

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) / 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

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

Tables:

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

Tools: SQLAlchemy (from service / import layers)