Sequence diagrams of some use cases:
- *Captures how a group of objects interact or collaborate to achieve a use case scenario.*

1. **Use case: Login/ Sign Up of account**

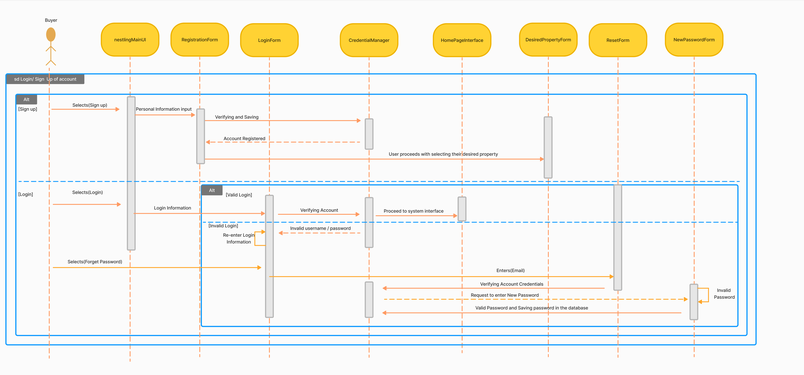
Flow of Events:
1. User arrives on the **nestingMainUI** with login / sign up option.
2. User key in personal information such as username, email, phone Number (optional) and password at **RegistrationForm (interface)**
3. The **InputValidator** verifies that the password and username follows the requirements.
4. The **CredentialManager** handles account info and saves the information into the database subsequently confirms the account
5. The **DesiredPropertyForm** displays the Main Form and the use case ends

Alternative Flow: If user has an account.
1. User arrives on the **nestingMainUI** with login / sign up option.
2. User types his/her username and password on the **LoginForm.**
3. The **CredentialManager** validates the actor's password and logs user in.
4. The **HomePageInterface** displays the Main Form and the use case ends.

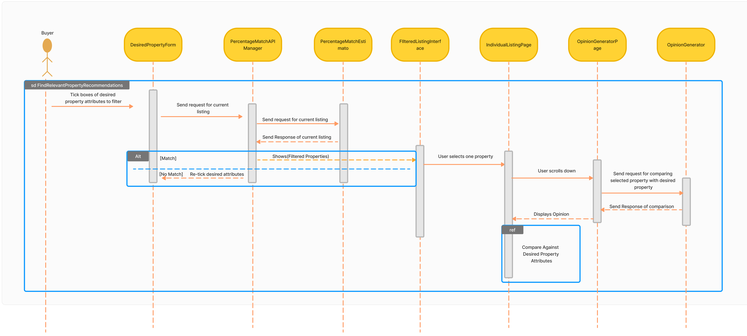
Alternative Flows: If invalid credentials
1. The system returns back to **LoginForm** for User to re-enter login Credentials
2. Alternative flow: If user selects forget password
   1. User arrives on **ResetForm** to key in email as retaining credential
   2. The **CredentialManager** verifies and search the information in the database.
   3. User keys in the **NewPasswordForm** with new password.
   4. The **CredentialManager** verifies and saves new password into the database.

Nicole

1.Use case: Login/ Sign Up of account



4. Use Case: Find Relevant Property Recommendations



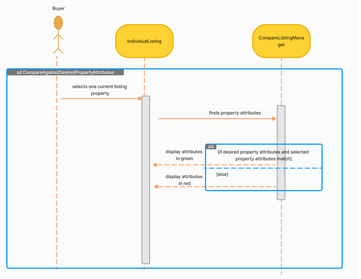
4. Use Case: Find Relevant Property Recommendations

Flow of events:
- 1. User enters desired property attributes in **DesiredPropertyForm**.
- 2.The **PercentageMatchAPIManager** initiates a call to the PropertyGuru API to fetch past transaction data.
- 3. The **PercentageMatchEstimator (control class)** finds current listings that matches more than 60% of the location(s), number of rooms, amenities and property area selected
- The system shows filtered properties on **FilteredListingInterface** with percentage match shown.
- User selects one of the property which brings them to **IndividualListingPage**.
- User can scroll down to compare selected property with desired property and also assisted with an AI chatbot on **OpinionGeneratorPage** managed by **OpinionGenerator**

Alternative Flow: If the current listings do not fulfill any of the selected attributes.
- 1. System displays "No results please re-select attributes" and User choose new attributes on **DesiredPropertyForm..**

Nicole

7. Use case: Compare Against Desired Property Attributes



3. **Use case: Homepage**

Flow of events:
- User arrives on **HomePageInterface** with tab Home, Desired Property, Current Listing and Favourites.
- User can also view what's chipping panel/ about on **ArticlePiecePage** that is managed by **ArticlePieceManager**
- User clicks on "Desired Property Listing" **DesiredPropertyButton** to proceed to **DesiredPropertyForm.**
- User clicks on "Current Listing" **CurrentListingButton** to proceed to **FilteredListingInterface**
- User clicks on "Favourites" **FavouritesButton** and proceed to **FavouritesPage.**

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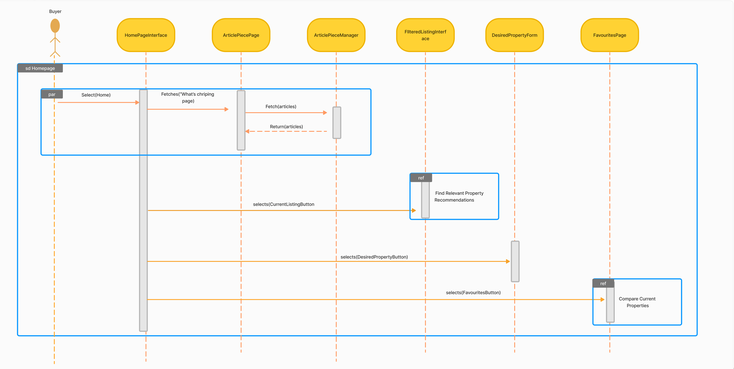
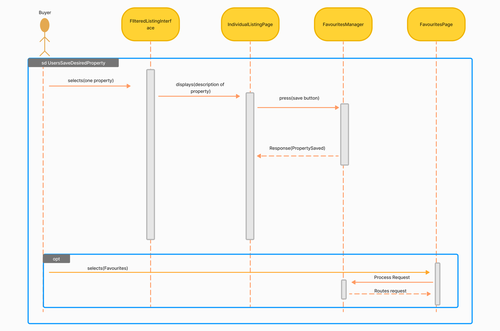
3.Use case: Homepage



5. Use Case: Users save current property



5. Use case: Users save current property

Flow of Events
- User selects ONE property from **FilteredListingInterface** which brings them to **IndividualListingPage** which shows the description of the property.
- User press the "save button" **FavouritesButton** and property will be saved by **FavouritesManager** to **FavouritesPage**
- User can click on back button to return to **FilteredListingInterface**

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2. **Use case: Estimate Desired Property Prices**

Flow of events:
- 1. User selects desired property attributes in **DesiredPropertyForm**.
- 2. **DesiredPropertyAPIManager** initiates a call to the URA API to fetch past transaction data.
- 3. **DesiredPropertyPriceEstimator** will estimate the price of the desired property using the past transaction data.
- The estimated price is shown beside the filters on the **DesiredPropertyForm**
- User clicks on "Explore button" **ExploreButton** and proceed to **HomePageInterface**

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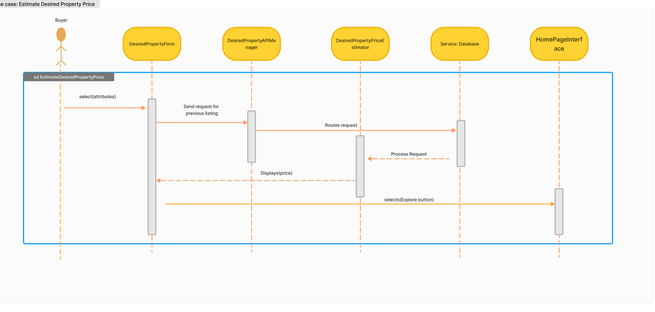
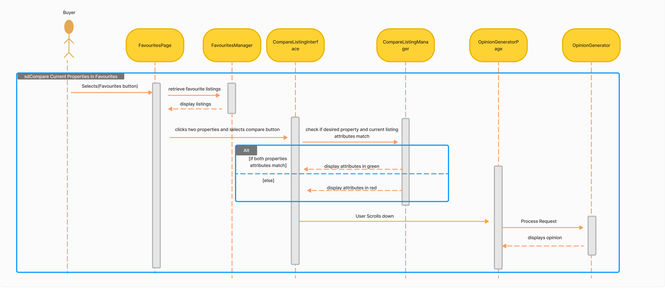
2.Use case: Estimate Desired Property Price



6. Use case: Compare Current Properties in Favourites



6. Use case: Compare Current Properties in Favourites

Flow of events:
- User arrives on the **FavouritesPage**
- User selects 2 listed properties and clicks Compare button
- The **FavouritesPage** will call the **FavouritesManager** to display the selected property on the right and the desired property on the left of the webpage.
- User clicks on **CompareButton** to proceed to compare 2 different saved properties.
- The **CompareListingInterface** will display attributes highlighted in red, that does not match the desired property attributes.
- The **CompareListingInterface** will also assisted with an AI chatbot on **OpinionGeneratorPage** managed by **OpinionGenerator** to generate opinion on whether the current property is compatible for the User.

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