Platform for Accelerating Collaborative Computational Cancer Research (PAC3R) Use Cases

The Bankhead-Coley Cancer Research Network Infrastructure
(FL CARES)

Version 0.0.1
October 17, 2023

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Purpose

The purpose of this document is to identify, understand, communicate and document the use cases required for the Platform for Accelerating Collaborative Computational Cancer Research (PAC3R).

Actors (personae)

Research Analyst

A person who analyzes data, performs experiments, trends to interpret results for scientific research.

Developer

A person who builds pipelines, algorithms for data processing and scientific visualization and interpretation.

Use Case Diagram

Access the Data Portal

Keyword Search

Filtering and Sorting

Data Exploration

Data Download

Citation and Documentation

Researcher
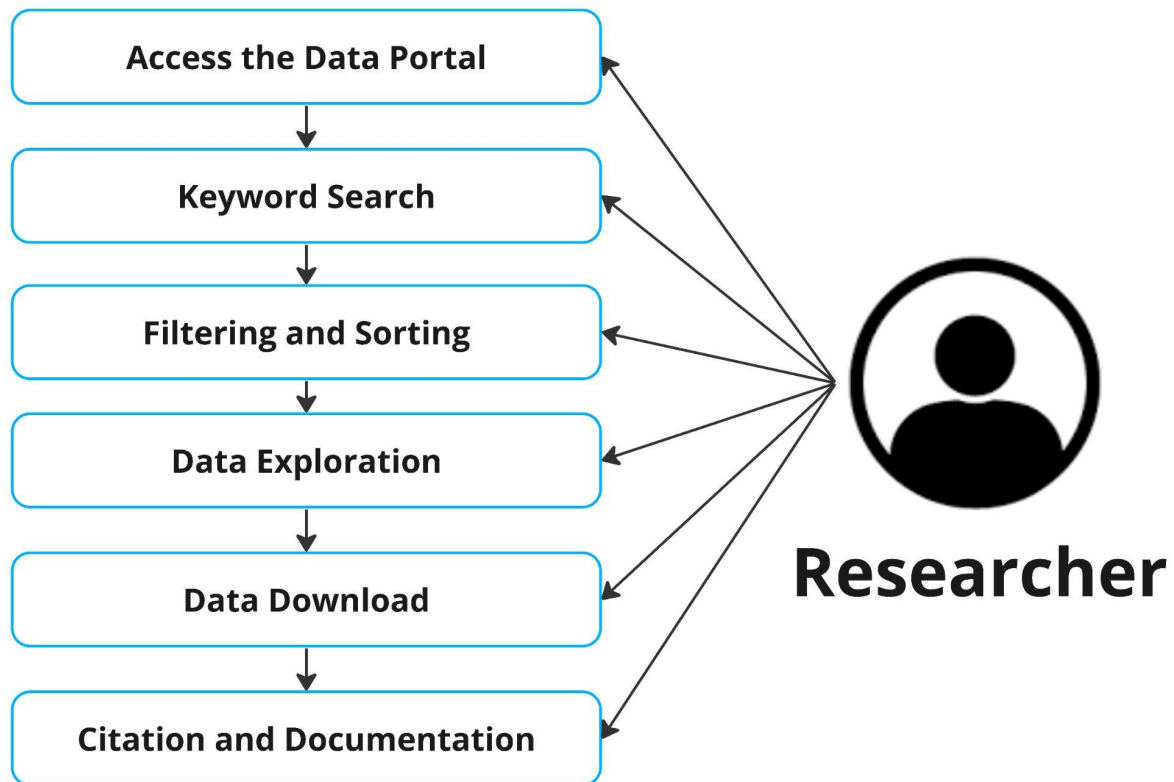
Use Case Specification

Integrate RNA-seq WDL Pipeline Use Case

Submitter: Brooke Fridley, PhD

Use Case	Integrate RNA-seq WDL Pipeline
Actor	Developer

Overview	Moffitt Cancer Center will be contributing an RNA-seq pipeline (developed in WDL).
Basic flow (precondition /postcondition)	- Login to PAC3R - Click submit Pipeline - Select pipeline type - Precondition: integration type - Add pipeline information (submitter, organization, …) - Click OK
Alternative flow (precondition /postcondition)	
Business rules	Do we need a QA/QC WDL step?

Process data using RNA-seq WDL Pipeline Use Case

Submitter: Brooke Fridley, PhD

Use Case	Process data using RNA-seq WDL Pipeline
Actor	Research analyst
Overview	Researchers want to process their RNA-seq data files (i.e., fastq files).
Basic flow (precondition /postcondition)	- Login to PAC3R - Click Submit Data - Click Process Data - Opens pipeline type - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	- Login to PAC3R - Find dataset - Click Process Data - Opens pipeline type - Precondition: data format - Click OK - Postcondition: data format
Business rules	

Moffitt Cancer Center R Shiny app (MCC-R) Use Case

Submitter: Brooke Fridley, PhD

Use Case	Moffitt Cancer Center R Shiny app (MCC-R)
Actor	Research analyst
Overview	Moffitt Cancer Center R Shiny application for the downstream analysis and visualization of the processed RNA-seq data. No genomic or clinical data.
Basic flow (precondition /postcondition)	- Login to PAC3R - Click MCC-R - Click Select Data - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	

Download PAC3R dataset Use Case

Submitter: Vas, Marcin, Michael, Adam and Kathleen

Use Case	Download PAC3R dataset
Actor	Research Analyst
Overview	User wants to download to the local hard drive a dataset from FL CARES dataset list.
Basic flow (precondition /postcondition)	- Login to PAC3R - Browse dataset table - Click Select Data - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	

Herbert Wertheim UF Scripps Institute for BioMedical Innovation & Technology dataset submission Use Case

Submitter: Gogce C. Crynen

Use Case	Herbert Wertheim UF Scripps Institute for BioMedical Innovation & Technology dataset submission
Actor	Research Analyst
Overview	The team at The Wertheim UF Scripps Institute will provide datasets publicly available or produced within the team.
Basic flow (precondition /postcondition)	● Pre-PAC3R condition: dataset upload
Alternative flow (precondition /postcondition)	
Business rules	

Herbert Wertheim UF Scripps Institute for BioMedical Innovation & Technology dataset harmonization Use Case

Submitter: Gogce C. Crynen

Use Case	Herbert Wertheim UF Scripps Institute for BioMedical Innovation & Technology dataset harmonization
Actor	Research Analyst
Overview	The team at The Wertheim UF Scripps Institute will evaluate the harmonization of datasets publicly available or produced within the team.
Basic flow (precondition /postcondition)	● Login to PAC3R ● Browse dataset table ● Click Select Data 　○ Precondition: data format ● Click OK 　○ Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	

Gene Expression Profiles (GEPs) of cancer cells dataset submission Use Case

Submitter: Appu Rathinavelu, PhD

Use Case	Gene Expression Profiles (GEPs) of cancer cells dataset submission
Actor	Research Analyst
Overview	The research team at the Rumbaugh Goodwin Institute for Cancer Research (RFICR) of NSU will provide datasets with Gene Expression Profiles (GEPs) of cancer cells with and without drug treatment.
Basic flow (precondition /postcondition)	● Pre-PAC3R condition: dataset upload
Alternative flow (precondition /postcondition)	
Business rules	

Explore Gene Expression Profiles (GEPs) of cancer cells Use Case

Submitter: Appu Rathinavelu, PhD

Use Case	Gene Expression Profiles (GEPs) of cancer cells dataset submission
Actor	Research Analyst
Overview	The research team at the Rumbaugh Goodwin Institute for Cancer Research (RFICR) of NSU will evaluate the datasets with Gene Expression Profiles (GEPs) of cancer cells with and without drug treatment.

Basic flow (precondition /postcondition)	● Login to PAC3R
	● Browse dataset table
	● Click Select Data
	   ○ Precondition: data format
	● Click OK
	   ○ Postcondition: data format

Alternative flow (precondition /postcondition)	
Business rules	● No clinical data

Explore PAC3R datasets Use Case

Submitter: Vas, Marcin, Michael, Adam and Kathleen

Use Case	Explore PAC3R datasets
Actor	Research Analyst
Overview	User wants to explore the PAC3R datasets from FL CARES.
Basic flow (precondition /postcondition)	- Login to PAC3R - Browse dataset table - Click Select Data - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	

Browse PAC3R datasets Use Case

Submitter: Vas, Marcin, Michael, Adam and Kathleen

Use Case	Browse PAC3R dataset
Actor	Research Analyst
Overview	User wants to browse the PAC3R datasets from FL CARES.
Basic flow (precondition /postcondition)	- Login to PAC3R - Browse dataset table - Click Select Data - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	

Browse SCAN360 data Use Case

Submitter: Stephan Schuerer

Use Case	Browse PAC3R dataset
Actor	Research Analyst
Overview	User wants to browse the PAC3R datasets from FL CARES.
Basic flow (precondition /postcondition)	- Login to PAC3R - Browse dataset table - Click Select Data - Precondition: data format - Click OK - Postcondition: data format
Alternative flow (precondition /postcondition)	
Business rules	