Project Report

On

Contest Hosting Portal

Submitted To

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Table Of Contents

Introduction

Technology is moving faster and changing standard of lives very fast. Machines have now become a part of our lives today. It has transformed manual work to digital work and that too with great accuracy and efficiency.

In our college when any event has to be organized like quiz events and other programming contests, generally printing of papers and other manual arrangements are done which are really a waste in this technically progressing world. Our main **Objective of this project** is to facilitate hosting of contests on a website so that the above discussed process becomes easy and in turn we are helping our environment too by saving a lot of paperwork. The function of the project is to provide a portal to the event organizers in which they can schedule a contest by easily uploading question and answers based on an administrator identity provided to them.

Need of Project

The project sees its need in solving few underlying problems - >

- We are not sure about how many people will take part in any contest so we generally print a lot of papers to ensure there is no shortage but if users get suddenly low then all things go for waste especially during the college technical fest.
- Accuracy with humans is the most variable factor. If a question set contains error in one or more questions, then we can't make any changes to the hard copy.
- Time for evaluating and compilation of results is not deterministic.

But if the above work is done digitally then to edit the problems or any changes, or to generate results and ranks become very easy. We don't have to think how many people will participate because there is no need to generate any special things and everything is automatically done. Just done while conducting IITJEE ,VIT etc. online exams where you just have to submit one correct option.

Our project contains the following sections ->

Registration – Every member whether he is admin of any contest or not registers through the signup form in the home page. The permission to become an administrator will be provided by the database administrator.

Hosting – Hosting section is made for the administrators so that they can host contest for other people. Every member of portal will be given access to this button/page if and only if he is an administrator. He can set problems, schedule and

also edit problems before the contest ends. Even if a problem is found during the live contest he can edit that too.

Participation – All the registered members in the portal can participate in the contests except the administrator of that contest as he will be given the access to edit problems, view leader boards but he himself being a problem setter can't take part in the contest, he will not be given that access.

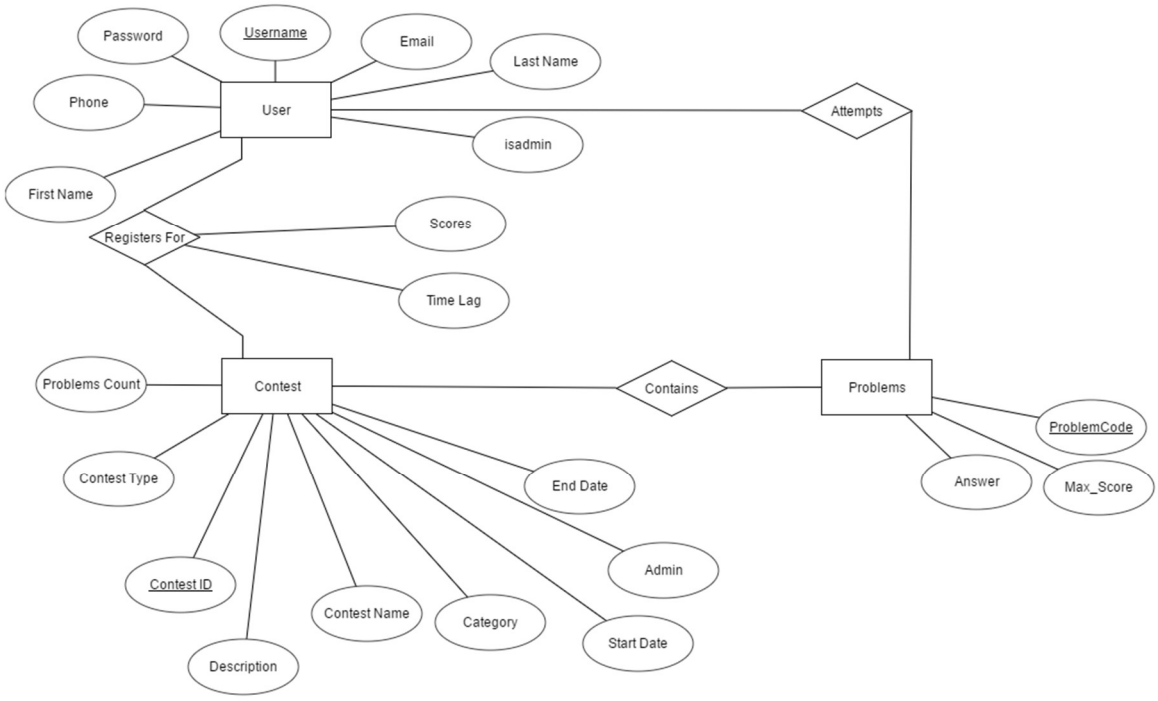
Technologies Used

ER Designing – We have used ERD Plus online tool to design ER MODEL for the database

Front End – For front end we have used Materialize framework (CSS), HTML and JavaScript

Back End – My SQL, PHP

Database Design and ER Model



Our database contains three entities –

1. **User** – This stores details of registered user along with their access privileges as administrators or not. Every data incurred from the registration form is stored here. The attributes of this table are ->
    - **Username** – Uniquely identifies each user in the database. It is primary key of this table
    - Password – Encrypted text used for authentication purpose for logging into the portal
    - Phone – Phone stores phone number of the person which can be used to further contact the person after the contest if he is eligible for some prizes or any other matter
    - Email – Email is just for sending some private notifications or announcements
    - First Name – First Name of the user
    - Last Name – Last Name of the user
    - IsAdmin – This Boolean value is 1 if user is the admin or else it is zero

2. **Contest** – This table stores data of every contest viz. Contest name, start time, end time, Unique identity of each contest, count of problems. The attributes of this table are ->
    - ContestType - Contest Type contains numeric value defining type of contest. Currently we support values 1 and 2 only. 1 for multiple choice questions and 2 for no choice simply solve and enter questions
    - **ContestID** – Unique ID for each contest. It is primary key
    - Description – Description of each event
    - ContestName – Name of the event
    - Category – Category categorizes each contest based on the event type. Currently only three are supported and rest are categorized as others.
    - StartDate – It is an attribute of type Date and Time which stores end time of the contest
    - EndDate – It is an attribute of type Date and Time which stores end time of the contest
    - Rules – Rules store rules and other announcements regarding the project
    - **Admin** - It is foreign key that shows which user is admin

3. **Problems** – This table stores details of problems i.e problem code and its answer along with total points one secures after solving the problem completely. The attributes of this table are - >
    - **Problem_Code** – A unique code for each problem and it's the primary key of this table
    - Answer – Answer to that particular problem
    - Max_Score – Max Score is the score one obtains on successfully solving the problem

To Maintain connectivity between the above entity sets we have made few relationship sets which help us in proper retrieval of data. We have three binary relationships –

1. **Registers For** – This relationship contains information about which user has registered for which contest. To manage ranklist in the contest we have used the same table and for doing that we added few more attributes. The attributes of this relationship are –
    - **Username** – Foreign Key Referencing the Username of User table
    - **Contest ID** – Foreign Key Referencing the ContestID of contest table. The above attribute with this combination tracks the user has registered for the contest or not.
    - Scores – The total score by a particular user registered for a contest, it has initial value as 0
    - Time Lag – This stores the total time in seconds taken by the contestant in solving the problems and will be used to break tie between same points people.
    - Rank – Rank stores the rank of the user in that particular contest. This in particular is not required but for optimization we have used it.

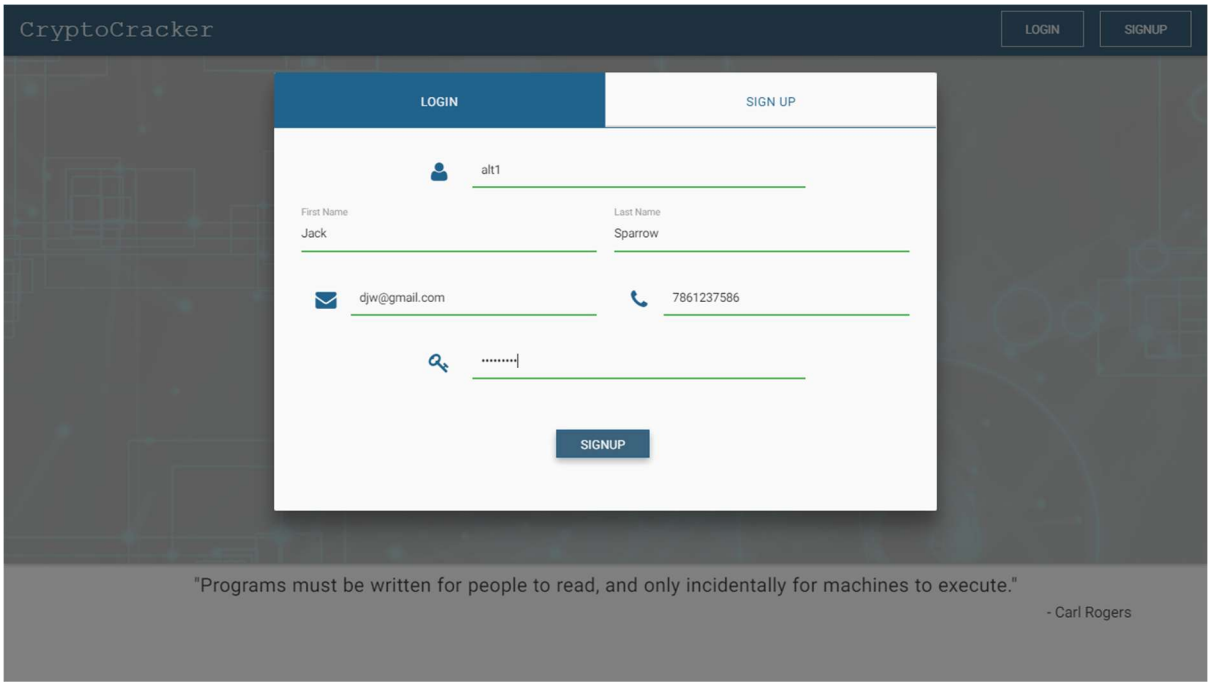
2. **Contains** – This relationship contains only two foreign keys that is Contest ID and Problem Code which tells us what problem came in which contest.

3. **Attempts** – This relationship contains information about whether a user has attempted a problem or not. This can be used at the time of viewing the history contest details so that user can know about which problems did he attempted. It contains only two attributes i.e. foreign keys Username referencing Username of **User** table and **ProblemCode** referencing ProblemCode of Problems table.

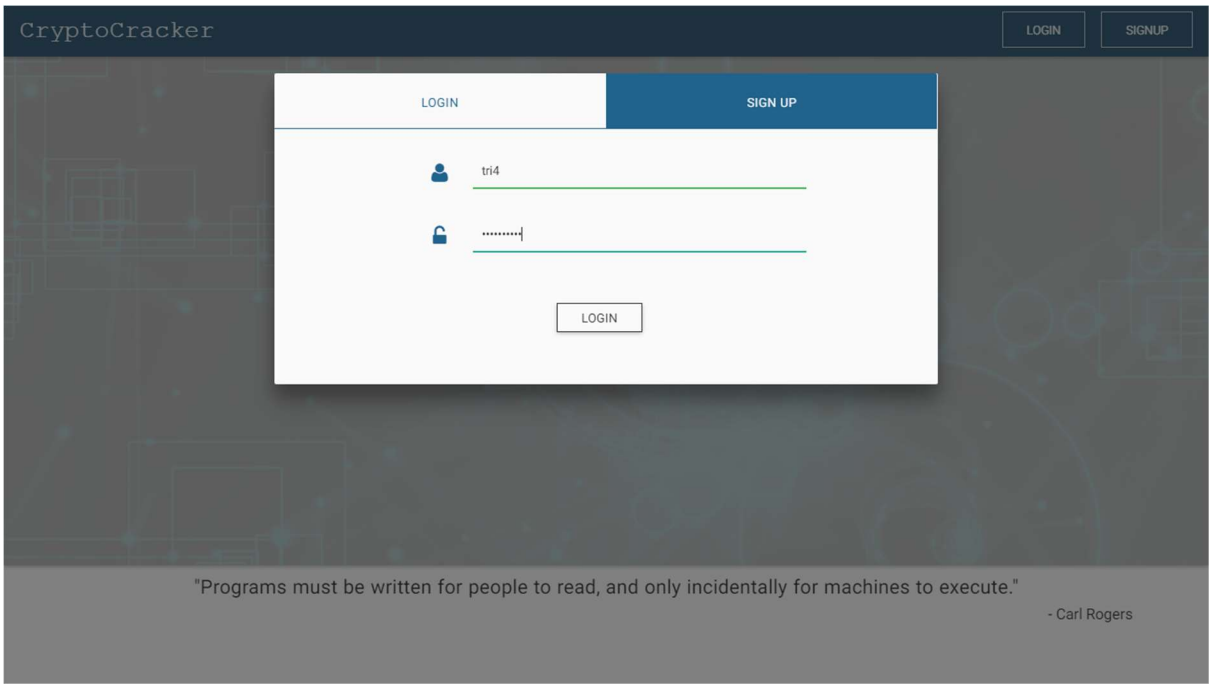
Few Snapshots of Our Interface

Login Page

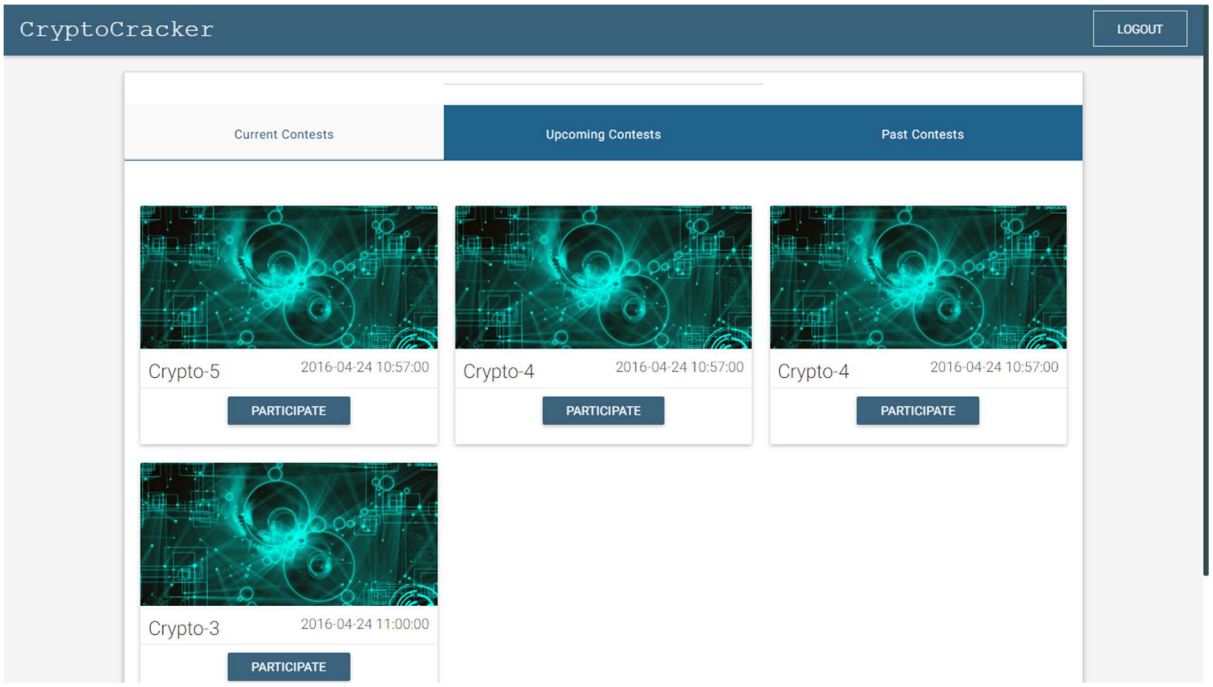
Signup Box



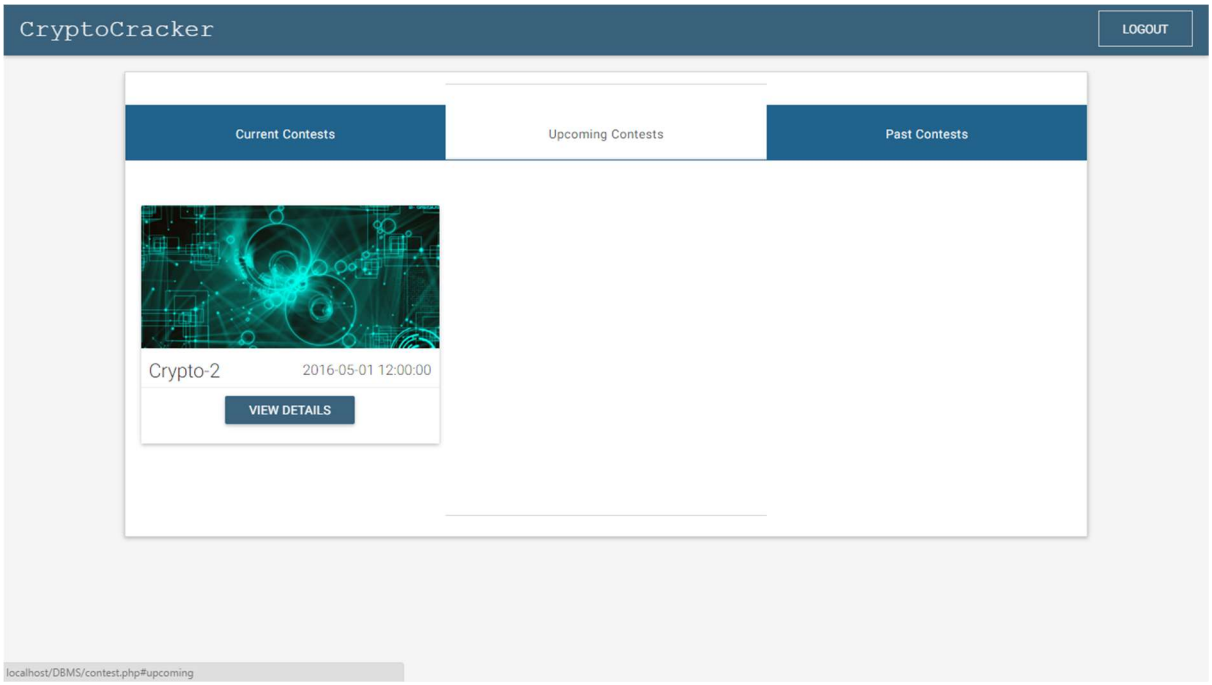
Login Box



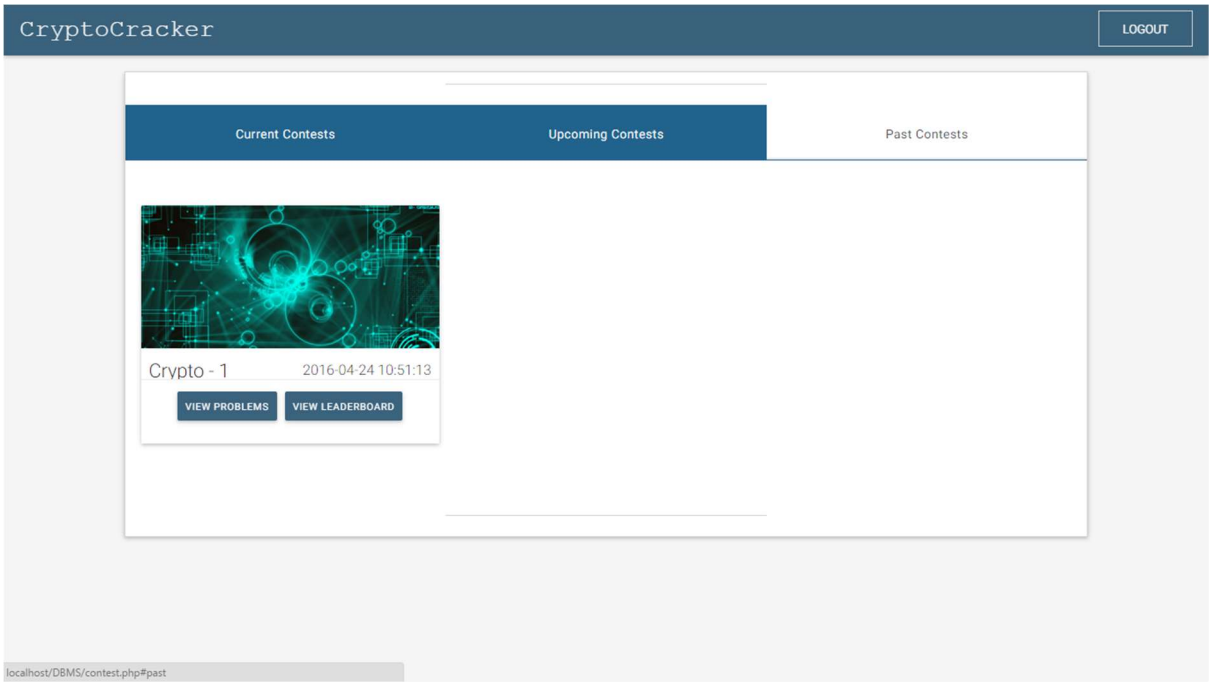
Current Contest Tab



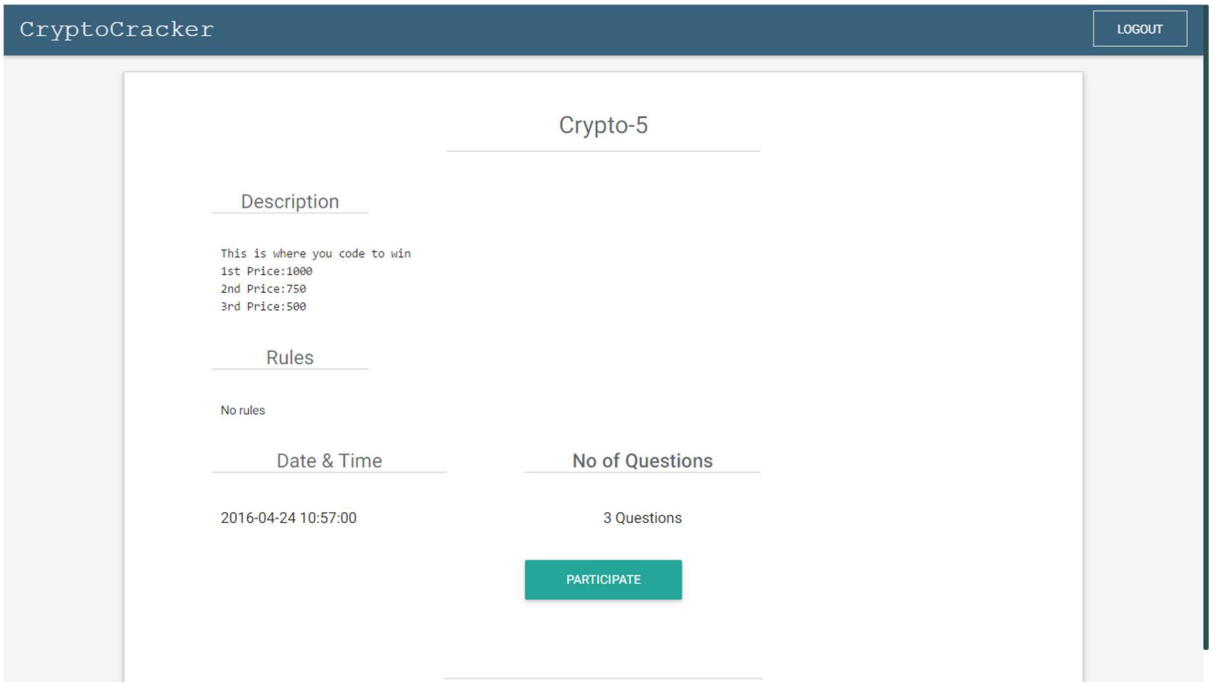
Upcoming Contest Page



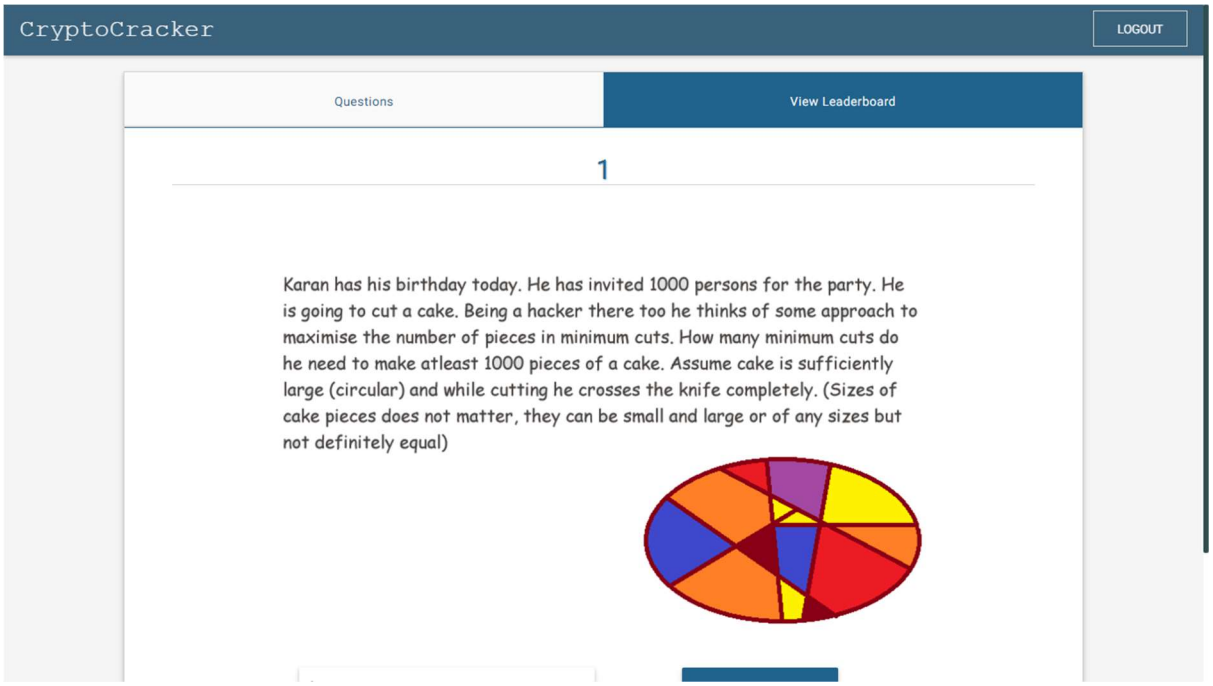
Past Contest Tab



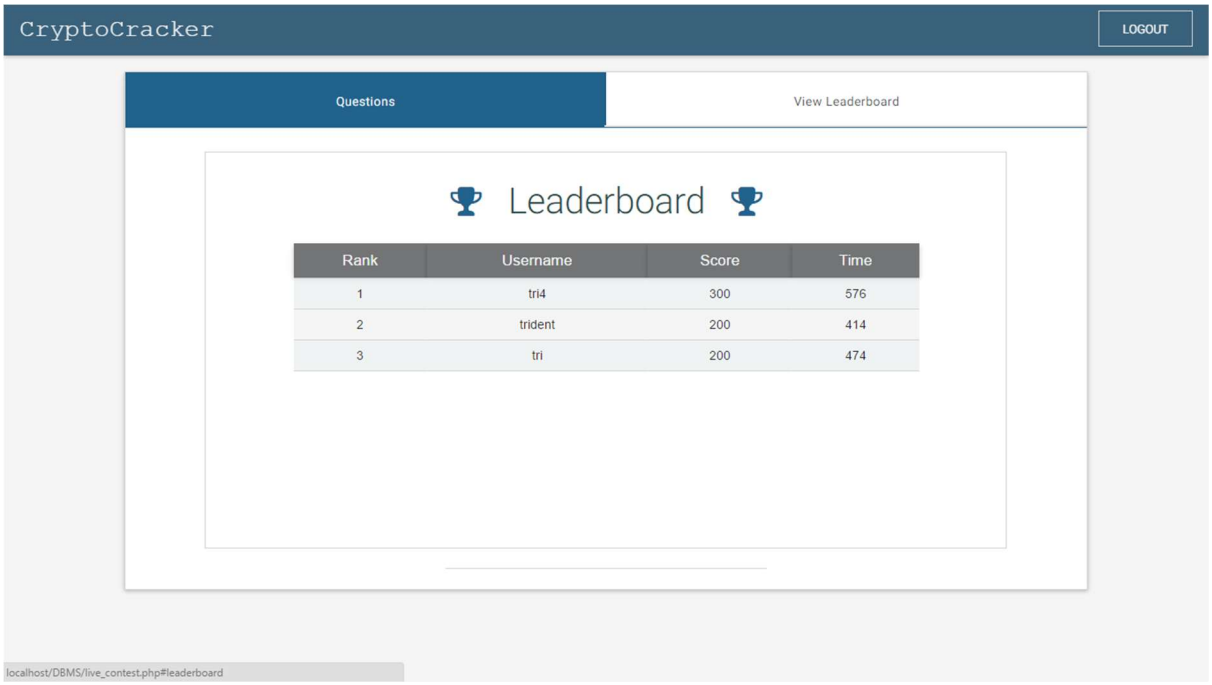
View Details Page



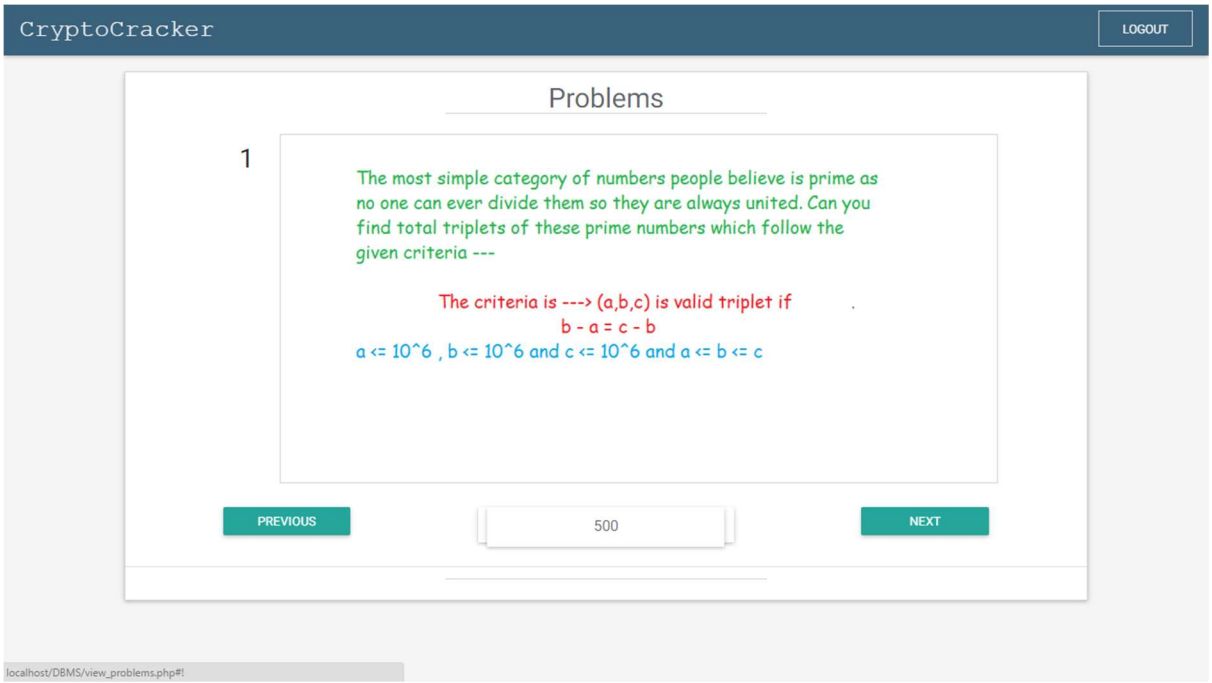
Live Contest Page



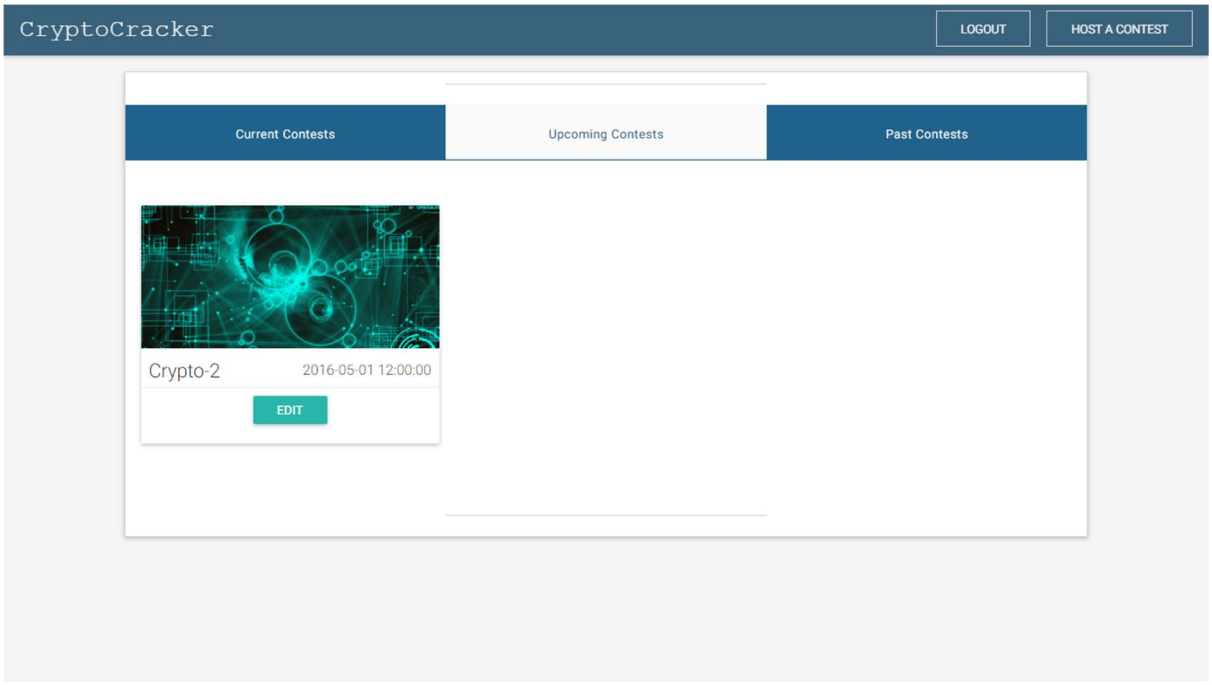
Leader Board Live Tab



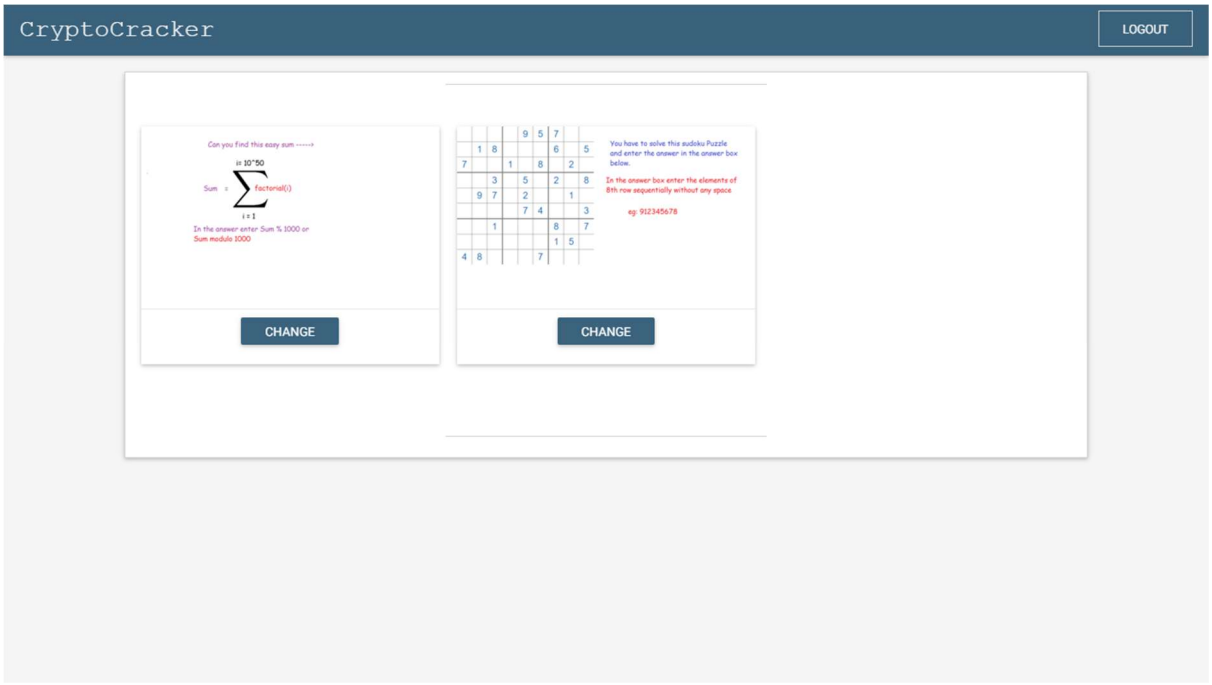
Past Contest Page



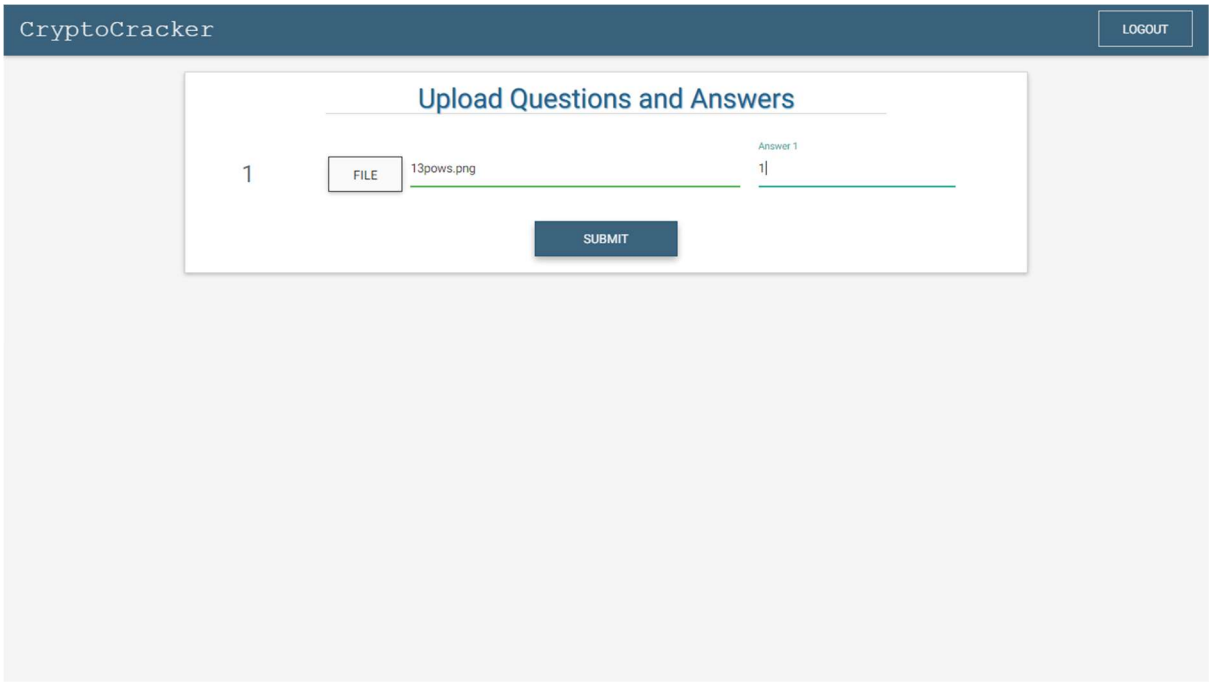
Upcoming Contest Tab With Edit Access



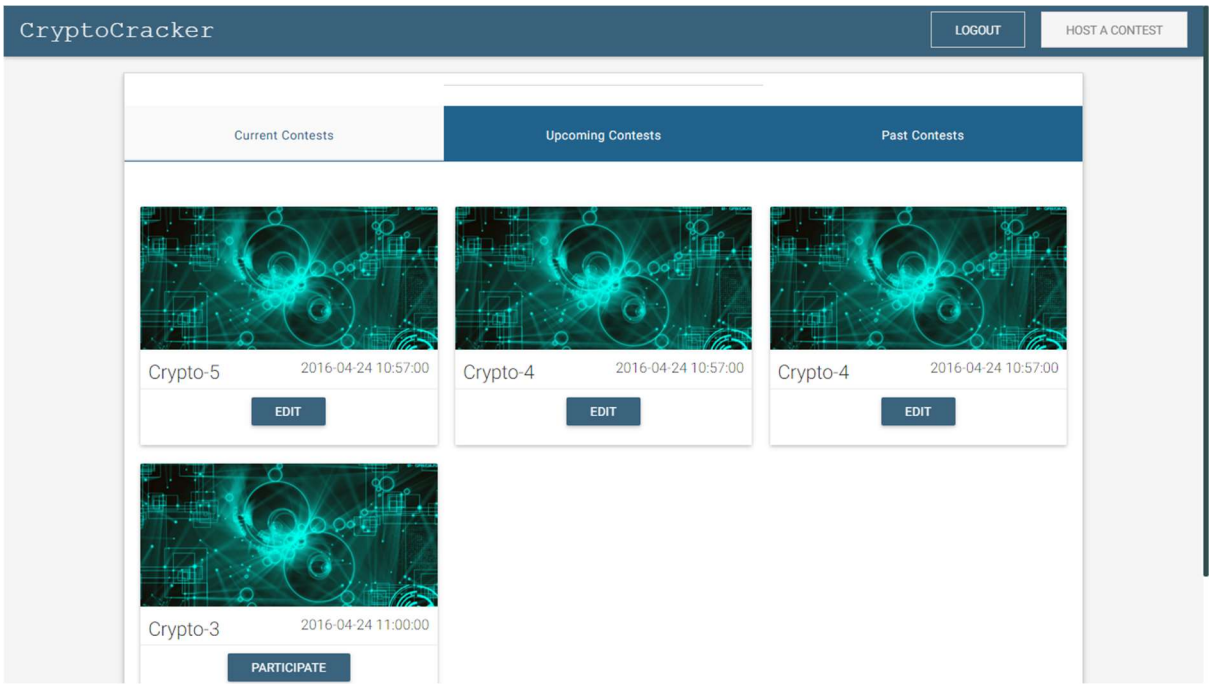
Change Upcoming Contest Problem



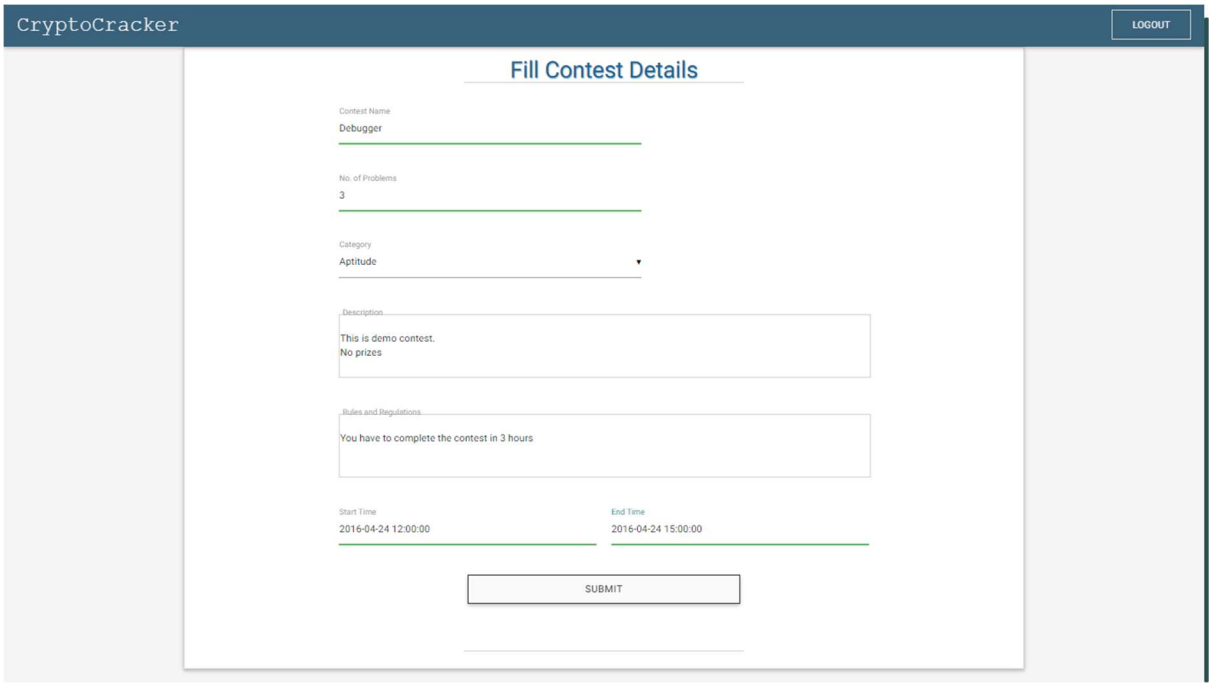
New Uploading of Questions Page



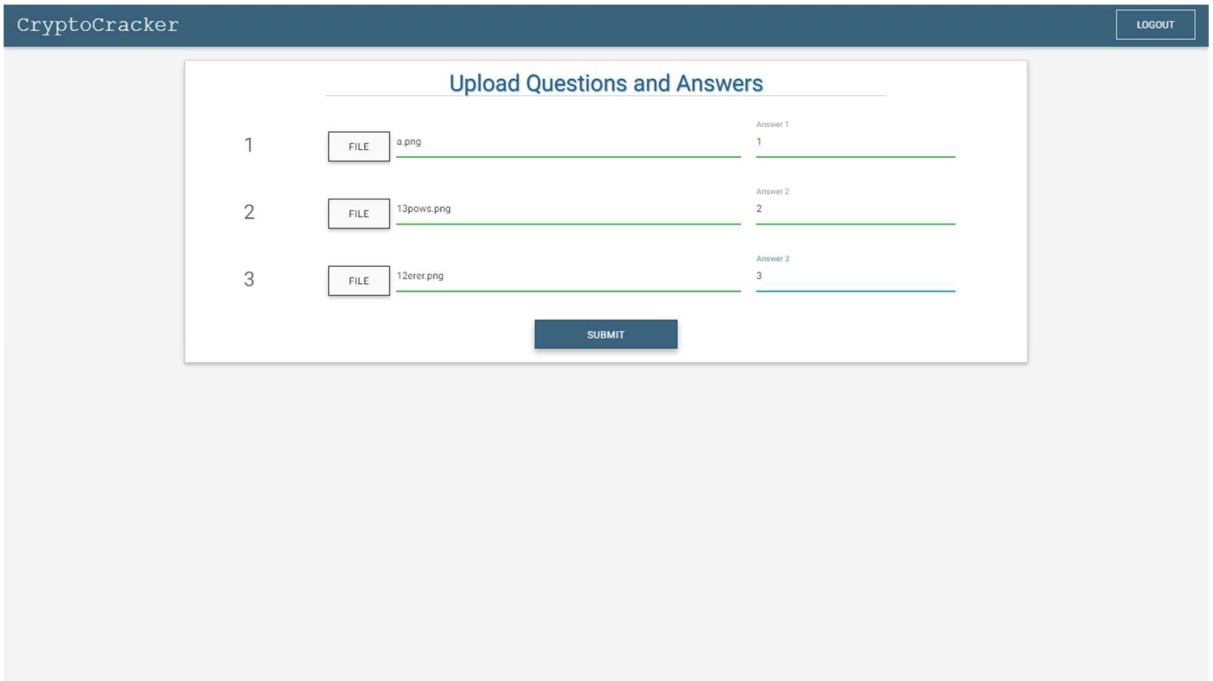
Current Contest Tab



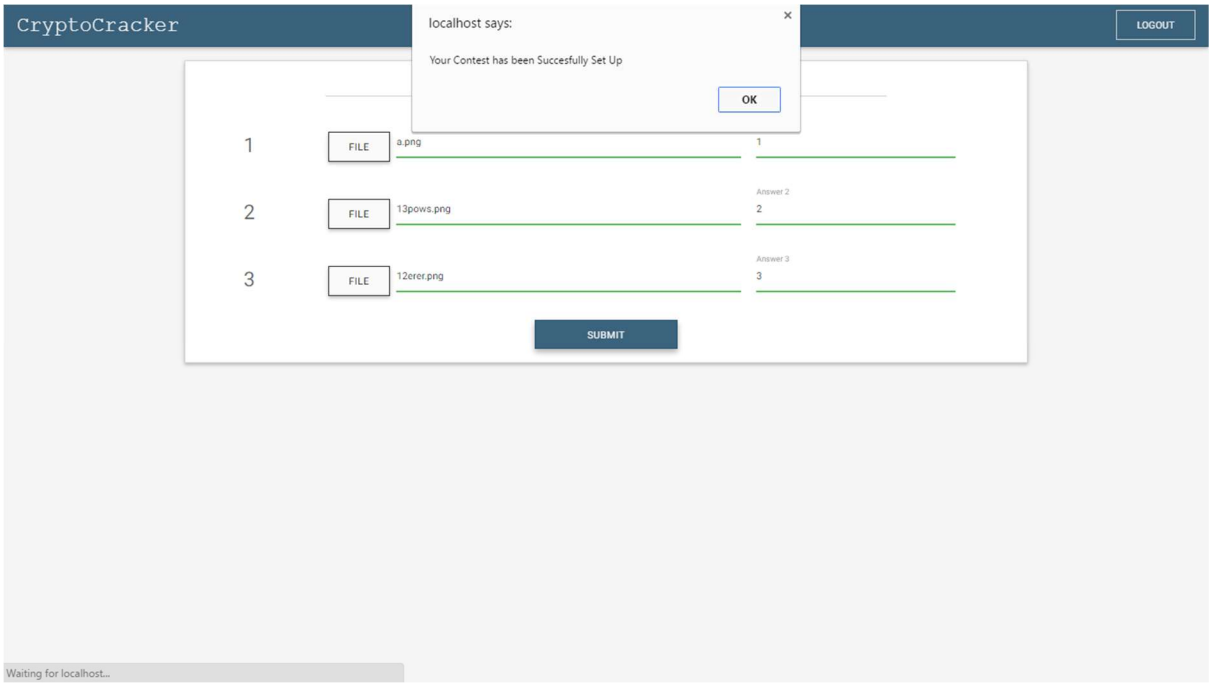
New Contest Host Page



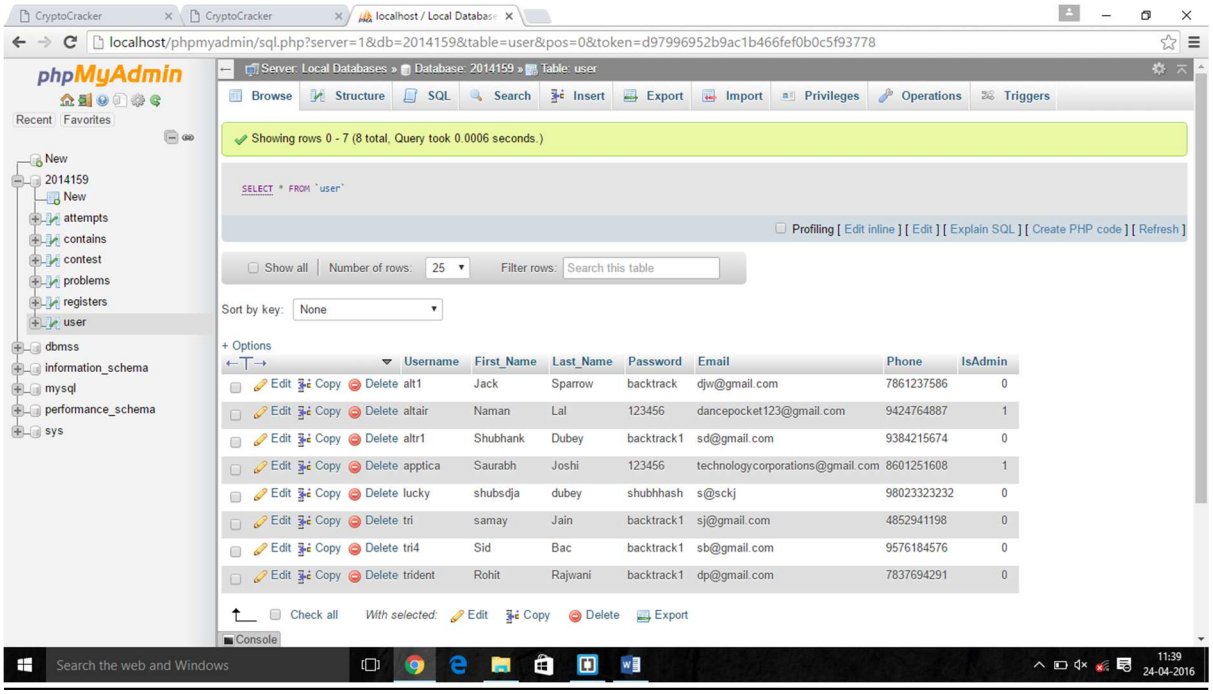
Upload Questions for New Contest

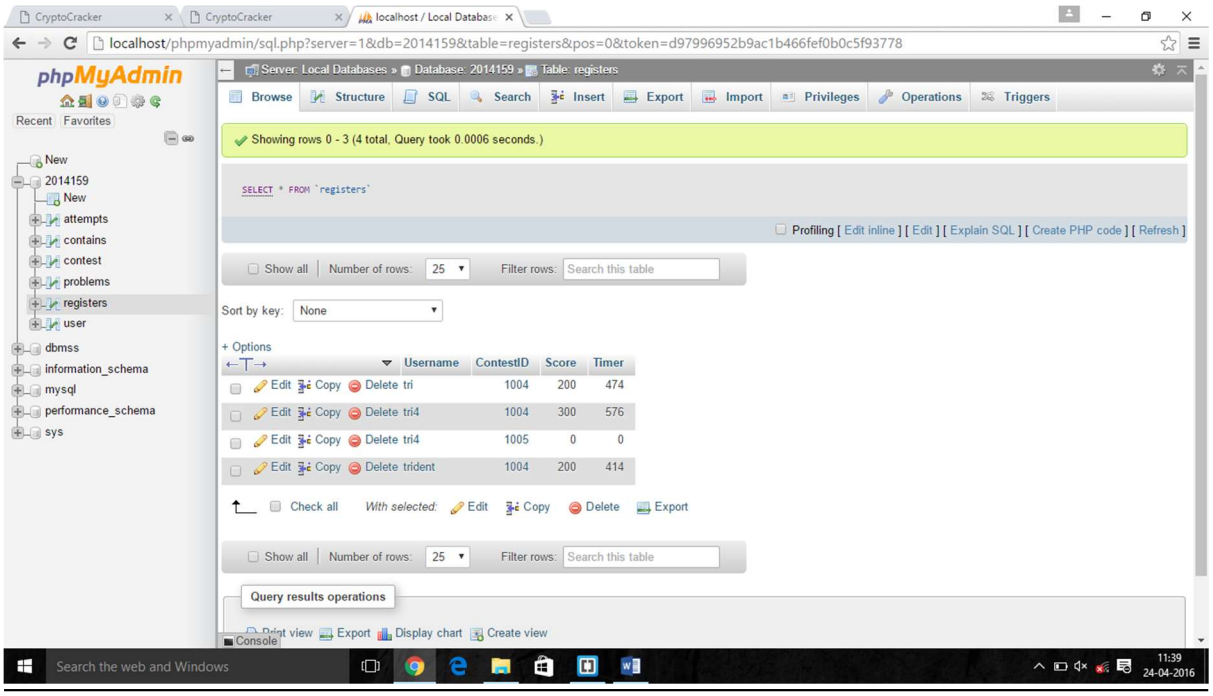


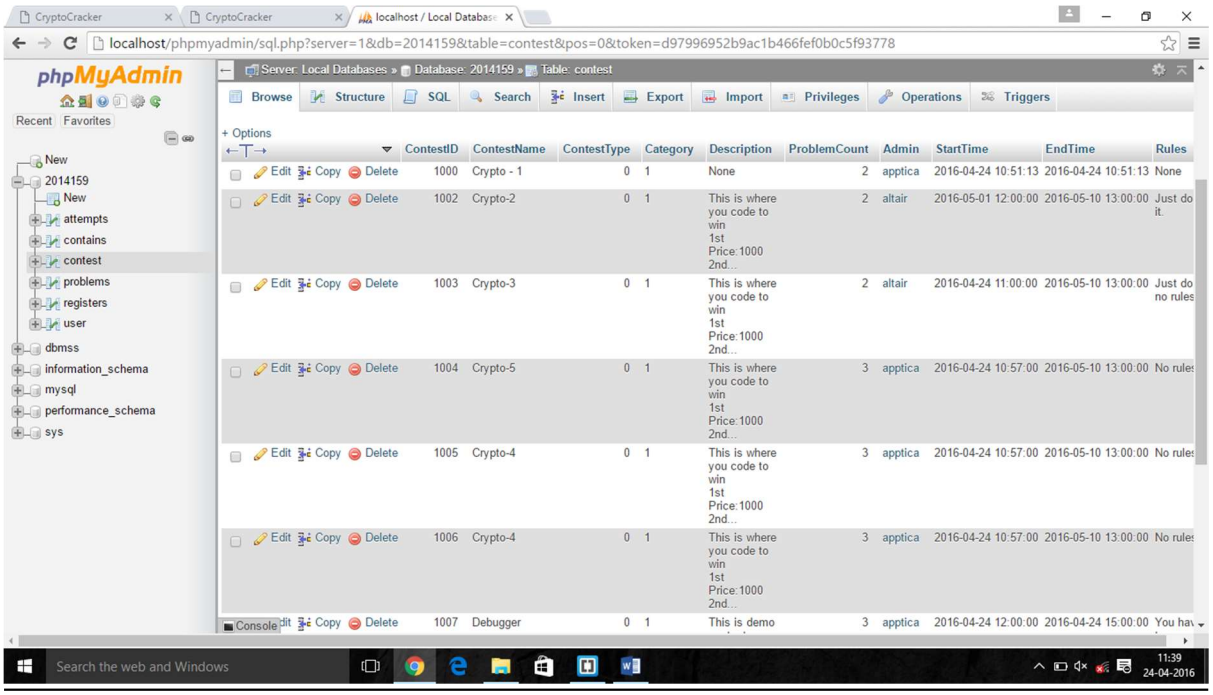
Confirmation on Contest Setup



Database Schema Snapshots






CryptoCracker
CryptoCracker
localhost / Local Database
localhost/phpmyadmin/sql.php?server=1&db=2014159&table=contest&pos=0&token=d97996952b9ac1b466fef0b0c5f93778
phpMyAdmin
Recent Favorites
New
2014159
New
attempts
contains
contest
problems
registers
user
dbmss
information_schema
mysql
performance_schema
sys
Server: Local Databases » Database: 2014159 » Table: contest
Browse Structure SQL Search Insert Export Import Privileges Operations Triggers
+ Options
ContestID ContestName ContestType Category Description ProblemCount Admin StartTime EndTime Rules
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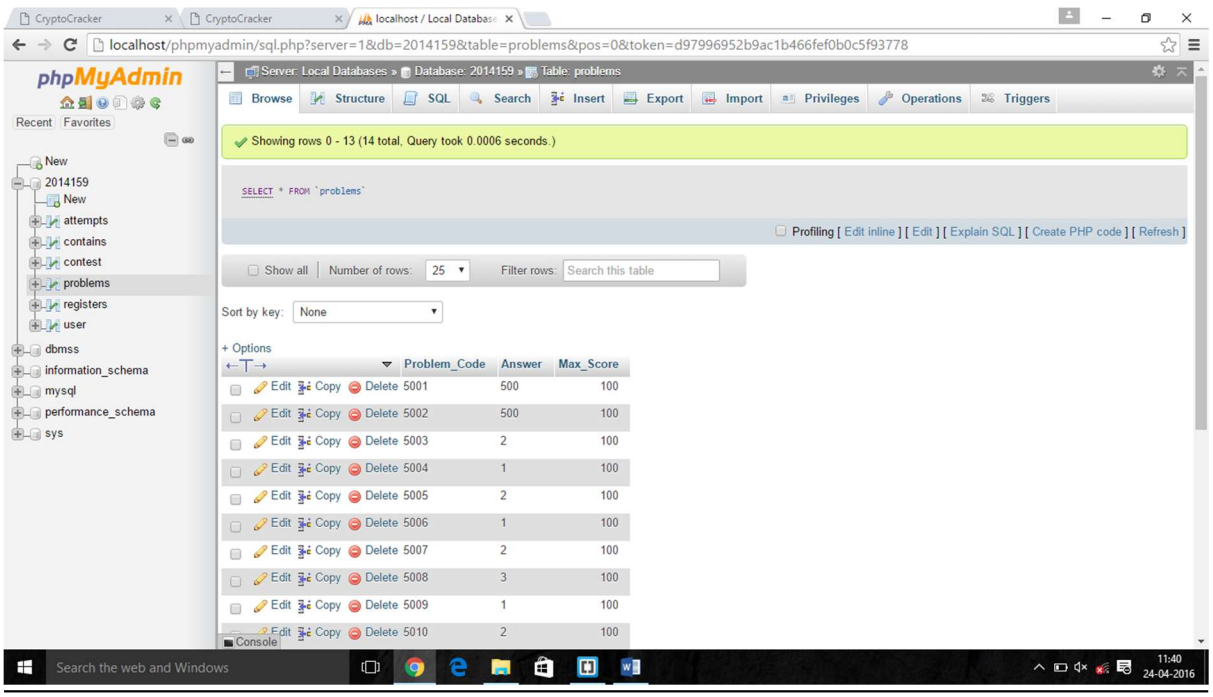
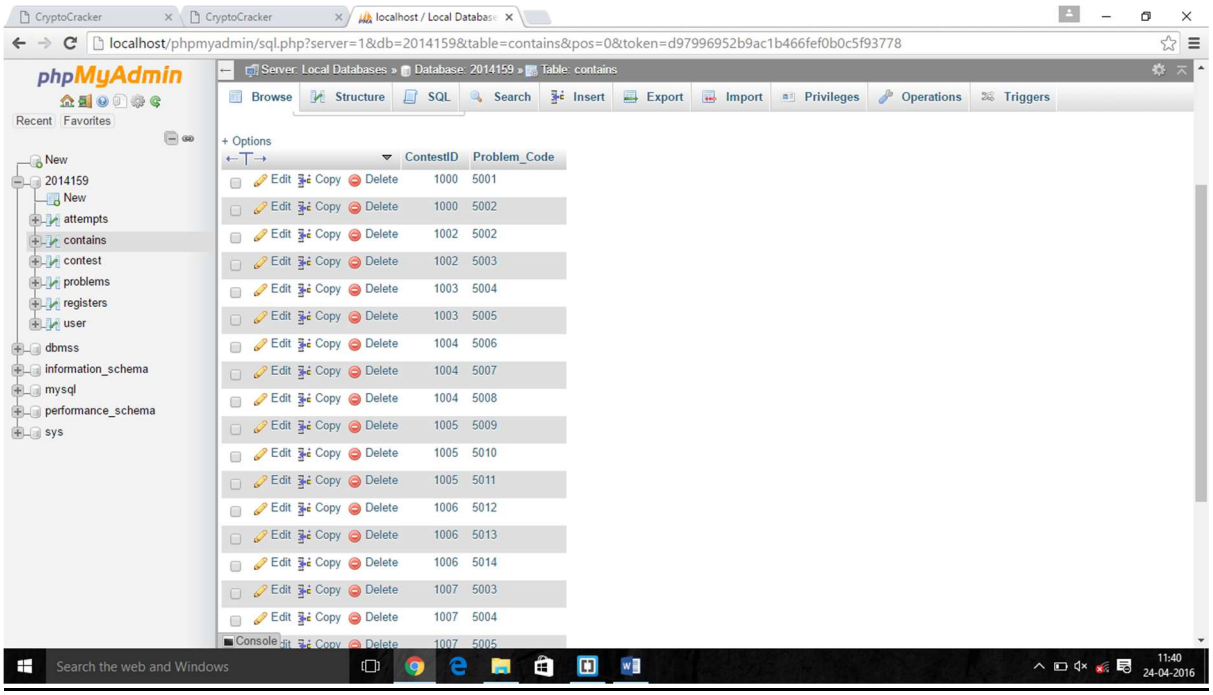
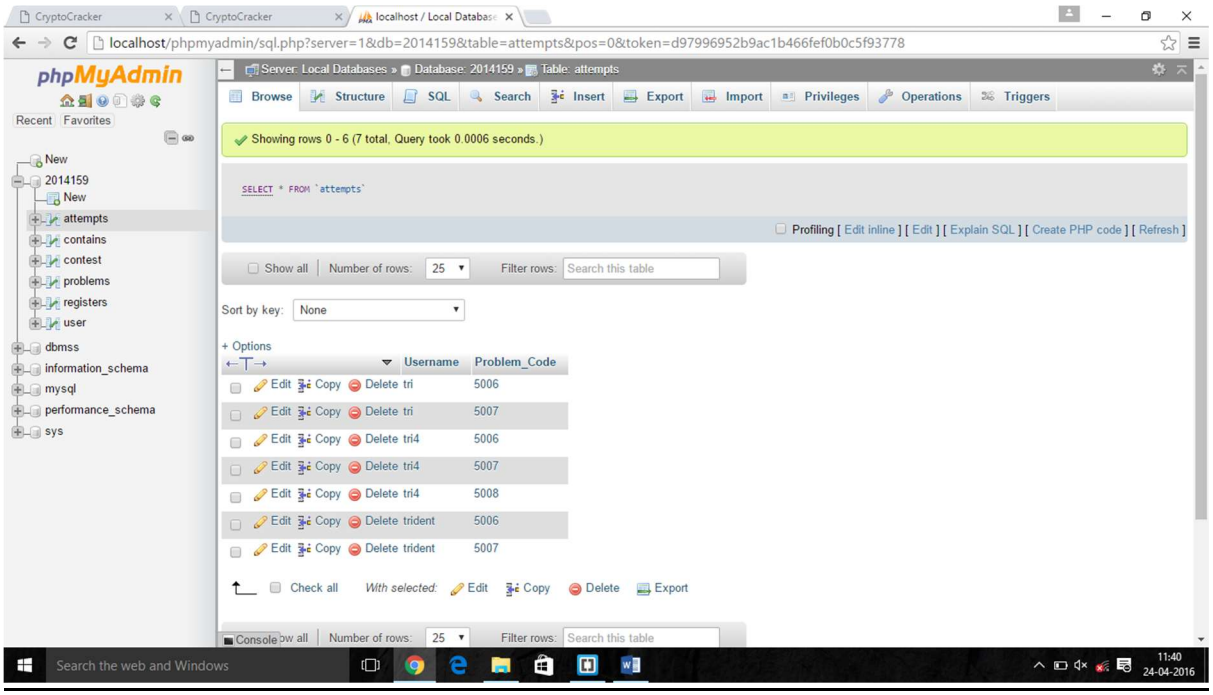
Search the web and Windows
11:39
24-04-2016


CryptoCracker
CryptoCracker
localhost / Local Database
localhost/phpmyadmin/sql.php?server=1&db=2014159&table=problems&pos=0&token=d97996952b9ac1b466fef0b0c5f93778
phpMyAdmin
Recent Favorites
New
2014159
New
attempts
contains
contest
problems
registers
user
dbmss
information_schema
mysql
performance_schema
sys
Server: Local Databases » Database: 2014159 » Table: problems
Browse Structure SQL Search Insert Export Import Privileges Operations Triggers
Showing rows 0 - 13 (14 total, Query took 0.0006 seconds.)
SELECT * FROM `problems`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all Number of rows: 25 Filter rows: Search this table
Sort by key: None
+ Options
Problem_Code Answer Max_Score
Edit Copy Delete 5001 500 100
Edit Copy Delete 5002 500 100
Edit Copy Delete 5003 2 100
Edit Copy Delete 5004 1 100
Edit Copy Delete 5005 2 100
Edit Copy Delete 5006 1 100
Edit Copy Delete 5007 2 100
Edit Copy Delete 5008 3 100
Edit Copy Delete 5009 1 100
Edit Copy Delete 5010 2 100
Console
Search the web and Windows
11:40
24-04-2016





Future Aspects

Since our portal will be used to organize a contest then it should be very secure from hackers and other injection attacks. Right now we have tried to block access to all the pages without authentication, but we have not completely blocked the SQL injection attacks. This will be our future goal to improve the project.

To organize events with program submission we have to integrate compiler of common languages in our portal so that apart from quizzes and objective contests we can also host programming challenges for practice and development. Then portal can be used for practicing programming and hosting similar challenges.

We will also provide a profile page so that users can connect to each other and it will become easier to maintain a record of all their achievements in a single option. We hope that this part will be completed as soon as possible.

Conclusion

We created a project that our college clubs can use to organize contests in a very easy and versatile manner. We have created the database by keeping model of the contest in mind. During the project making we learnt a lot of database management and system concepts along with various front end and back end technologies.

In conclusion, a database is a far more efficient mechanism to store and organize data than printouts or paper work. It allows a centralized facility that can easily be modified and quickly shared among multiple users. Having a web based front end removes the requirement of users having to understand and use a database directly, and allows users to connect from anywhere with an internet connection and a basic web browser

References

1. www.hackerearth.com , www.hackerrank.com for understanding features involved in a contest
2. www.w3schools.com for learning various web technologies
3. www.materialize.css for using the css library
4. Database System Concepts – A book by Korth for learning basic concepts involved in a database and formation of ER Model