



Department of Computer Science and Engineering
Khulna University of Engineering & Technology
Khulna, Bangladesh

WEB-PROJECT REPORT ON
“Towards Data Science”

Course No: CSE 3100

Course Title: Web Programming Laboratory

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Objectives:

“Towards Data Science” is a website which aims at expand understanding and knowledge of data science enthusiasts of a university by explaining different types of data science algorithms.

The objectives of this project are:

1. To develop a website that will help university's students gaining knowledge about different types of data science algorithms.
2. To develop a website that will help teachers publish offline data science competitions results online.
3. To develop a website that will help teachers to document theirs explanation of different data science algorithms.

Introduction:

“Towards Data Science” is a web site for data science enthusiasts of a specific university. To develop this website I've used HTML to describing the structure of Web pages, CSS to make the front-end of this website shine and creates a great user experience, Bootstrap framework with the purpose to make web development faster and easier. It also includes HTML and CSS-based design templates for forms, typography, buttons, navigation, tables, modals, image carousels, and many other components along with other optional JavaScript plugins, JavaScript which is the only programming language native to the web browser on the front-end and PHP In backend development which is integrated with multiple databases such as MySQL, SQL Server, PostgreSQL, and Oracle. I've used XvAMPP which helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself.

Implementation:

When someone visits this website, he would see a three button screen.

1.User Login

2.Admin Login

3.Create account as User

If a student has an account he can login using it.If he/she wants to login he/she has to fill the login form correctly.After login a student can see their rank list of online contest and read data science algorithms.If a student don't has an account he/she has to create an account to view rank list and algorithms.

Teachers can login using admin login.An admin can CREATE, READ, UPDATE and DELETE rank list and white different type of Algorithms' explanation which is the main purpose of this website.

I've used session cookies as this allow websites to remember users within a website when they move between web pages These cookies tell the server what pages to show the user so the user doesn't have to remember where they left off or start navigating the site all over again.

Flow Chart

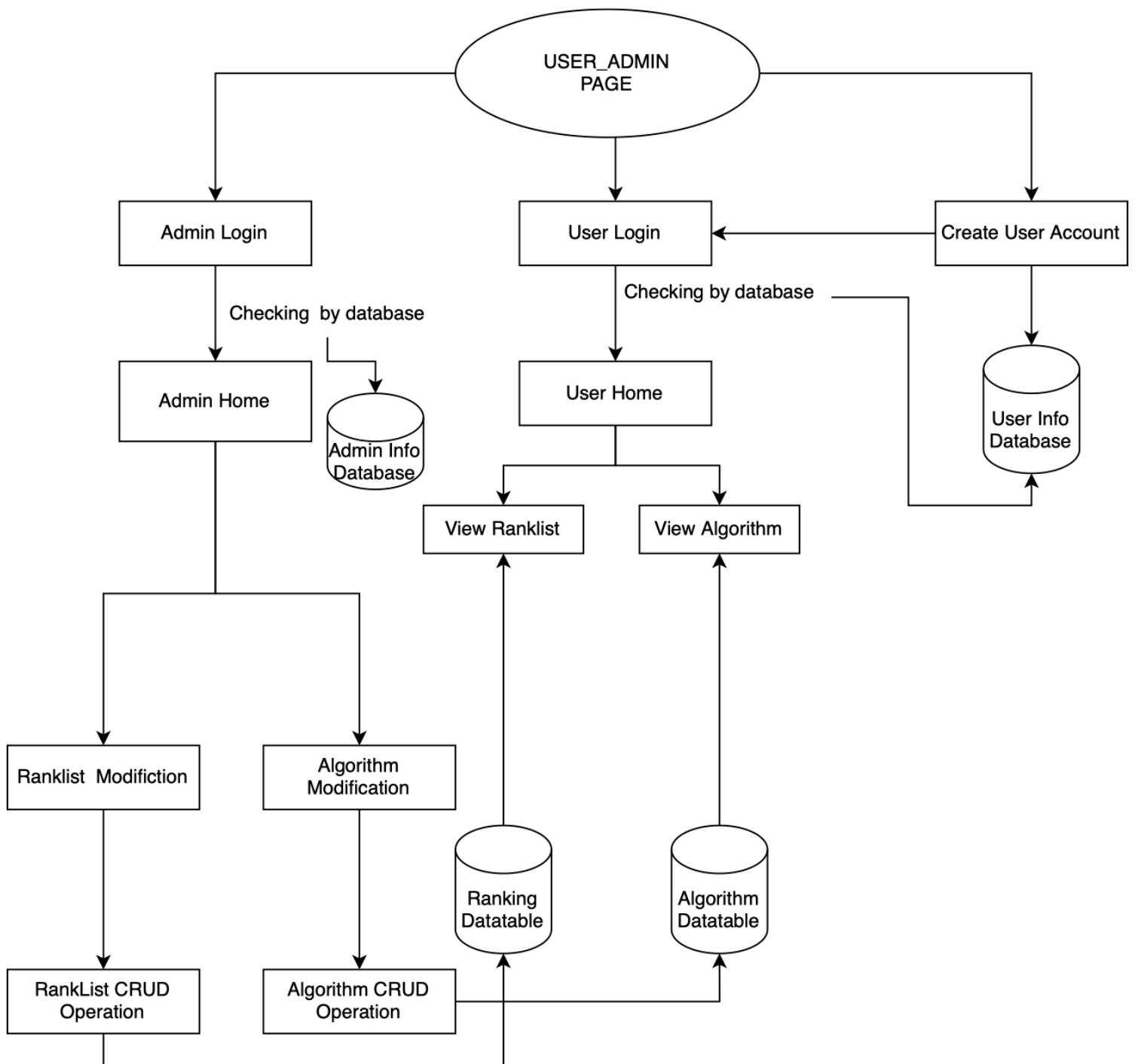


Fig 1: Flow chart of website “Towards data science”

Schema Diagram:

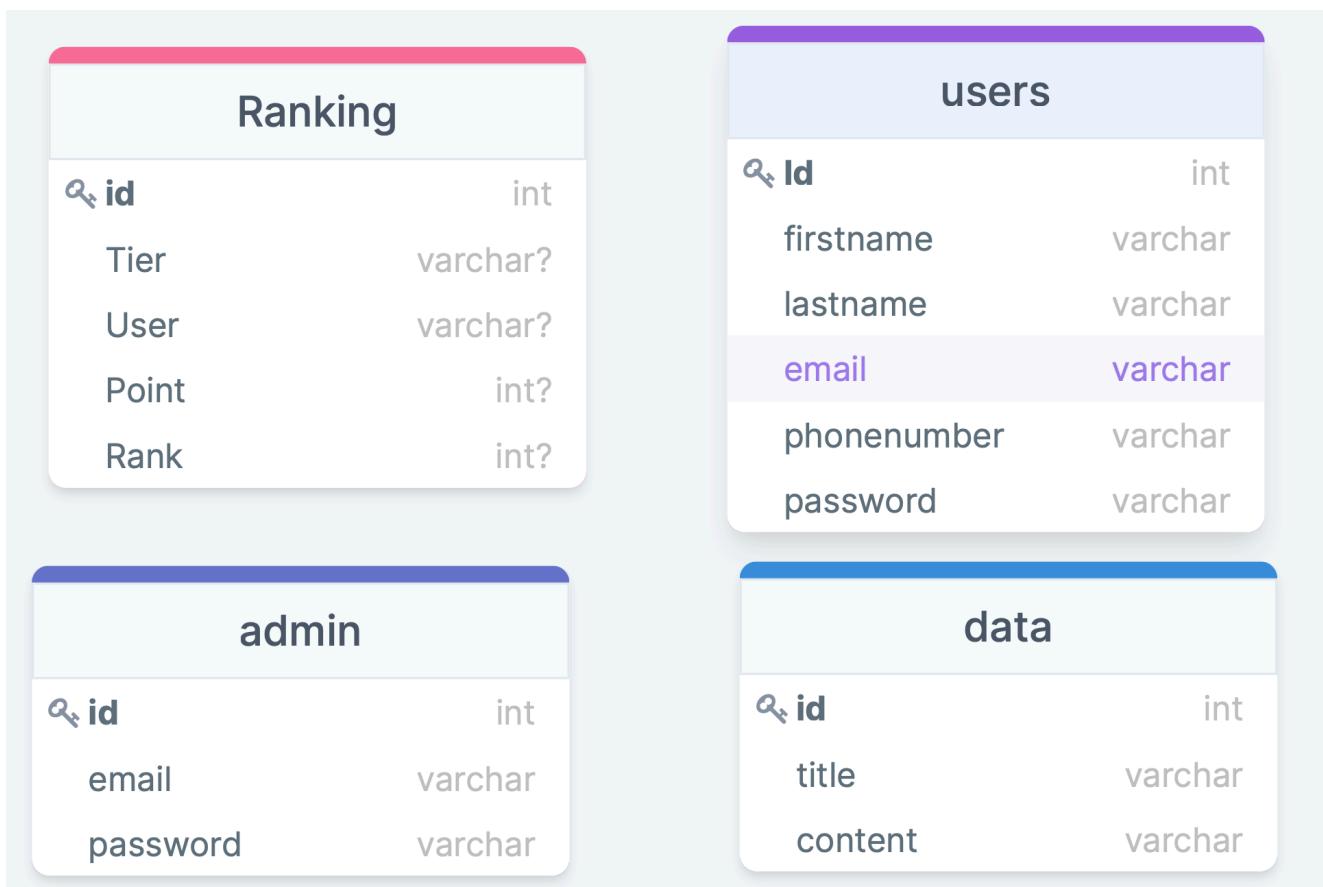
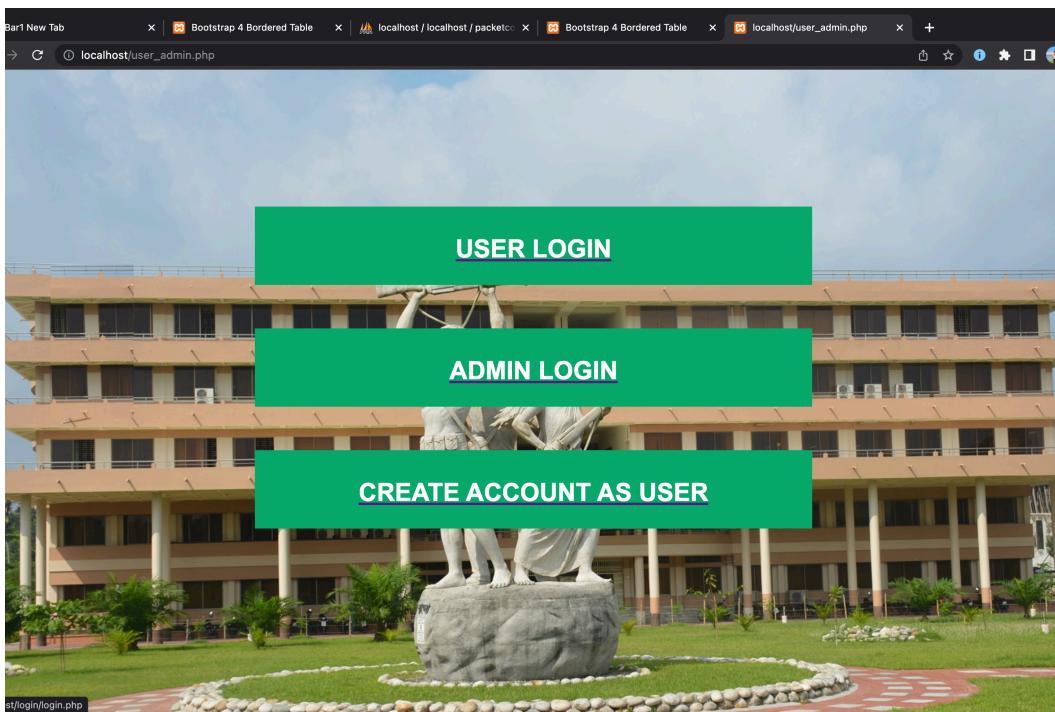


Fig 2: Schema Diagram of “Towards Data Science” DBMS

Website Pages

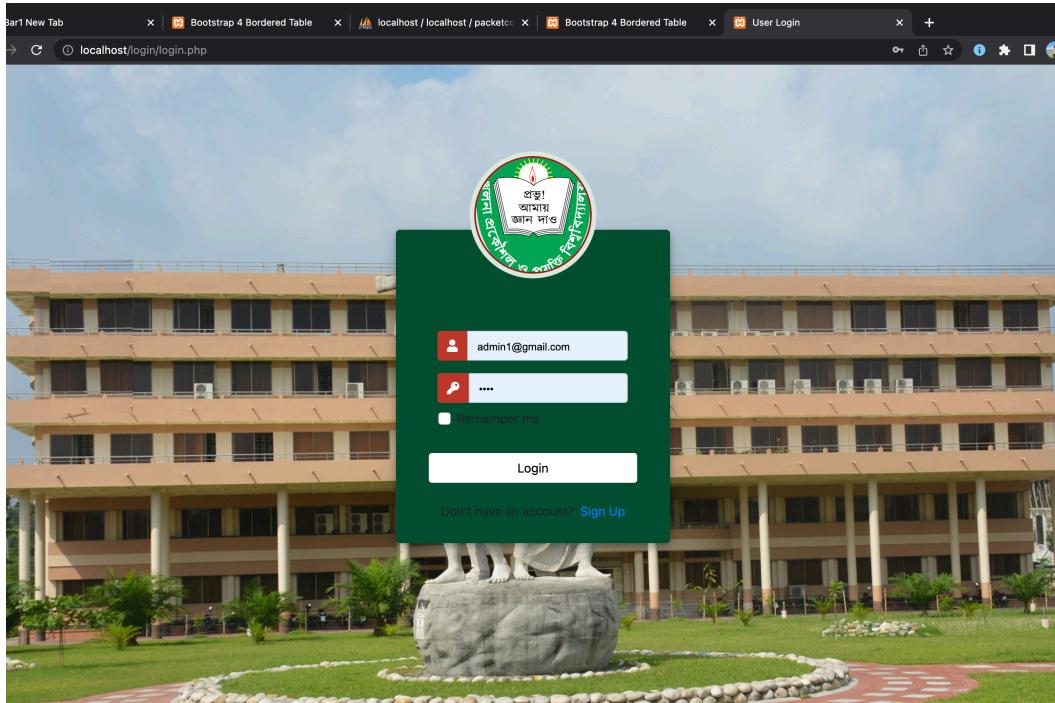
All executing webpages of this website:



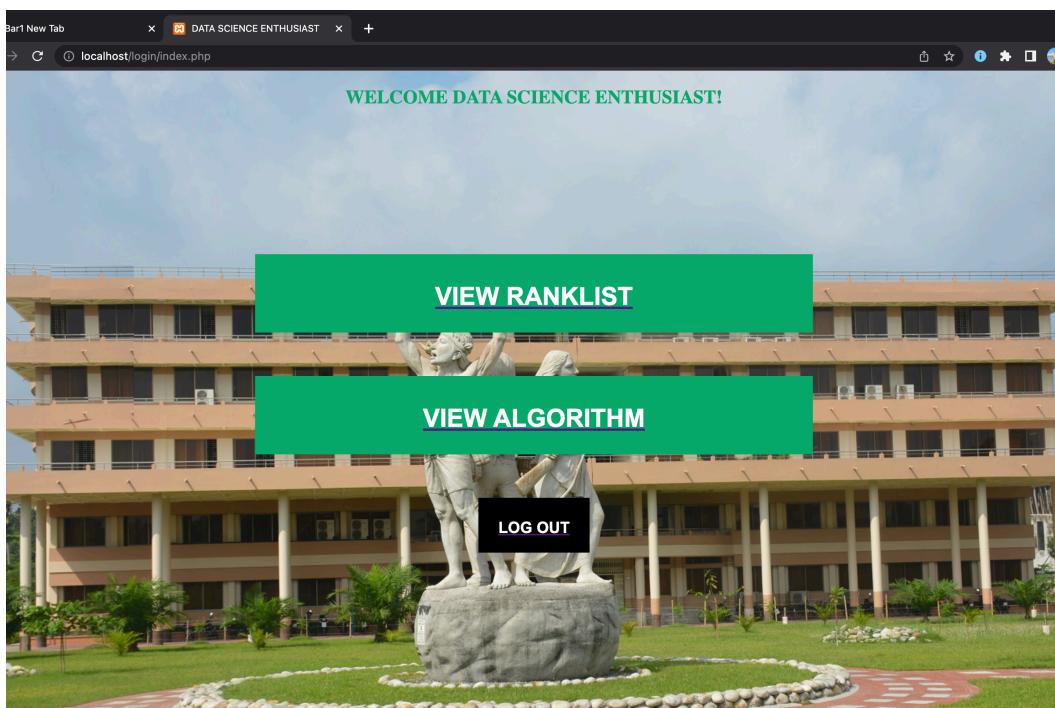
User_Admin Page

A screenshot of a web browser showing the 'User Registration Page'. The page has a light blue background with a faint cloud pattern. It contains a registration form with fields for 'First Name', 'Last Name', 'Email Address' (with 'admin1@gmail.com' entered), 'Phone Number', and 'Password' (with '....' entered). Below the form are two buttons: a blue 'Sign Up' button and a white 'LOGIN' button. The URL 'localhost/Registration/registration.php' is visible in the address bar.

User Registration Page



User Login Page

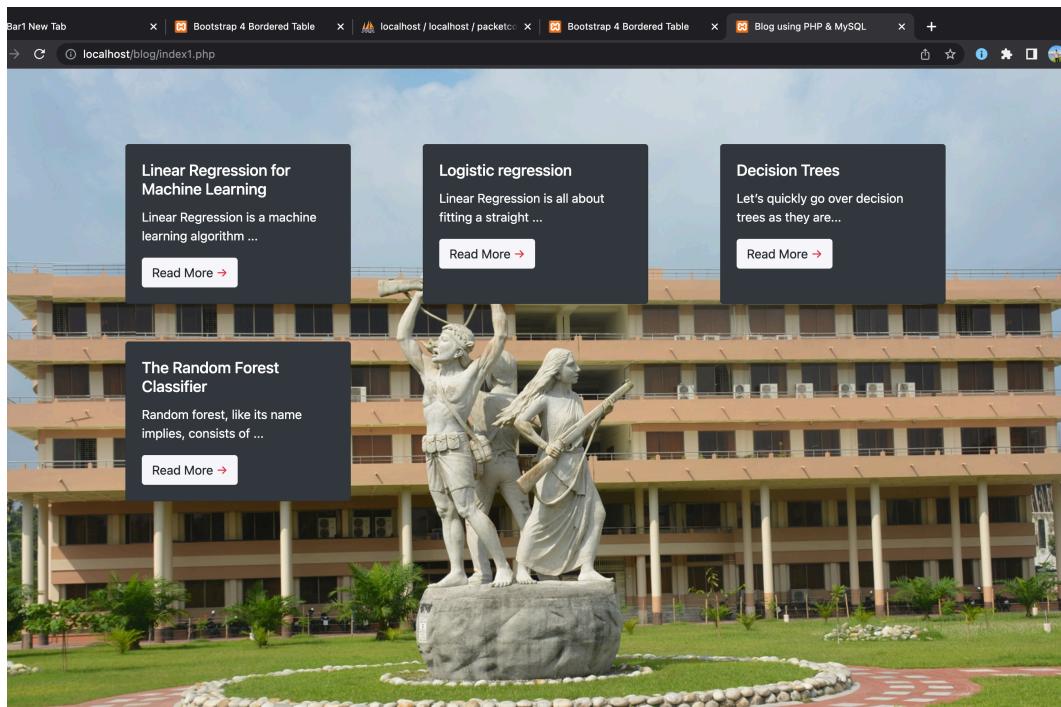


User Home Page

ID	Rank	User	Tier	Point
2	1	Tashin	Grandmaster	22300
6	2	Apon	GrandMaster	21000
7	3	Papon	Master	19000
12	4	arnob	master	16000
14	5	aviseikh	Expert	18060

[HOME](#)

Rank List Viewing Page



Algorithms viewing Page



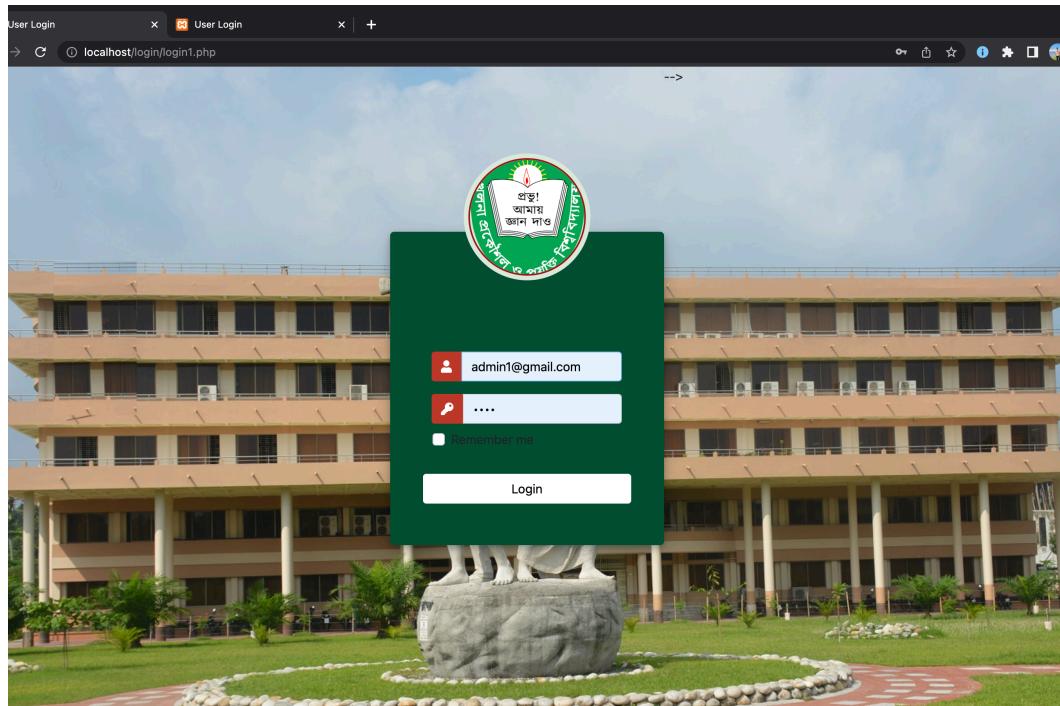
Linear Regression for Machine Learning

Linear Regression is a machine learning algorithm based on supervised learning. It performs a regression task. Regression models a target prediction value based on independent variables. It is mostly used for finding out the relationship between variables and forecasting. Different regression models differ based on – the kind of relationship between dependent and independent variables they are considering, and the number of independent variables getting used. Linear regression performs the task to predict a dependent variable value (y) based on a given independent variable (x). So, this regression technique finds out a linear relationship between x (input) and y (output). Hence, the name is Linear Regression. In the figure above, X (input) is the work experience and Y (output) is the salary of a person. The regression line is the best fit line for our model. While training the model we are given : x : input training data (univariate – one input variable(parameter)) y : labels to data (supervised learning) When training the model – it fits the best line to predict the value of y for a given value of x . The model gets the best regression fit line by finding the best θ_1 and θ_2 values. θ_1 : intercept θ_2 : coefficient of x Once we find the best θ_1 and θ_2 values, we get the best fit line. So when we are finally using our model for prediction, it will predict the value of y for the input value of x . How to update θ_1 and θ_2 values to get the best fit line ? Cost Function (J): By achieving the best-fit regression line, the model aims to predict y value such that the error difference between predicted value and true value is minimum. So, it is very important to update the θ_1 and θ_2 values, to reach the best value that minimizes the error between predicted y value (pred) and true y value (y).

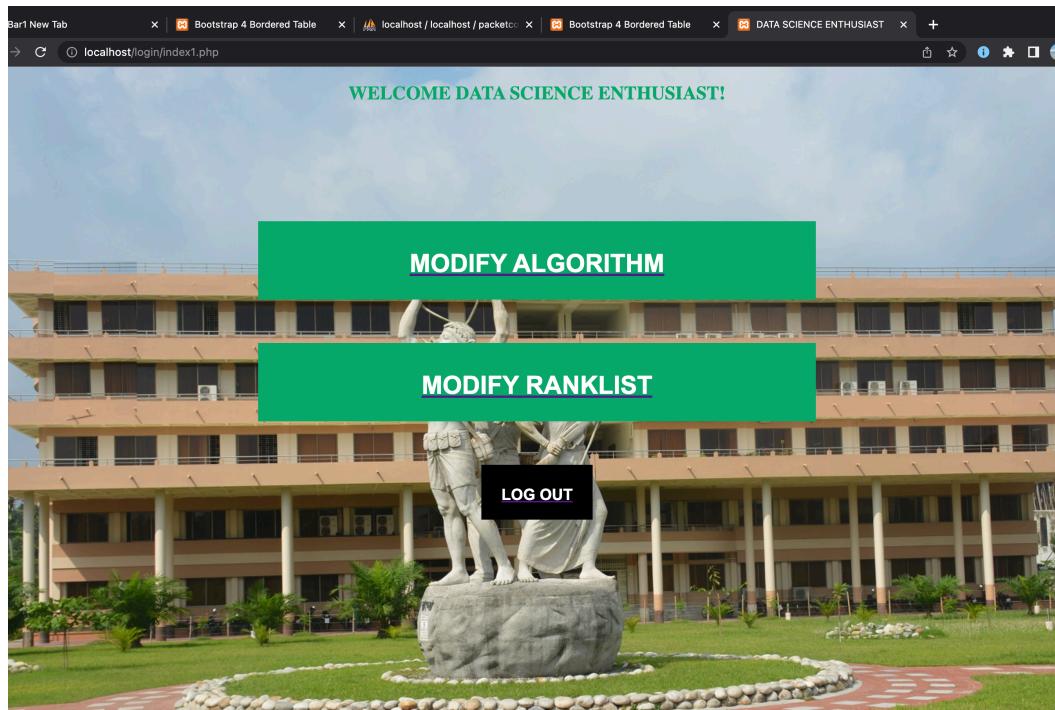
[Go Home](#)



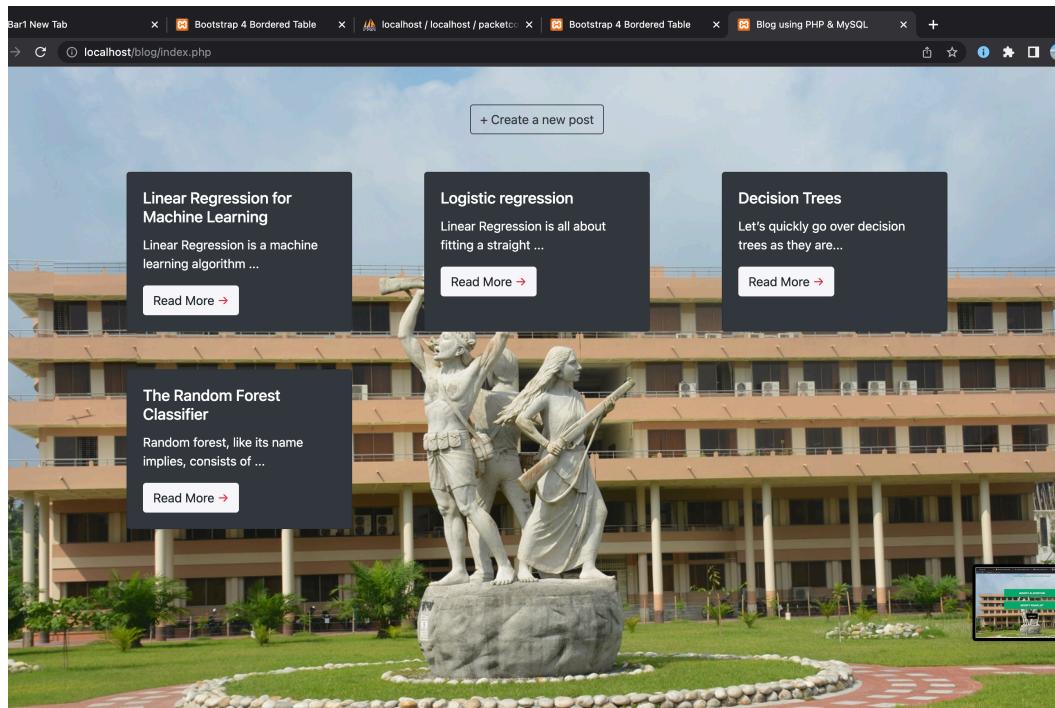
Algorithms Details Page



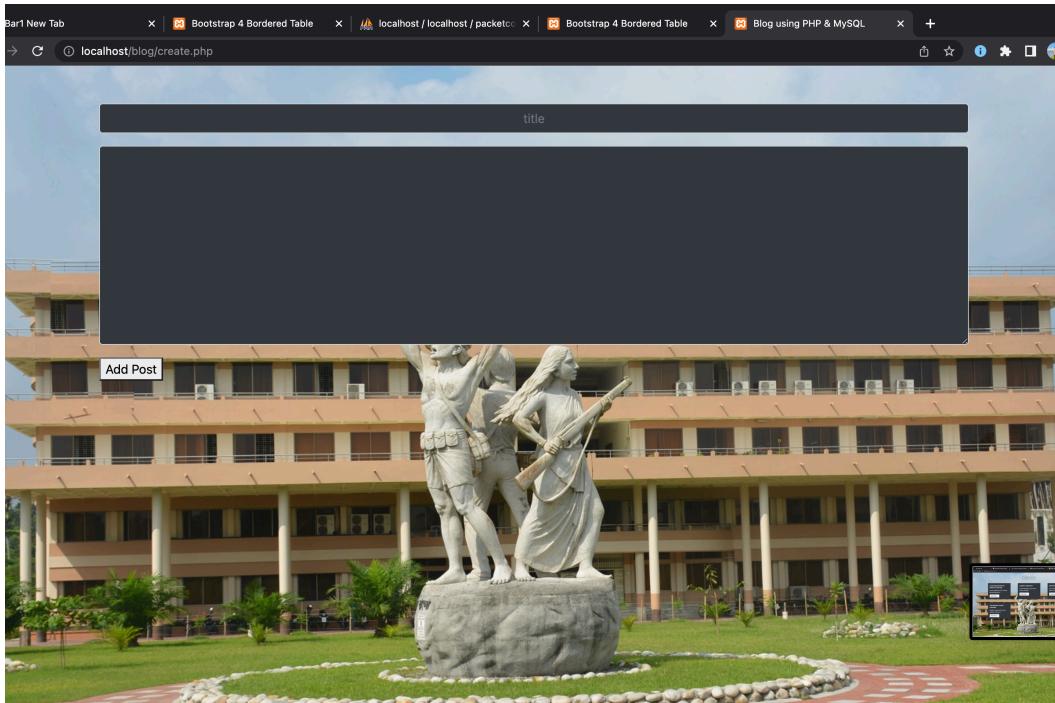
Admin Login Page



Admin Home Page



CRUD Page of Algorithm



Write Algorithms Page

Linear Regression for Machine Learning

Linear Regression is a machine learning algorithm based on supervised learning. It performs a regression task. Regression models a target prediction value based on independent variables. It is mostly used for finding out the relationship between variables and forecasting. Different regression models differ based on – the kind of relationship between dependent and independent variables they are considering, and the number of independent variables getting used. Linear regression performs the task to predict a dependent variable value (y) based on a given independent variable (x). So, this regression technique finds out a linear relationship between x (input) and y(output). Hence, the name is Linear Regression. In the figure above, X (input) is the work experience and Y (output) is the salary of a person. The regression line is the best fit line for our model. While training the model we are given : x: input training data (univariate – one input variable(parameter)) y: labels to data (supervised learning) When training the model – it fits the best line to predict the value of y for a given value of x. The model gets the best regression fit line by finding the best θ_1 and θ_2 values. θ_1 : intercept θ_2 : coefficient of x Once we find the best θ_1 and θ_2 values, we get the best fit line. So when we are finally using our model for prediction, it will predict the value of y for the input value of x. How to update θ_1 and θ_2 values to get the best fit line ? Cost Function (J): By achieving the best-fit regression line, the model aims to predict y value such that the error difference between predicted value and true value is minimum. So, it is very important to update the θ_1 and θ_2 values, to reach the best value that minimize the error between predicted y value (pred) and true y value (y).

[Go Home](#)

[Edit](#) [Delete](#) Algorithm Page

Bar1 New Tab | Bootstrap 4 Bordered Table | localhost /localhost /packetcc | Bootstrap 4 Bordered Table | localhost/display.php | +

Users List

ID	Rank	User	Tier	Point	Operation
2	1	Tashin	Grandmaster	22300	UPDATE DELETE
6	2	Apon	GrandMaster	21000	UPDATE DELETE
7	3	Papon	Master	19000	UPDATE DELETE
12	4	arnob	master	16000	UPDATE DELETE
14	5	aviseikh	Expert	18060	UPDATE DELETE

[ADD USER](#)
[HOME](#)

CRUD Ranklist Page

Bar1 New Tab | Bootstrap 4 Bordered Table | localhost /localhost /packetcc | Bootstrap 4 Bordered Table | Rank Insert | localhost/crud.php | +

RANK

TIER

USER

POINT

[Submit](#)



Create Update Page

Target vs Actual Accomplishment

My target was to build a website that help student to gain data science knowledge and competition result from online.

I've completed my target.

Discussion and Conclusion

The project is done as expected. At first I've faced some difficulties to make it as much as user friendly as it could be. But I've overcome all difficulties .

My purpose in developing this website was to provide a very simple interface to the requirement that will be easy to navigate and operate,

This Website is:

- Highly user-friendly
- Easy-to-use

After all the project is done successfully as expected.

References:

1. <https://www.w3schools.com/html/>
2. <https://www.w3schools.com/css/default.asp>
3. <https://www.w3schools.com/js/default.asp>
4. <https://www.w3schools.com/php/default.asp>
5. https://www.w3schools.com/bootstrap/bootstrap_ver.asp