

kinase accession number
phosphosite / substrate
inhibitor
dataset

web layout +
kinase template /
phosphosite template /
inhibitor template /
dataset view/analyses

Web Application / User Interface

- Receive user input
 - Pass request onto service layer
 - Display output received from service layer
 - Display user-friendly error messages
1. Basic interface (search box, file input box)
 2. html templates

Tools: python flask / bokeh, html, CSS, javascript

Service Layer / Controller

- Receives input from UI
 - Uses adequate function in data access layer
 - Receives objects from data access layer
 - Processes info into required output
 - Passes data to UI
1. Check / process input functions
 2. Functions interacting with data access
 3. Functions producing figs, plots, reports

Tools: python pandas / matplotlib(seaborn) / bokeh / dendropy?

Data Access

- Classes representing tables
 - Ensures DB integrity
 - Receives requests from service layer
 - Accesses DB to obtain requested objects
 - Returns required info through methods
1. Make tables
 2. Control data import
 3. Class methods

Tools: python SQLAlchemy

Tables:

- Kinases
- Phosphosites
- Inhibitors
- Kinase / Phosphosites join
- Kinases / Inhibitors join

DB

3rd party API(s) /
Export files

1. Select DBs
2. Select fields / info to use
3. Scripts to obtain and de-duplicate data

Tools: python pandas / SQLAlchemy