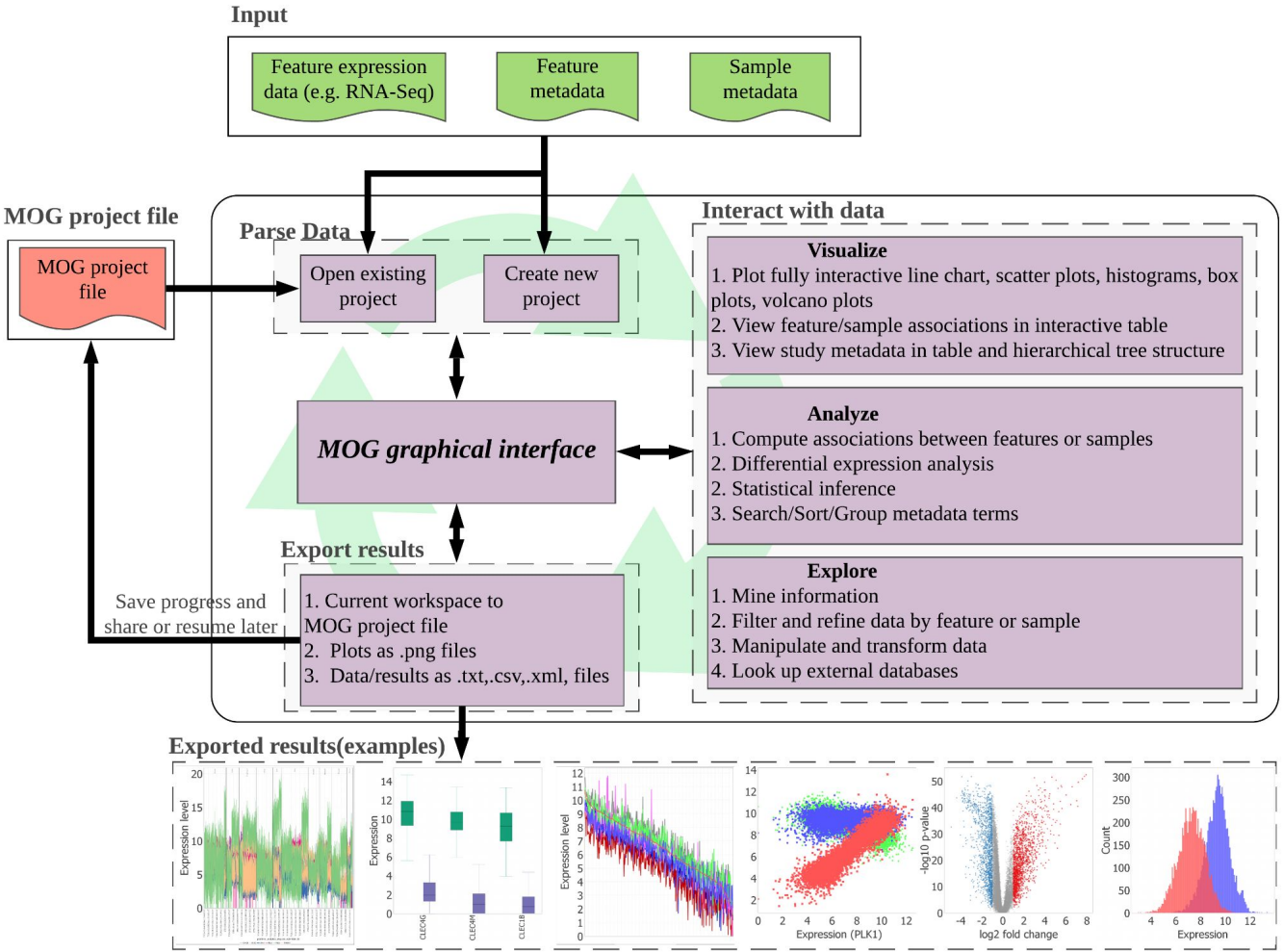
MetaOmGraph

Fahmi Rafie
Kamsi Ibeziako
Adam Orgler
Austin Sickels
John Chandara

What is MOG

- Tool for visualizing, analyzing, and exploring Large Datasets
- Uses data indexing and buffering schemes to efficiently handle big, complex datasets
- Used by computational biologists, cell biologists, genome biologists, and physicians/clinicians
- Written in Java


Input
Feature expression data (e.g. RNA-Seq)
Feature metadata
Sample metadata
MOG project file
MOG project file
Parse Data
Open existing project
Create new project
MOG graphical interface
Interact with data
Visualize
1. Plot fully interactive line chart, scatter plots, histograms, box plots, volcano plots
2. View feature/sample associations in interactive table
3. View study metadata in table and hierarchical tree structure
Analyze
1. Compute associations between features or samples
2. Differential expression analysis
2. Statistical inference
3. Search/Sort/Group metadata terms
Explore
1. Mine information
2. Filter and refine data by feature or sample
3. Manipulate and transform data
4. Look up external databases
Export results
1. Current workspace to MOG project file
2. Plots as .png files
3. Data/results as .txt,.csv,.xml, files
Save progress and share or resume later
Exported results(examples)
Expression level
Expression
Expression level
Expression (PLK1)
-log10 p-value
log2 fold change
Count
Expression

Identity

we are a migration project; a lot of rewriting and little new ‘stuff’.

UX RESEARCH

1. User stores
2. Figma
3. Data Visuals

BACKEND MGNT

1. Mockito
2. Java to ???
3. O/M Architecture

QUALITY ASSURANCE

1. Represent CL intentions
2. Less fuzzy deliverables
3. Focus on form, than mattar

UX Top/Down Methodologies

We are form-first

Current Plans

Functional requirements:

- Supporting New Java Version
- Adding features to improve MOG usability - new chart types, data analysis
- Migrate to web version (need to confirm again)

Non-functional requirements:

- Scalability (able to handle large datasets)
- Maintainability (old dependency issues)

Questions & Concerns

- Web Version of MOG - is this no longer an option
- What versions of Java should we provide support for
- Timeline for the project
- Scope of the project
- Unfamiliarity in subject area (biology)

Thank You!

MetaOmGraph - https://github.com/urmi-21/MetaOmGraph