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# **Introduction**

This requirement document was created to define the use cases, functionality,  and requirements for our product FitTipz, to function. This document includes a description of the model of FitTipz’s many functions and how they work. A class and use case diagram details relationships between relevant objects and use cases. Alongside the use case diagram is a list of everyday use cases of FitTipz. A detailed description of these various use cases can be found there. Finally, system sequence charts can be found for each use case. Each chart includes a system sequence diagram created from the aforementioned class and use case diagrams.

# **Description Model**

FitTipz features an advanced search engine that can take specific parameters to find exactly what you want. It will filter by gender, size, brand, quality, and price, and if no items meet the specific description, it will find the next closest item. Once an item is found and selected, using VisualFitz, users can use their uploaded images to try on the garment virtually. Once satisfied with the product, they will be transferred to the proper store page to purchase it. This function requires the user to provide input depending on their preferences. Likewise, the output of this function will depend on what the user specified, though it will always show the closest match to whatever specifications were made. This process is completed by accessing our expansive database of supported sellers and stores. FitTipz can fulfill users' requests quickly and efficiently. As for security, FitTipz complies with industry standards.

Fitz Storage can catalog past purchases and store them in a virtual closet. This is a way to track what users have purchased, intended for use by admins and users alike. Users can organize a virtual closet and view their previously purchased items. User Data from Fitz Storage is also used in TipzTips to recommend items to repeat customers. Administrators can access users' purchasing history through Fitz Storage; this data can then be sold to advertisers. Fitz Storage requires input from the user when purchasing items. Once done, it can then output their previous purchases. This process is seamless and instantaneous; users won’t notice it happening since it is all done at the moment of sale. This all makes for a good performance that isn’t intrusive. Security is up to code. User data is not accessible by other users or anyone aside from them or an admin.

VisualFitz takes user photos and lets them put them in whatever outfit they desire. The program asks for three angles of their head and shoulders in clear visibility—one from the front, some from the side, and one from the back. Once uploaded successfully, users can access this feature whenever they wish to try on a piece of clothing. This function can also be accessed through the advanced search function once the user has selected an item they want to examine closely. VisualFitz does require the user to input images of themself to be able to access this function. The output they receive will be images of themself wearing whatever item they selected. Putting clothing onto a picture uses generative AI to do so. This may take some time to complete, depending on the complexity of the task, but the performance will be stable. Users can alter and remove these images anytime to comply with privacy regulations. In addition, FitTipz will require users to enter their age, so those under 13 will have this feature restricted.

The Budget Function asks the user for their budget range. If they are not sure of their exact budget, they can simply respond to the system with low, medium, or high, and they will receive a low range, such as $0 - $50, medium range $50 - $150, and high range $150 - $400, or no budget which would be a zero or greater range. In the application, a budget will be placed depending on whether the user decides to add that item to their cart, where all the item values will be added up to a total. The user can delete or add items to that cart. This function takes input from the user by declaring their budget. It will then output results based on their budget. This process is intertwined with the advanced search function, which works in tandem. The performance is not hindered as it is factored into a standard search. As for security, it follows all regulations and is up to code.

TipzTips is a feature that tracks customers' previous purchases to recommend new outfits. It tracks attributes such as brands they prefer, sizes they tend to buy, and the style of clothing they purchase. This provides valuable data and gives the user a more streamlined shopping experience. TipzTips will only improve the more users shop using FitTipz, as it gains more data and can more accurately predict what they wish to purchase. There is no direct input from the user; instead, it collects feedback from their purchases. This then results in TipzTips supplying users with recommendations based on their history. There is no direct process for users; this is all done behind the scenes. This function serves the purpose of recommending new items in the hope that they will purchase them. This function's security is standard. It tracks data, but it is inaccessible to anyone other than administrators.

# **Class Diagram**

A diagram with text and images

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# **Use Case Diagram**

# **A diagram of a diagram AI-generated content may be incorrect.Use Case Scenarios**

**1. Register (New user registration):**

Actor: New User

Goal: Create a FitTipz account; confirm they are 18 years or older.

Steps:

1. Install and open FitTipz.

2. Tap "Create an Account."

3. Enter: Name, email, password, date of birth, and agree to terms.

4. Afterthe system verifies age, if verified, it creates an account;

5. Email verification is sent.

6. User verifies account

7. System prompts user to log in.

Exceptions;

User is under 18 years; "You must be at least 18 years or older to register"

Email in use: "Please attempt to log in using the email provided at registration."

Weak password: 'Please try a different password; ensure it's "strong" '

**2. Sign In;**

Actor: User (returning or newly registered)

Goal: Log in to account

Steps following;

1. Tap "Log in."

2. Enter email and password.

3. System verifies credentials

4. If the valid user is signed in, they are taken to their home screen.

Exceptions;

Wrong password: "Password or email incorrect, please try again or reset using reset password link."

Unregistered email: prompt user to sign up

**3. Get reccomendations**

Actor: Logged in user

Goal: View style suggestions based on browse/purchase history

Steps following;

1. Sign in

2. System checks past activity and preferences.

3. System pulls similar items with 'tags' in common.

4. The user can view or save items for purchase.

Exceptions;

No purchase history - Show items usually purchased by age group.

No saved items - Show items on sale, enticing more saved items.

**4. View wardrobe (purchased or saved items)**

Actor: Logged-In User

Goal: See purchased or saved clothing items

Steps following;

1. Tap "Wardrobe" in the menu

2. View purchased and saved items organized by category.

3. Tap to view details, favorite items, and more like this.

Exceptions;

If the wardrobe page is empty, "Start shopping to fill your wardrobe." "This page will display saved items as well"

**5. AI outfit generator**

Actor: Logged-in user

Goal: Let the AI build outfit combinations for use

Steps following;

1. Tap "Fitz AI"

2. Choose a starting item, wardrobe mix, or category with items already inside.

3. The AI system pulls from stored information and generates items based on likes, saved items, purchased items, and browsing history.

4. The user can view, save, and reshuffle the outfit combinations.

Exceptions;

If the wardrobe page is empty, "Start shopping to fill your wardrobe." "This page will display saved items as well"

There were not enough items selected: "We cannot generate an outfit for you; the items to use as references are not enough. "

**6. Find a similar item**

Actor: Logged-In User

Goal: Find alternatives to items, saved, bought, or currently viewing.

Steps following;

1. Open Wardrobe

2. Select any item.

3. Tap "Find similar"

4. System shows items visually similar, as well as with any 'tags' in commons

Tags: (fabric, color, feel, style, color scheme, garnment type)

Exceptions;

No matches: "This Item is unique, are you from the future?" suggest popular items instead

**7. Visual fitz; try it on**

Actor: Logged in user

Goal: Preview clothes on a 3D model

Steps following;

1. Open VisualFitz

2. Choose between the default 3D model or upload photos.

3. the system generates a custom avatar using the picture as a reference if uploading.

4. Select a clothing item from the wardrobe

5. The system renders the item on the user model

Exceptions;

Bad photo quality; please try uploading a different photo

The photo submitted is inappropriate; Please try uploading a different photo. Ensure that you follow our terms and conditions."

**8. Delete account**

Actor: Logged-In User

Goal: Permanently remove the account and its data.

Steps following;

1. Open Setting.

2. Tap "Account" then "Delete Account".

3. The system displays warning prompt

4. User confirms with password and code to email

5. System deletes all identifiable data from user records, deletes the account and any email data attached to the user.

Exceptions:

Wrong password: 'incorrect password, please try again' send confirmation email to user to ensure account is not hijacked

**9. Save & share fitz**

Actor: Logged in user

Goal: save outfit ideas and share with others

Steps following;

1. Create or view an outfit

2. Tap "save outfit."

3. Tap "share" and choose an app; the system will send a link to the website and the user's outfit. The user can also download the image of their 3D model; it sends that instead.

3. The system sends a link or an image/

Exceptions;

Not signed in; user is prompted to sign in

Sharing permission is disabled; prompt the user to accept the sharing terms to allow access

**10. Redirect user to purchase at the company site**

Actor: Logged in user

Goal: Visit a third-party retailer's website for the user to buy the item.

Steps:

1. The user browses until they find an item they wish to buy.

2 Inside the item page, the user taps the item for more details

3. The item detail page includes a "buy now" button

4. User taps the button and is redirected.

5. The system opens the retailer's website in the phone's default browser.

6. The user may continue their shopping on an external website

Exceptions;

wrong link to retailer; "item is no longer available, try again later.

**11. Reset Password**

Actor: Returning User

Goal: Regain access to the FitTipz account

Steps:

1. User opens the "Log in " page

2. On the screen, the user selects "forgot password."

3. The system then prompts users to enter their registered email address.

4. User enters email and taps the "send reset password link" button.

5. The system sends a password reset link to the email

6. User opens email and is redirected to the FitTipz website, where they can change their password

7. User enters a new password.

8. User confirms password.

9 System updates the password and confirms

10. If a confirmed user sends an email to user's email advising of a password change.

11. User is prompted to log in.

Exceptions:

Email not found; ' we could not find an account with this information."

Weak password: "password must include at least 8 characters and a symbol"

# **System Sequence Charts**

A screenshot of a diagram

AI-generated content may be incorrect.

A screenshot of a graph

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