BIN208 WEBTECHNOLOGIES FOR BIOINFORMATICS

19/9/2021

Exercise 2: Building web applications using PHP and MySQL

Aim : To build Bioinformatics web applications using PHP and Mysql Database

Learning Outcomes:

- In this lab you will practice PHP scripting on the Webserver.
- The student will be able to code a web application using PHP and Mysql
- The student will be able to validate the PHP code on WAMP server for execution

Task 1:Write a PHP script to input the sequence file and display the output as shown below:

Input: Textarea and submit button (using HTML)

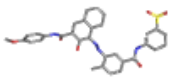
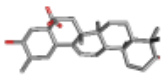
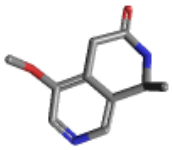
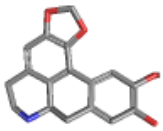
Algorithm steps:

i. **Design a HTML code to get the input sequence using HTML forms**
ii. **Develop a PHP script takes the input sequence using GET or POST methods**
iii. **Write a loop to iterate the find the following properties based on the table given below**
iv. **Implement the login to count the number residues according to the properties given in the table.**

Tiny	(A+C+G+S+T)	120
Small	(A+C+D+G+N+P+S+T+V)	197
Aliphatic	(A+I+L+V)	137
Aromatic	(F+H+W+Y)	21
Non-polar	(A+C+F+G+I+L+M+P+V+W+Y)	200
Polar	(D+E+H+K+N+Q+R+S+T+Z)	160
Charged	(B+D+E+H+K+R+Z)	69
Basic	(H+K+R)	37
Acidic	(B+D+E+Z)	32

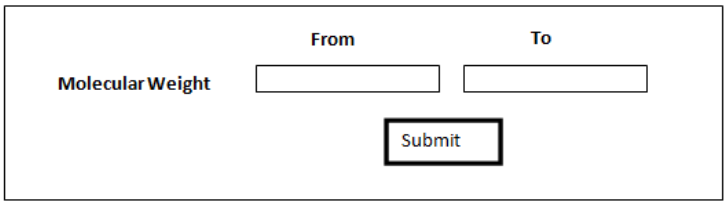
Task 2 : Develop a Graphical user interface for Ligand Database using PHP and Mysql

Given the sample list of Ligand information collected from online resources and stored in MySQL database as given below.

Ligand_Id	Pubchem_Id	Ligand_Name	Molecular Weight	HBD	HBA	Rotable Bonds	Structure
LDA000001	247	Abromine (betaine)	117.146	0	2	2	
LDA000004	6451342	Acacic acid	488.699	4	5	1	
LDA000005	442503	Acanthicifoline	192.214	1	3	1	
LDA000013	160502	Actinodaphnine	311.332	2	5	1	

Hint: HBD corresponds to Hydrogen Bond Donor Count and HBA corresponds to Hydrogen Bond Acceptor Count.

i.Develop a PHP script to create the following user interface and search the whole ligand database based on molecular weight.



i.Design a web page that contains alphabetical letters starting from A to Z. Provide a hyperlink or internal references to each alphabetical letter which redirects a PHP script that retrieves the ligand details staring with that alphabetical letter.