User Guide

Feature Manager

Web UI for managing Quantitative Image Biomarkers

Introduction

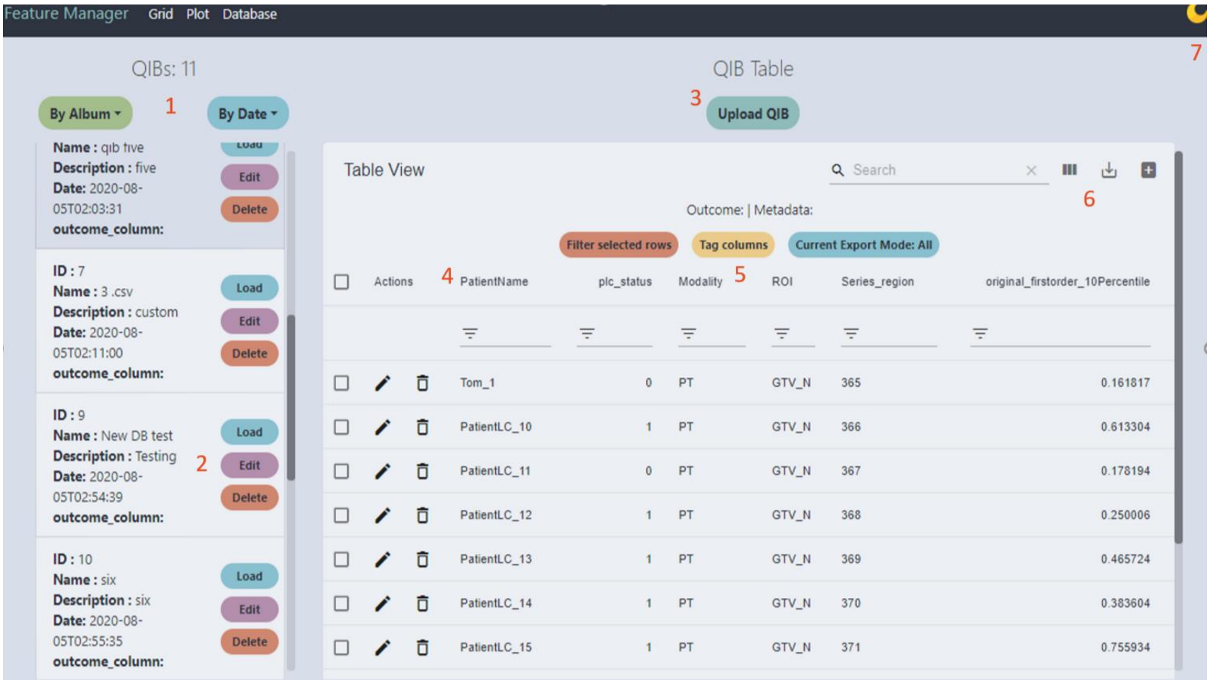
This is the user guide for feature-manager, a React web application to manage quantitative image biomarker (QIB) collections. This application is designed to consume a Flask-based REST API, whom code can be found in the following link:

https://github.com/genttunn/python-rest-api

The application has 3 main functions, which corresponds to 3 application pages:

1. Loading, viewing, and managing QIB collections: Grid page.
2. Visualizing QIB data into bivariate plot: Plot page.
3. Managing QIB metadata: Database page.

Grid: Load and View and QIBs



Name : qib five
Description : five
Date: 2020-08-05T02:03:31
outcome_column:

ID : 7
Name : 3 .csv
Description : custom
Date: 2020-08-05T02:11:00
outcome_column:

ID : 9
Name : New DB test
Description : Testing
Date: 2020-08-05T02:54:39
outcome_column:

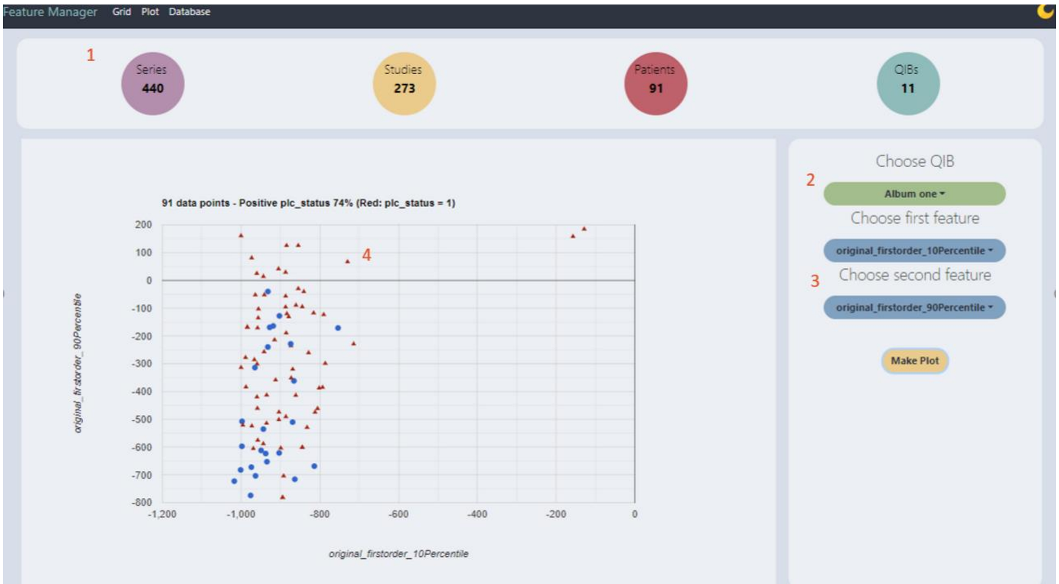
ID : 10
Name : six
Description : six
Date: 2020-08-05T02:55:35
outcome_column:

Outcome: | Metadata:

□	Actions	PatientName	plc_status	Modality	ROI	Series_region	original_firstorder_10Percentile
□	✎ 🗑	Tom_1	0	PT	GTV_N	365	0.161817
□	✎ 🗑	PatientLC_10	1	PT	GTV_N	366	0.613304
□	✎ 🗑	PatientLC_11	0	PT	GTV_N	367	0.178194
□	✎ 🗑	PatientLC_12	1	PT	GTV_N	368	0.250006
□	✎ 🗑	PatientLC_13	1	PT	GTV_N	369	0.465724
□	✎ 🗑	PatientLC_14	1	PT	GTV_N	370	0.383604
□	✎ 🗑	PatientLC_15	1	PT	GTV_N	371	0.755934

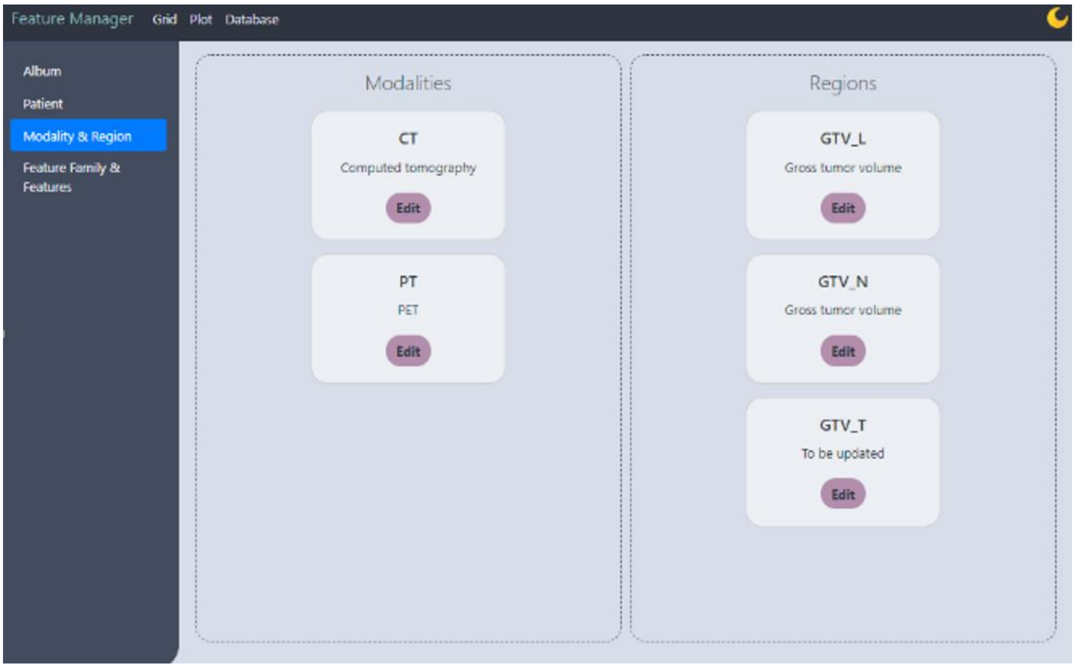
1. Left scrollable column shows a list of QIBs in database. To sort them, click on By Album or By Date.
2. Click on Load to load the QIB to the table on the right (loaded QIB is bolded), Edit to change its metadata information, and Delete to remove it.
3. Click Upload QIB to upload a new CSV file. CSV files, depending on CSV type, will be checked for valid column names (see end of guide).
4. Hover mouse over a column’s name too reveal a sorting arrow. Typing in Search and in each column Filter field will also allow for searching by name.
5. Click on tag columns to tag outcome columns and metadata columns, which will turn red and blue, respectively.
6. Exporting QIBs to CSV: click the checkboxes next to rows and Filter selected rows to select rows, click ▥ to choose columns, and ⤓ to export.
7. Click on the moon symbol to switch between Light and Dark theme. The theme will persist in other tabs and next sessions.

Plot: Visualize QIBs



1. Upper row shows general statistics of the database.
2. To make a plot, first choose the QIB.
3. Then select two features and click Make Plot.
4. Hover mouse over data point to see coordinate values.

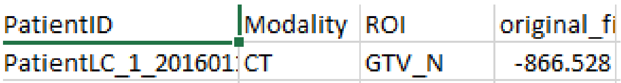
Database: Edit metadata entities



Click on each tab in the left column to manage Albums, Patient, Modality & Region of Interest, and Feature Families & Features.

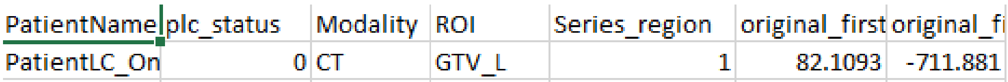
Appendix

Valid CSV by Type:



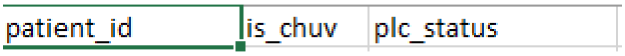
PatientID	Modality	ROI	original_fi
PatientLC_1_201601:	CT	GTV_N	-866.528

Valid new QIB file



PatientName	plc_status	Modality	ROI	Series_region	original_first	original_fi
PatientLC_On	0	CT	GTV_L	1	82.1093	-711.881

Valid custom QIB file



patient_id	is_chuv	plc_status

Valid outcome list file

Examples valid CSV files can be found in the backend application python-rest-api, in /csv.