A

Mini Project

On

CODING CONTESTS DETECTION USING CLIST API

(Submitted in partial fulfillment of the requirements for the award of Degree)

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

By

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Under the Guidance of

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2019-2023

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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CERTIFICATE

This is to certify that the project entitled **"CODING CONTESTS DETECTION USING CLIST API"** being submitted by **ANKIT PATEL(197R1A05J5)** in partial fulfillment of the requirements for the award of the degree of B.Tech in Computer Science and Engineering to the CMR Technical Campus, is a record of bonafide work carried out by him under our guidance and supervision during the year 2022-2023.

The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

A. Kiran Kumar
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Submitted for viva voice Examination held on _________________

ACKNOWLEDGEMENT

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ANKIT PATEL (197R1A05J5)

ABSTRACT

We always miss coding contests now and then, it feels bad to miss a contest when your placement season is coming and you want to be prepared. We always wonder if there could be any website/app that shows all platforms contests in one place so we could never miss a coding contest.

There are many coding platforms nowadays and as we want to practice more and more we join in all the contests running on the various platforms. Coding contests on various platforms is at different time and for that, we need to check all coding platforms, again and again, to know when the contest is there, this waste a lot of time. Due to this, we miss a lot of contests as we are not aware of when and on which platform contest is going on. This comes as a hurdle when we are preparing and practicing for our college placement.

So, I proposed a website coding contests detection using cList api Which tracks all the coding platform contests. So, never miss another coding contests from now. This will track all the past contests, present contests, and ongoing contests of all the coding platforms. This helps to see all the contests from coding platforms such as Hackerrank, HackerEarth, Codeforce, Codechef, Leetcode, Atcoder, and many more coding platforms.

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1. INTRODUCTION

1. INTRODUCTION

1.1 PROJECT SCOPE

This project is titled “Coding Contests detection using clist api”. We always miss coding contests now and then, it feels bad to miss a contest when your placement season is coming and you want to be prepared. We always wonder if there Could be any website/app that shows all platform contests in one place so we would never miss a coding contest again.

1.2 PROJECT PURPOSE

This website coding contests detection using cList api which tracks all the coding platform contests. So, never miss another coding contest from now. This will track all the past contests, present contests, and ongoing contests of all the coding platforms. This helps to see all the contests of coding platforms such as Hackerrank, HackerEarth, Codeforce, Codechef, Leetcode, At coder, and many more coding platforms at one place.

1.3 PROJECT FEATURES

The main features of this project are we can keep track of all the coding contests going on various coding platforms. The 3 types of contests are split across 3 different routes. Each of them is different color coded for better user understanding. Each contest has a link with which you can directly visit the specific programming site. This gives an extra advantage of finding all the contests which are running on different coding platforms. Thus it reduces a lot of manual effort in searching for contests on these websites. This helps a lot of students while they are preparing for their placement and they will not miss any coding contests.

2. SYSTEM ANALYSIS

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SYSTEM ANALYSIS

System Analysis is the important phase in the system development process. The System is studied to the minute details and analyzed. The system analyst plays an important role of an interrogator and dwells deep into the working of the present system. In analysis, a detailed study of these operations performed by the system and their relationships within and outside the system is done. A key question considered here is, “what must be done to solve the problem?” The system is viewed as a whole and the inputs to the system are identified. Once analysis is completed the analyst hasa firm understanding of what is to be done.

2.1 PROBLEM DEFINITION

A general statement of coding contests detection using clist api is based on a real-life problem of a student who is preparing for placaments. During placement, students forget to give contests, which leads to effects in their placement preparation. To avoid this, I proposed this project.

2.2 EXISTING SYSTEM

There are many coding platforms nowadays and we want to practice more and more we join in all the contests running on the various platforms. Coding contests on various platforms is at different time and for that, we need to check all coding platforms, again and again, to know when the contest is there, this waste a lot of time. Due to this, we miss a lot of contests as we are not aware of when and on which platform contest is going on. This comes as a hurdle when we are preparing and practicing for our college placement.

2.2.1 DISADVANTAGES OF EXISTING SYSTEM

- There is no such proper platform to keep track of all coding contests.
- We need to visit each site to check the contest timing which wastes our time.
- We always miss a contest because we are not aware of that contest's timing

To avoid all these limitations and make the work more accurate the system needs to be implemented efficiently.

2.3 PROPOSED SYSTEM

I propose a site where we can keep track of all the coding contests going on various coding platforms. The 3 types of contests are split across 3 different routes. Each of them is different color coded for better user understanding. Each contest has a link with which you can directly visit the specific programming site. This gives an extra advantage of finding all the contests which are running on different coding platforms. Thus it reduces a lot of manual effort in searching for contests on these websites. This helps a lot of students while they are preparing for their placement and they will not miss any coding contests.

2.3.1 ADVANTAGES OF THE PROPOSED SYSTEM

- All coding platform contests details in a single place.
- No time-consuming process of visiting all coding platforms again and again.
- Get all the updates of upcoming, live, and past coding contests.
- Add the upcoming contest to your calendar and get a notification when the contest is live.

2.4 FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and a business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. Three key considerations involved in the feasibility analysis:

- EconomicFeasibility
- TechnicalFeasibility
- SocialFeasibility

2.4.1 ECONOMIC FEASIBILITY

The developing system must be justified by cost and benefit. Criteria to ensure that effort is concentrated on a project, which will give best, return at the earliest. One of the factors, which affect the development of a new system, is the cost it would require.

The following are some of the important financial questions asked during preliminaryinvestigation:

- The costs conduct a full system investigation.
- The cost of the hardware and software.
- The benefits in the form of reduced costs or fewer costly errors.

Since the system is developed as part of project work, there is no manual cost to spend for the proposed system. Also all the resources are already available, it give an indication that the system is economically possible for development.

2.4.2 TECHNICAL FEASIBILITY

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

2.4.3 BEHAVIORAL FEASIBILITY

This includes the following questions:

- Is there sufficient support for the users?
- Will the proposed system cause harm?

The project would be beneficial because it satisfies the objectives when developed and installed. All behavioral aspects are considered carefully and conclude that the project is behaviorally feasible

2.5 HARDWARE & SOFTWARE REQUIREMENTS

2.5.1 HARDWARE REQUIREMENTS:

Hardware interfaces specify the logical characteristics of each interface between the software product and the hardware components of the system. The following are some hardware requirements.

• Processor	: Intel Dual Core I5
• Hard disk	: 40GB
• RAM	: 4GB
• Input devices	: Keyboard, mouse.

2.5.2 SOFTWARE REQUIREMENTS:

Software Requirements specifies the logical characteristics of each interface and software components of the system. The following are some software requirements,

• Operating system	: Windows 10
• Languages	: Html, CSS, Html, CSS, JS, ReactJS
• Tools	: VS Code Editor, Chrome Browser

3. ARCHITECTURE

3. ARCHITECTURE

3.1 PROJECT ARCHITECTURE

This project architecture shows the procedure followed for classification, starting from input to final prediction.

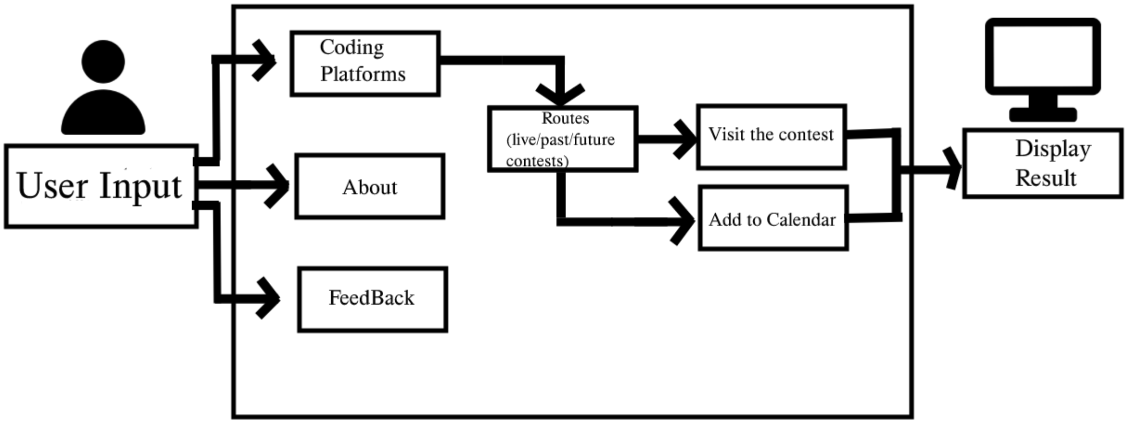


Figure 3.1: Architecture of Coding Contests detection using clist api

3.2 DESCRIPTION

So, I proposed a website coding contests detection using cList api which tracks all the coding platform contests. So, never miss another coding contest from now. This will track all the past contests, present contests, and ongoing contests of all the coding platforms. This helps to see all the coding platforms such as Hackerrank, HackerEarth, Codeforce, Codechef, Leetcode, At coder, and many more coding platforms in one place.

3.3 USE CASE DIAGRAM

In the use case diagram, we have basically one actor who is the user in the trained model.

A use case diagram is a graphical depiction of a user's possible interactions with a system. A use case diagram shows various use cases and different types of usersthe system has. The use cases are represented by either circles or ellipses. The actors are often shown as stick figures.

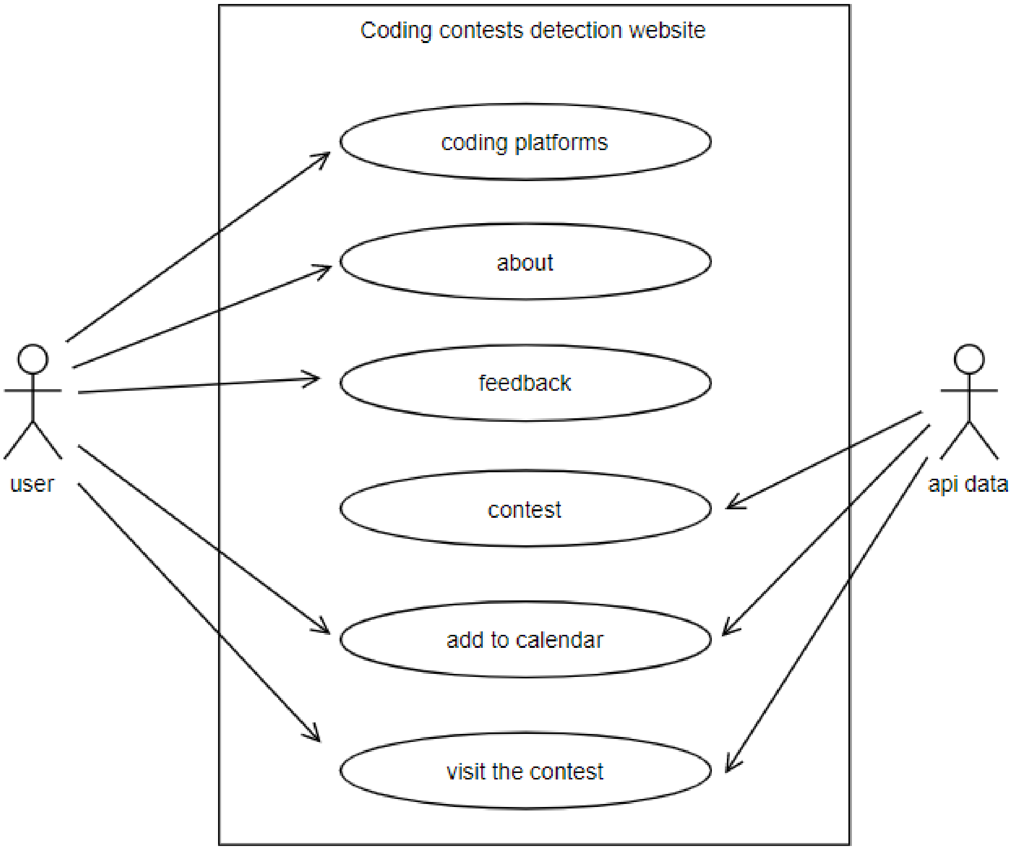


Figure 3.2: Use Case Diagram of coding contests detection using clist api

3.4 CLASS DIAGRAM

Class diagram is a type of static structure diagram that describes the structureof a system by showing the system’s classes, their attributes, operations(or methods), and the relationships among objects.

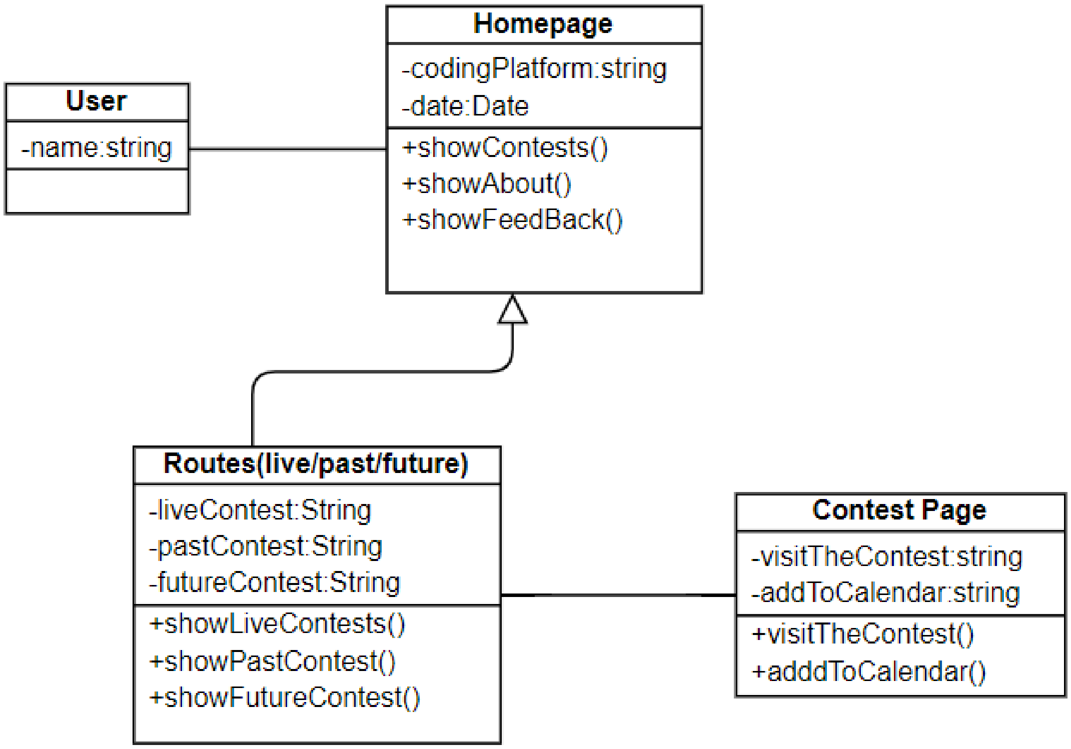


Figure 3.3: Class Diagram of coding contests detection using clist api

3.5 SEQUENCE DIAGRAM

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the logical view of the system under development.

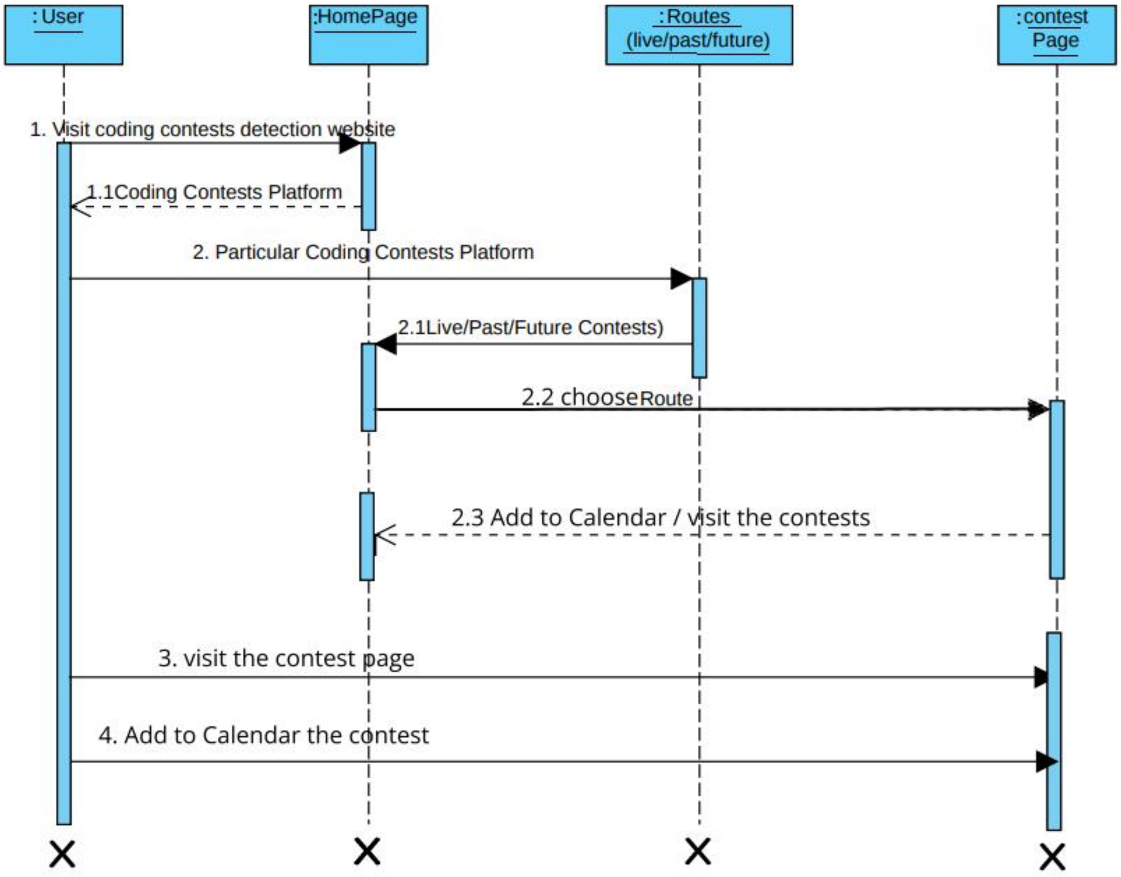

: User
:HomePage
: Routes (live/past/future)
:contest Page
1. Visit coding contests detection website
1.1Coding Contests Platform
2. Particular Coding Contests Platform
2.1Live/Past/Future Contests)
2.2 chooseRoute
2.3 Add to Calendar / visit the contests
3. visit the contest page
4. Add to Calendar the contest

Figure 3.4: Sequence Diagram of coding contests detection using clist api

3.6 ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. They can also include elements showing the flow of data between activities through one or more data stores.

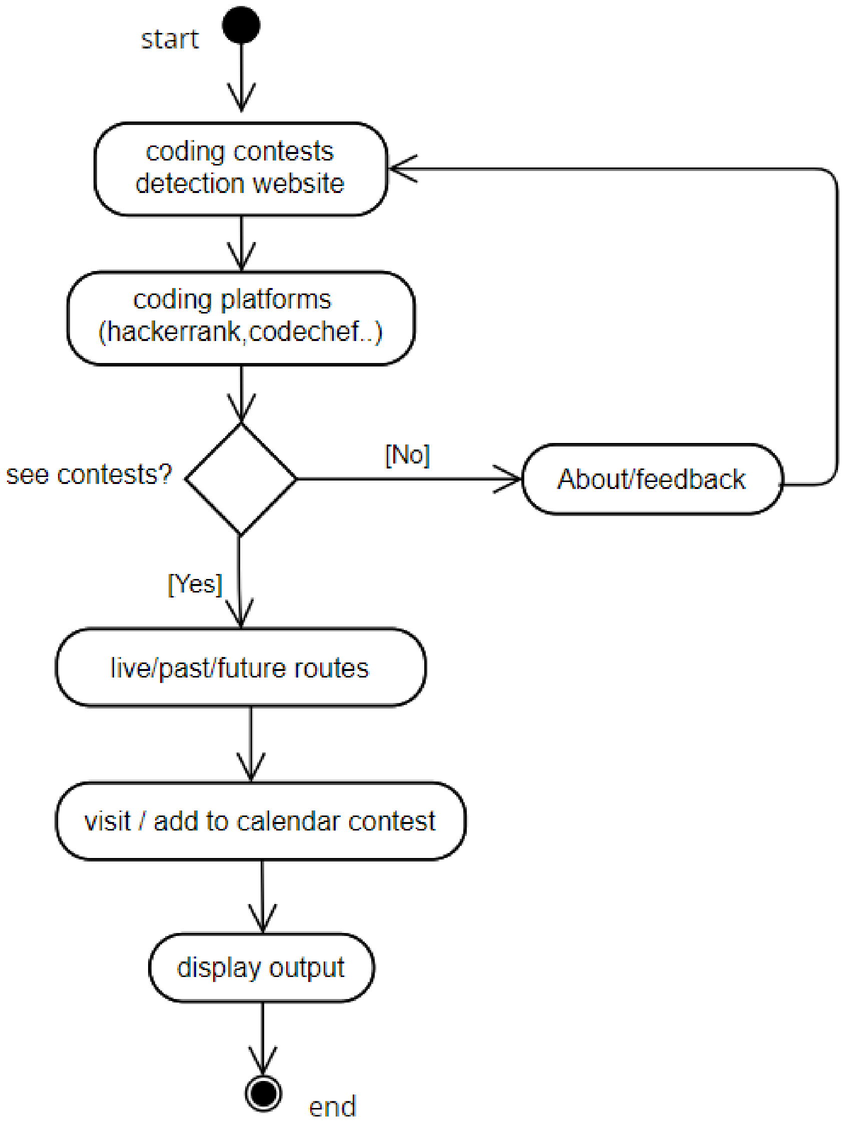

start
coding contests detection website
coding platforms (hackerrank,codechef..)
see contests?
[No]
About/feedback
[Yes]
live/past/future routes
visit / add to calendar contest
display output
end

Figure 3.5: Activity Diagram of coding contests detection using clist api

4. IMPLEMENTATION

4. IMPLEMENTATION

4.1 SAMPLE CODE

App.js

```
import './App.css';
import Home from './components/Home';
import Navbar from './components/Navbar';
import Contest from "./components/Contest"

// import useFetch from "react-fetch-hook"
import {BrowserRouter as Router ,Routes,Route} from "react-router-dom"
function App() {
    return (
      <Router>
        <Navbar/>
        <Routes>
        <Route>
          <Route path="/" element={<Home/>}></Route>
          <Route path="/about" element={<About/>}></Route>
          <Route path="/feedback" element={<Contact/>}></Route>
          <Route path="/:contestname" element={<Contest/>}></Route>
        </Route>
        </Routes>
      </Router>
  );
}
export default App;
```

Data.js

```
export const platformList = [
  {
    id: "1",
    name: "codeforces",
    link:"codeforces",
    url:"https://res.cloudinary.com/practicaldev/image/fetch/s--. jpg",
  },
  {
    id: "2",
    name: "codechef",
    link:"code_chef",
    url:"https://pbs.twimg.com/profile_images/1477930785537605633/ROTVNVz7_400x400.jpg"
  },
  {
    id: "3",
    name: "Leetcode",
    link:"leet_code",
    url:"https://leetcode.com/static/images/LeetCode_Sharing.png"
  },
  {
    id: "4",
    name: "HackerRank",
    link:"hacker_rank",
    url:"https://upload.wikimedia.org/wikipedia/commons/4/40/HackerRank_Icon-1000px.png"
  },
 ];
```

Contests.js

```
import React,{useState,useEffect} from 'react'
import {useParams} from "react-router";
import Card from './Card';
function Contest() {
    const {contestname} = useParams();
    const [contestData, setContestData] = useState([]);
    const [cData, setCData] = useState([]);
     return (
    <div className='contestnames'>
      <div className='nav2'>{contestname}</div>
      <div className='head'>
        <a href='#in-24-hours' onClick={()=>handlepastClick("Yes")}>
           in 24 hours
        </a>
        <a href='#live' onClick={()=>handleliveClick("CODING")}>
        live
        </a>
        <a href='#future' onClick={()=>handlefutureClick("BEFORE")}>
        future
        </a>
        </div>
        {(cData.length==0)?<EmptyList/>:<Card cData={cData} val={val}/>}
    </div>
  )
}

export default Contest
```

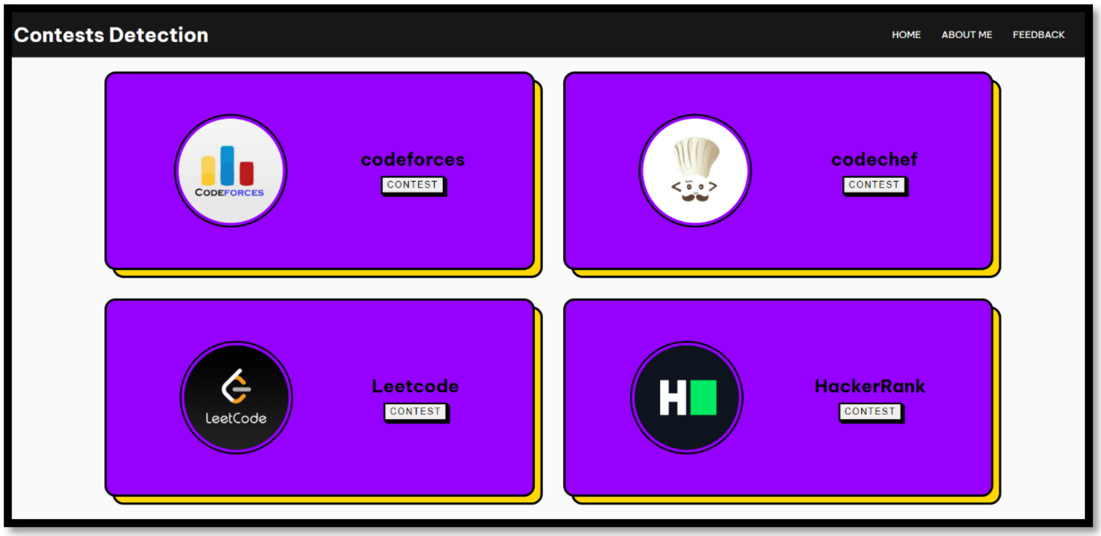
Cards.js

```
import React, { useEffect } from 'react'
import "./card.css"
import { atcb_action, atcb_init } from 'add-to-calendar-button';
function Card({cData,val}) {
  const changeName = e => {
    setName(e.target.value);
  };
  useEffect(()=>{
    setInterval(showDate,1000);
  },[diftime]);
  const showDate=()=>{
    setDifTime(new Date());
  }
  return (
    <div className='card'>
    {
        cData.map((item)=>
        <div className='card-child'>
          <h1 className='item-name'> <b>{item.name.toUpperCase()}</b></h1>
          <h1 className='duration'> <b>Duration :</b> {item.duration/60}mins</h1>
                      <h1 className='start-date'> <b>Start Date: </b>{`${new
            Date(item.start_time).toLocaleString()}`}</h1>
                      <h1 className='end-date'><b>End Date: </b> {`${new
            Date(item.end_time).toLocaleString()}`}</h1> <br/>
```

5. RESULTS

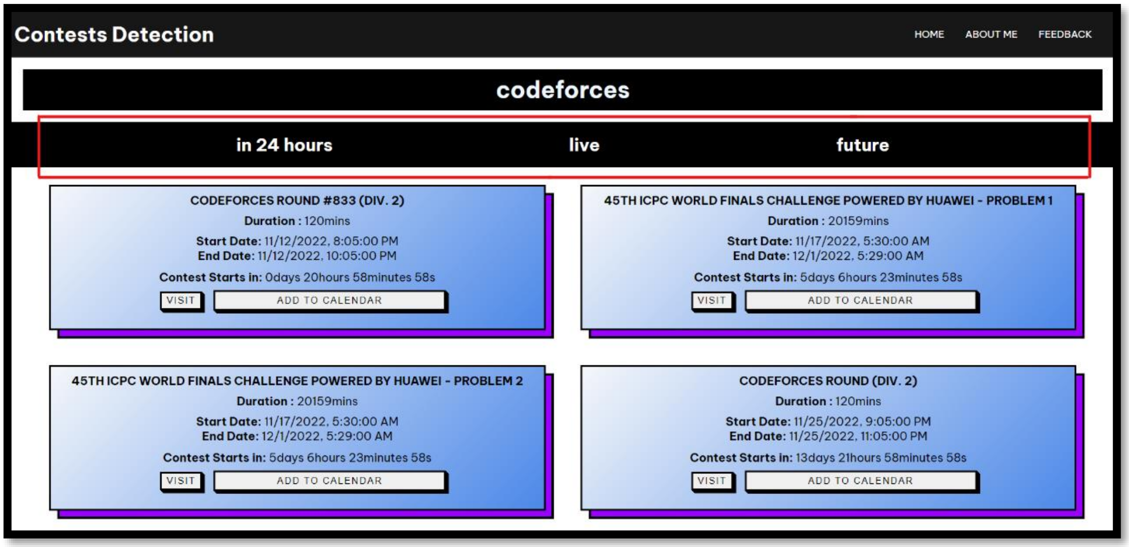
5. RESULTS

5.1 Coding Contests Detection Website



Screenshot 5.1: Coding Contests Detection Website

5.2 Three routes live, past, future contests



CODEFORCES ROUND #833 (DIV. 2)
Duration : 120mins
Start Date: 11/12/2022, 8:05:00 PM
End Date: 11/12/2022, 10:05:00 PM
Contest Starts in: 0days 20hours 58minutes 58s

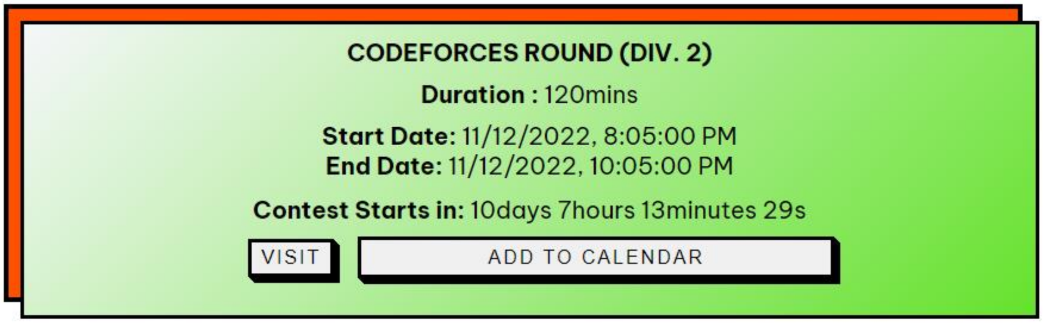
45TH ICPC WORLD FINALS CHALLENGE POWERED BY HUAWEI - PROBLEM 1
Duration : 20159mins
Start Date: 11/17/2022, 5:30:00 AM
End Date: 12/1/2022, 5:29:00 AM
Contest Starts in: 5days 6hours 23minutes 58s

45TH ICPC WORLD FINALS CHALLENGE POWERED BY HUAWEI - PROBLEM 2
Duration : 20159mins
Start Date: 11/17/2022, 5:30:00 AM
End Date: 12/1/2022, 5:29:00 AM
Contest Starts in: 5days 6hours 23minutes 58s

CODEFORCES ROUND (DIV. 2)
Duration : 120mins
Start Date: 11/25/2022, 9:05:00 PM
End Date: 11/25/2022, 11:05:00 PM
Contest Starts in: 13days 21hours 58minutes 58s

Screenshot 5.2: Three routes live, past, future contests

5.3 Individual Contest card



CODEFORCES ROUND (DIV. 2)

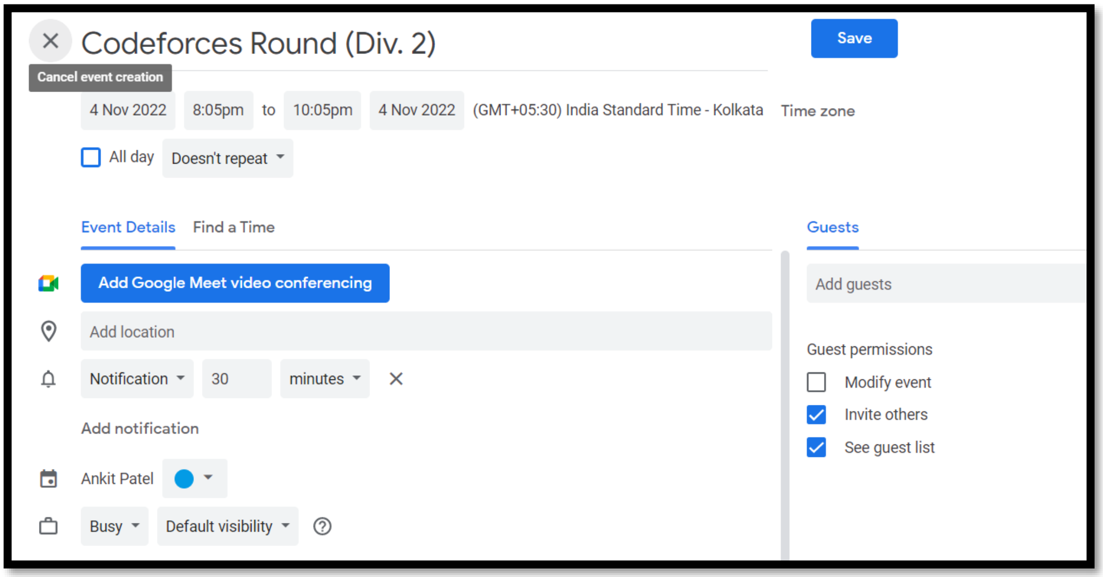
Duration : 120mins

Start Date: 11/12/2022, 8:05:00 PM
End Date: 11/12/2022, 10:05:00 PM

Contest Starts in: 10days 7hours 13minutes 29s

Screenshot 5.3: Individual Contest card

5.4 Add to calendar feature



Codeforces Round (Div. 2)

4 Nov 2022 8:05pm to 10:05pm 4 Nov 2022 (GMT+05:30) India Standard Time - Kolkata

□ All day Doesn't repeat

Notification 30 minutes

Ankit Patel ●

Busy Default visibility

Guest permissions

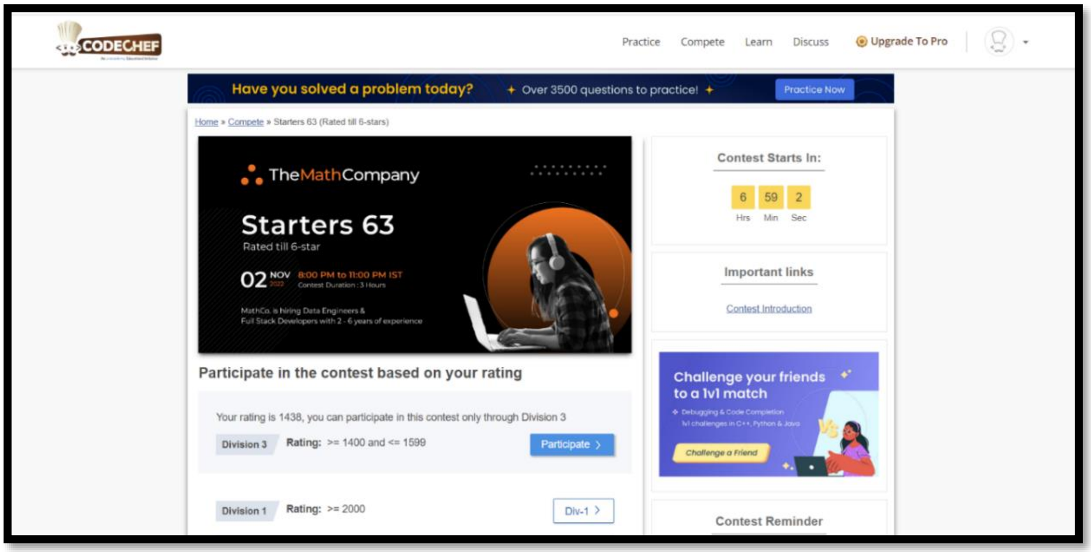
□ Modify event

☑ Invite others

☑ See guest list

Screenshot 5.4: add to calendar feature

5.5 Contest registration page


CODECHEF
Practice
Compete
Learn
Discuss
Upgrade To Pro
Have you solved a problem today?
Over 3500 questions to practice!
Practice Now
Home » Compete » Starters 63 (Rated till 6-stars)
TheMathCompany
Starters 63
Rated till 6-star
02 NOV 2022
8:00 PM to 11:00 PM IST
Contest Duration : 3 Hours
MathCo. is hiring Data Engineers &
Full Stack Developers with 2 - 6 years of experience
Contest Starts In:
6 Hrs
59 Min
2 Sec
Important links
Contest Introduction
Challenge your friends to a 1v1 match
Debugging & Code Completion
1v1 challenges in C++, Python & Java
Challenge a Friend
Contest Reminder

Participate in the contest based on your rating

Your rating is 1438, you can participate in this contest only through Division 3

Division 3 Rating: >= 1400 and <= 1599 Participate

Division 1 Rating: >= 2000 Div-1

Screenshot 5.5: contest registration page

6. TESTING

6. TESTING

6.1 INTRODUCTION TO TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, subassemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of tests. Each test type addresses a specific testing requirement.

6.2 TYPES OF TESTING

6.2.1 UNIT TESTING

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .It is done after the completion of an individual unit before integration. This is a structural testing that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component leveland test a specific business process, application and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

6.2.2 INTEGRATION TESTING

Integration tests are designed to test integrated software components to determine if they actually run as one program. Integration tests demonstrate that although the components were individually satisfactory, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

6.2.3 FUNCTIONAL TESTING

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.
Invalid Input : identified classes of invalid input must be rejected.
Functions : identified functions must be exercised.
Output : identified classes of application outputs must exercised.
Systems/Procedures: interfacing systems or procedures must be invoked.

Organizationand preparation of functional tests is focused on requirements, key functions, orspecial test cases.

6.3 TEST CASES

6.3.1 CLASSIFICATION

Test caseID	Test case name	Purpose	Input	Output
1	Fetching coding platforms	To detect coding platforms.	The user gives the input in the form of a pressing particular platform button.	An output is coding platforms details.
2	Fetching contests details	To detect Contest Details.	The user gives the input in form of selecting particular route.	An output is contests details.

7. CONCLUSION

7. CONCLUSION & FUTURE SCOPE

7.1 PROJECT CONCLUSION

The project CODING CONTESTS DETECTION USING CLIST API main purpose is to help students with their hustle of remembering the coding contests timing of various platforms. Using this website the students can able to save their time by knowing about all the coding contests in a single place. This project is made to save the time of students who are busy with their schedules and they miss their coding contests due to unawareness of contests timings. We all know the importance of coding contests when the placement is near. This will help them a lot and there will be fewer chances of missing any contests.

7.2 FUTURE SCOPE

In the future, I will add a separate database for each user. An individual user can add all contests he is interested in participating in, and he will get notification of all added contests with a single click. The users will get notifications as soon as any new contests are added to the website.

8. BIBLIOGRAPHY

8. BIBLIOGRAPHY

8.1 REFERENCES

[1] Sabuj Jana , “A Review Paper on Coding Contests Detection” Int. J. Adv. Res. Comput. Eng. Technol., vol. 1, no. 8, pp. 2278–1323, 2021

[2] The Road to React: Your journey to master React.js in JavaScript (2022 Edition) by Robin Wieruch.

[3] Fullstack React: The Complete Guide to ReactJS and Friends by Antony Accomazzo

8.2 GITHUB LINK

https://github.com/iawesomeankit/coding_contest_detection