pass** |
| TC5 - Model Info | From settings menu press “Model Information” | Application displays an Information Dialog where data gathered by Google Firebase ML Kit will be displayed.  Along with links to data sets. | **Pass** |
| TC6 - Logout | From settings menu press “Logout” | User is logged out and application navigates to “Login Page” | **Pass** |

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# 6. Test Cases: “Account Settings”

**Project Name:** Auto-Learn

**Test Case Name:**  Account Settings

**Test Case Id**: CSE3310/Spring 2020/Team2/Account\_Settings

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Back Home | Click the back arrow in the top left of the “Profile” page. | The user will be navigated back to the home screen. | **Pass** |
| TC2 - Change Email | From Account settings menu click the “Change Email” button | Change email page will be displayed where user can enter the new email | **Pass** |
| TC3 - Change Password | From Account settings menu, click the “Change Password” button | Change password page will be displayed where the user enters a new password and confirms the new password. | **Pass** |
| TC4 - Delete Account | From Account settings menu click the “Delete Account” button | Pop up prompt will ask user to confirm password, before deleting the account | **Pass** |

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# 7. Test Cases: “Take Photo”

**Project Name:** Auto-Learn

**Test Case Name:** Take Photo

**Test Case Id**: CSE3310/Spring 2020/Team2/Take\_Photo

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|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Permission | First time users will be prompted to grant the application permission/access to the device’s native camera | Permissions pop up should appear with two options:  Allow / Deny | **Pass** |
| TC2 - Deny Permission | From permissions pop up user clicks “Deny” | Camera will not be accessed and notification will be displayed to inform user to go to App Settings to allow permission | **Pass** |
| TC3 - Allow Permission | From permissions pop up user clicks “Allow” | The device’s camera will be accessed | **Pass** |
| TC4 - Take Photo | From the Camera display press take a photo | Once the photo is taken the classification process will start automatically and results will be displayed in Results Dialog | **Pass** |
| TC6 - Back Home | From the Camera display press the back arrow | Application will navigate to “Home Page” | **Pass** |

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# 8. Test Cases: “Choose from Gallery”

**Project Name:** Auto-Learn

**Test Case Name:** Upload Photo

**Test Case Id**: CSE3310/Spring 2020/Team2/Upload\_Photo

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 - Permission | First time users will be prompted to grant the application permission/access to the device’s photo gallery | Permissions pop up should appear with two options:  Allow / Deny | **Pass** |
| TC2 - Deny Permission | From permissions pop up user clicks “Deny” | Photo gallery will not be accessed and notification will be displayed to inform user to go to App Settings to allow permission | **Pass** |
| TC3 - Allow Permission | From permissions pop up user clicks “Allow” | The device’s photo gallery will be accessed, with a greyed out submit button | **Pass** |
| TC4 - Select Image | Select one (1) image | After selecting an image, run the model and display Results Dialog | **Pass** |
| TC6 - Back Home | From the photo gallery press the back arrow | Application will navigate to “Home Page” | **Pass** |

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# 9. Test Cases: “Classification”

**Project Name:** Auto-Learn

**Test Case Name:** Classification

**Test Case Id**: CSE3310/Spring 2020/Team2/Classification

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No.** | **Test Case Description** | **Expected results** | **Outcome**  **Pass, Fail, Other (comments)** |
| TC1 -  SUV | The user takes/uploads a photo of an SUV (Sports Utility Vehicle).  [Ex: Toyota RAV4] | The classification will return a set of percentages with the largest percentage in the SUV category. | **Pass** |
| TC2 - Sedan | The user takes/uploads a photo of a Sedan.  [Ex: Toyota Camry] | The classification will return a set of percentages with the largest percentage in the Sedan category. | **Pass** |
| TC3 - Truck | The user takes/uploads a photo of a Pickup Truck.  [Ex: Chevrolet Silverado] | The classification will return a set of percentages with the largest percentage in the Truck category. | **Pass** |
| TC4 - Convertible | The user takes/uploads a photo of a Convertible  [Ex: Mercedes SL] | The classification will return a set of percentages with the largest percentage in the Convertible category. | **Pass** |
| TC5 - Coupe | The user takes/uploads a photo of a Coupe.  [Ex: Porsche 911] | The classification will return a set of percentages with the largest percentage in the Coupe category. | **Pass** |
| TC6 - Van | The user takes/uploads a photo of a Van.  [Ex: Honda Odyssey] | The classification will return a set of percentages with the largest percentage in the Van category. | **Pass** |
| TC7 - Other | The user takes/uploads a photo of a vehicle that doesn’t fall into any of these categories. | The classification will return a message with the category that it determines is a best fit for the uploaded photo. | **Pass** |