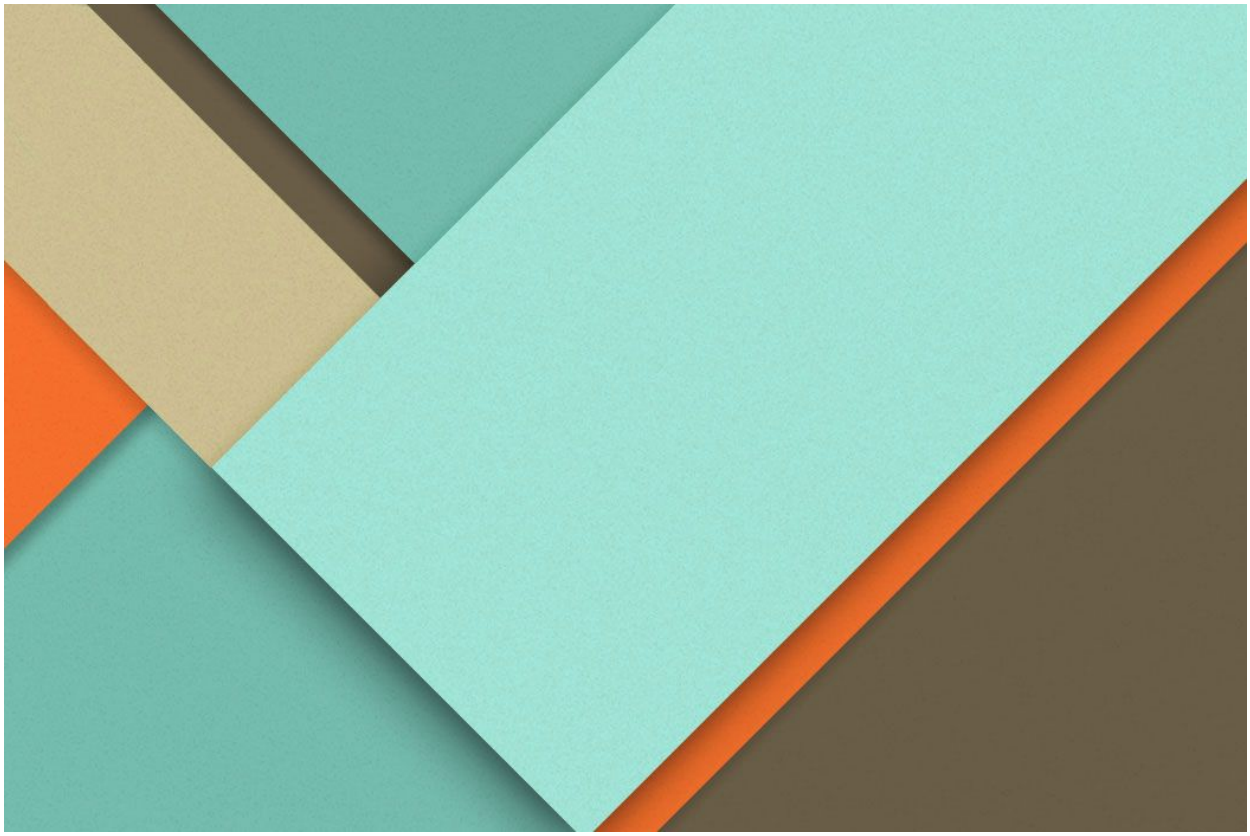
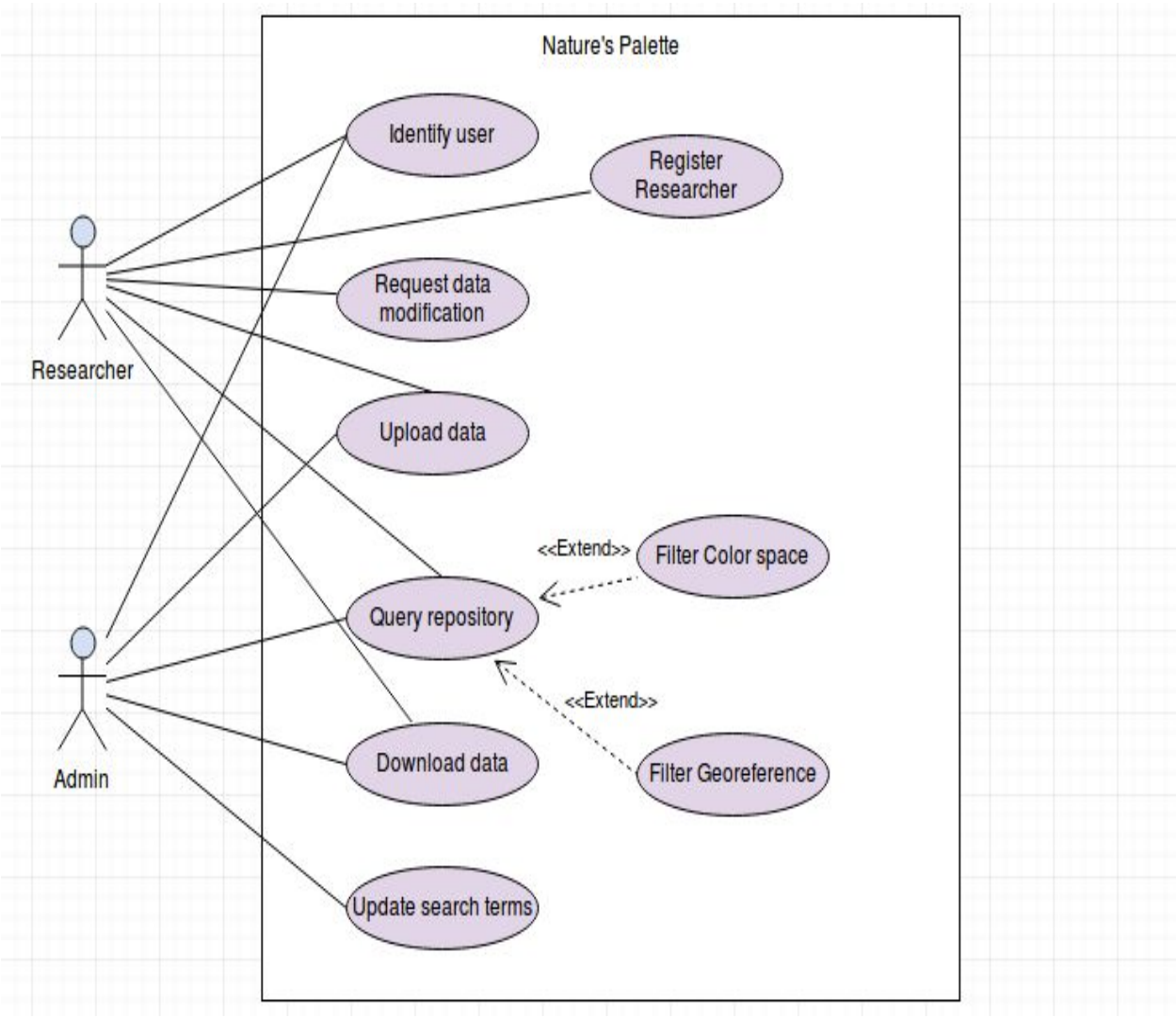


Nature's Palette

04.11.2019

Use Case Diagram and Use Case Details

Use Case Diagram:



Use Cases:

1. Identify User (UC-1)

- Researcher enters identification information
- The System validates the information
- The System authorizes the researcher
- Alternative flow:
    - Researcher forgets password
    - Researcher request for new password
    - System resets new passwords for the researcher.

2. Register Researcher (UC-2)

Name:	Register Researcher
Participating actor:	Researcher
Entry condition:	Researcher is not a member of the online repository.
Flow of events:	1. Researcher selects ‘Register’. 2. System displays the registration screen. 3. Researcher enters their identification details. 4. System validates entered information. (See registration validation rule RVR-1) 5. Systems stores the details and creates a new account. 6. System notifies Researcher about successful registration.
Exit condition:	Researcher is registered.
Alternative flows:	● 4a. System finds errors because of invalid information. ○ System informs Researcher about errors ○ Researcher acknowledges the error message. ○ System reverts to step 3.

Alternative sign in or registration using ORCID: Enabling researcher to register or sign into the system using their ORCID credentials. This can save their time and effort also they don’t have to keep track of multiple usernames and passwords.

3. Upload Data (UC-3)

Name:	Upload Data
Participating actor:	Researcher
Entry condition:	Researcher must be identified.
Flow of events:	1. Researcher requests to upload data. 2. System presents submission instructions and conditions with metadata file templates for researcher. (See frontend example document, section 2.1.1) 3. Researcher familiarizes themselves with the instructions and accepts the conditions. 4. The System prompts for information about the submission. 5. Researcher fills the basic information (mostly Dublin core) related to the submission. (See front-end example document, section 2.1.2) 6. System validates entered information. (See validation rule UVR-1) 7. System requests Researcher to select files to be submitted 8. Researcher provides metadata file (template is provided) and raw files (archive format) and submits the data. (See front-end example document, section 2.1.3) 9. System validates files. (See validation rule UVR-2) 10. System uploads the data to the repository (without releasing them) 11. System notifies Researcher about successful submission. 12. System computes metrics for uploaded raw files (See validation rule UVR-3). 13. System stores the calculated metrics in the repository and releases the data.
Exit condition:	● Files are released to the research community for search and download.
Alternative flows:	● 6a. System finds errors during validation: ○ System informs Researcher about specific errors ○ Researcher acknowledges the error message. ○ System reverts to step 4. ● 9a. System finds errors during metadata validation. ○ System informs Researcher about specific errors ○ Researcher acknowledges the error message. ○ System reverts to step 7. ● 12a. System finds errors during metric calculations:

	○ System informs Researcher about specific errors ○ Files without errors: System continues to 13 ○ Files with errors are not released ■ System informs Researcher that 'Request data modification' needs to be performed

4. Query Repository (UC-4)

Name:	Query Repository
Participating actor:	Researcher
Entry condition:	Researcher requested to query the Repository
Flow of events:	1. System presents an advanced search interface. 2. Researcher enters search terms (Darwin Core) for the query and submits the request. 3. System performs the search. (See query rule QR-1) 4. System retrieves and returns the metadata that matches the query. 5. Researcher selects advanced search criteria (see UC-6 and UC-7) to further refine the results. 6. System provides the refined metadata for the raw files that match the filters.
Exit condition:	Metadata of raw files that match Researcher's query are displayed.
Alternative flows:	● 4a. Search results not found based on search terms ○ System displays a message to the Researcher that no matching results were found. ○ Researcher acknowledges the message. ○ System returns to step 1. ● 7a. Search results not found based on advanced criteria ○ System displays a message to the Researcher that no matching results were found. ○ Researcher acknowledges the message. ○ System returns to step 5.

5. Download Data (UC-5)

Name:	Download data.
Participating actor:	Researcher
Entry condition:	Researcher performed a successful search query and related metadata for the files is displayed.
Flow of events:	1. Researcher initiates download. 2. System retrieves the relevant raw files. 3. System generates metadata file containing all the metadata values for each raw file. 4. System collects all the files into a single package. 5. System initiates the download process and provides the single package file to the Researcher.
Exit condition:	Package file is downloaded.
Alternative flows:	● 5a. Download interrupted ○ System informs Researcher that download was unsuccessful. ○ System offers to retry the download ○ Researcher confirms the retry. ○ System returns to step 5.

6. Filter GeoReference (UC-6)

- After researcher performs filter search, researcher selects “Refine by Location”
- System prompts map for georeference filtering.
- System allows researchers to draw a polygon.
- The researcher draws polygon shaped region on the map.
- The system validates the coordinates and refines the previous filtered result.
- System displays refined results that are found only within the selected region.

7. Filter ColourSpace (UC-7)

- The researcher performed a filter search.
- The researcher selects “Refine by Colour Space”.
- The system prompts colour space template.
- Researcher selects regions within the color-spaces.
- The system validates input.
- System presents refined result.

8. Update Search Terms (UC-8)

Name:	Update Search Terms
Participating actor:	Admin
Entry condition:	.
Flow of events:	1. Admin initiates update search terms. 2. System presents all the search terms. 3. Admin selects/ unselects the terms to enable or disable for filter search. 4. System validates search terms. (See search terms update rule UR-1) 5. Admin submit modified search terms to the system. 6. System updates the repository. 7. System provides confirmation message.
Exit condition:	Search terms are updated for filter search
Alternative flows:	● 4a. System finds errors and notifies Admin. ○ System informs Admin that update was unsuccessful. ○ System offers to retry the update ○ Admin confirms the retry. ○ System returns to step 3.

9. Request Data Modification (UC-9)

Name:	Request Data Modification.
Participating actor:	Researcher
Entry condition:	Researcher already has the submission in the repository for which researcher wants to request data modification.
Flow of events:	1. Researcher request for data modification. 2. System presents previous submission list of that Researcher. 3. Researcher goes through the list and selects specific submission that he wants to modify. 4. System asks for the package that has the modified files. 5. Researcher provides the package which includes a. New metadata file. That contains the metadata for the new raw files. b. New raw files related to the metadata file, c. Also an information file that contains old raw files name linked to new raw files name. 6. Researcher uploads the package 7. System validates the package. (See data modification rule DMR-1) 8. System retrieves the old raw files that Researcher requested to modify. 9. System replaces the old raw files with new raw files and replaces old metadata information with new metadata information related to the new raw files. 10. System notifies Researcher about successful modification. 11. System computes metrics for uploaded raw files. 12. System stores the calculated metrics in the repository and releases the data.
Exit condition:	Requested data is modified and released to the research community for search and download.
Alternative flows:	● 7a. System finds error during package validation. ○ System notifies the Researcher about errors. ○ Researcher acknowledges the error message. ○ System reverts to step 4. ● 11a. System finds corrupted files ○ System notifies Researcher about file corruption