



Daffodil International University

Project
On
“Java GUI Project”

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Daily Competitive Programming

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Overview

“Daily Competitive Programming” is a Desktop Application developed in Java Programming Language. Often Beginners in competitive programming face some problems to find their strategy to improve. Keeping track of our daily activity on competitive programming is the most important thing in this sector. So, I have come up with a plan to develop such a tracker with my present knowledge. It is a mini application with some tracking features.

Goals

- 1. Track Problem Solving:** It is designed specially for competitive programmers who want to keep track of their daily problem solving and coding activities.
- 2. Track Learning Progress:** Anyone can keep the daily learning activity on a track so that he/she will be able to see the progress done so far.
- 3. Feedback on Progress:** Users of the application will get timely feedback on their progress to not lose hope on Competitive Programming.

Specifications

Students like me will get a lot of benefits by using the system as well as building a beginner strategy. This is a mini project built with Java Swing (GUI), Object Oriented Concepts using Java Language.

Requirements

The requirements of the project “Daily Competitive Programming” are given below:

1. Unregistered Users can register on the system
2. Registered Users, Admin and Learner can log in to the system
3. Registered Solvers can set the daily problem solving target on the system
4. Registered Solvers can add the total number of solved problems daily to the system
5. Registered Solvers can view the list of the daily solving percentages according to the daily target on the system.
6. Registered Solvers can view the number of total solved problems.
7. Registered Solvers can view the list of daily feedback according to the percentage.
8. Registered Solvers can give feedback about the system
9. Learners can add new programming topics that he/she learned
10. Learners can view the topics that he/she learned.
11. Admin can see the list of all system users
12. Admin can view feedback about the system.

Objects

1. Problem Solver
2. Learner
3. Admin

States and Behaviors of Object

1. Object - Problem Solver:

- **State:**
 - i. Username
 - ii. Password
 - iii. Daily Problem Solving Target
- **Behavior:**
 - a) Registered Solvers can login to the system.
 - b) Unregistered Solvers can register to the system.
 - c) Registered Solvers can insert the daily problem solving target on the system.
 - d) Registered Solvers can add the number of solved problems daily to the system.
 - e) Registered Solvers can view the daily solving percentage according to the daily target on the system.
 - f) Registered Solvers can view the number of total solved problems.
 - g) Registered Solvers can view the list of daily feedback according to the percentage.
 - h) Registered Solvers can give feedback about the system.

2. Object - Learner:

- **State:**
 - i. Username
 - ii. Programming Language
- **Behavior:**
 - a) Learners can add new programming topics that he/she learned.
 - b) Learners can view the topics that he/she learned.

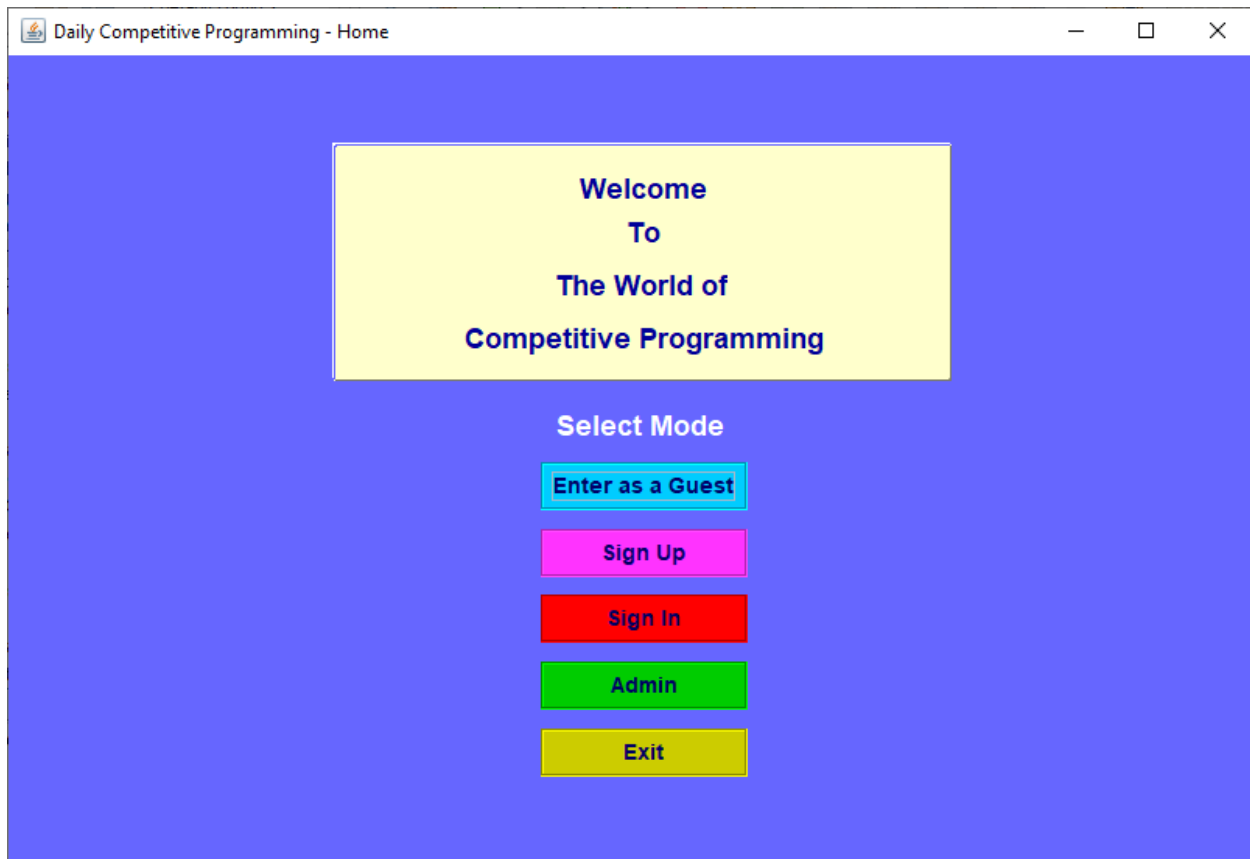
3. Object - Admin:

- **State:**
 - i. Username
 - ii. Password
- **Behavior:**
 - a) Admin can view feedback about the system.
 - b) Admin can see the list of all system users.

Project's Procedure

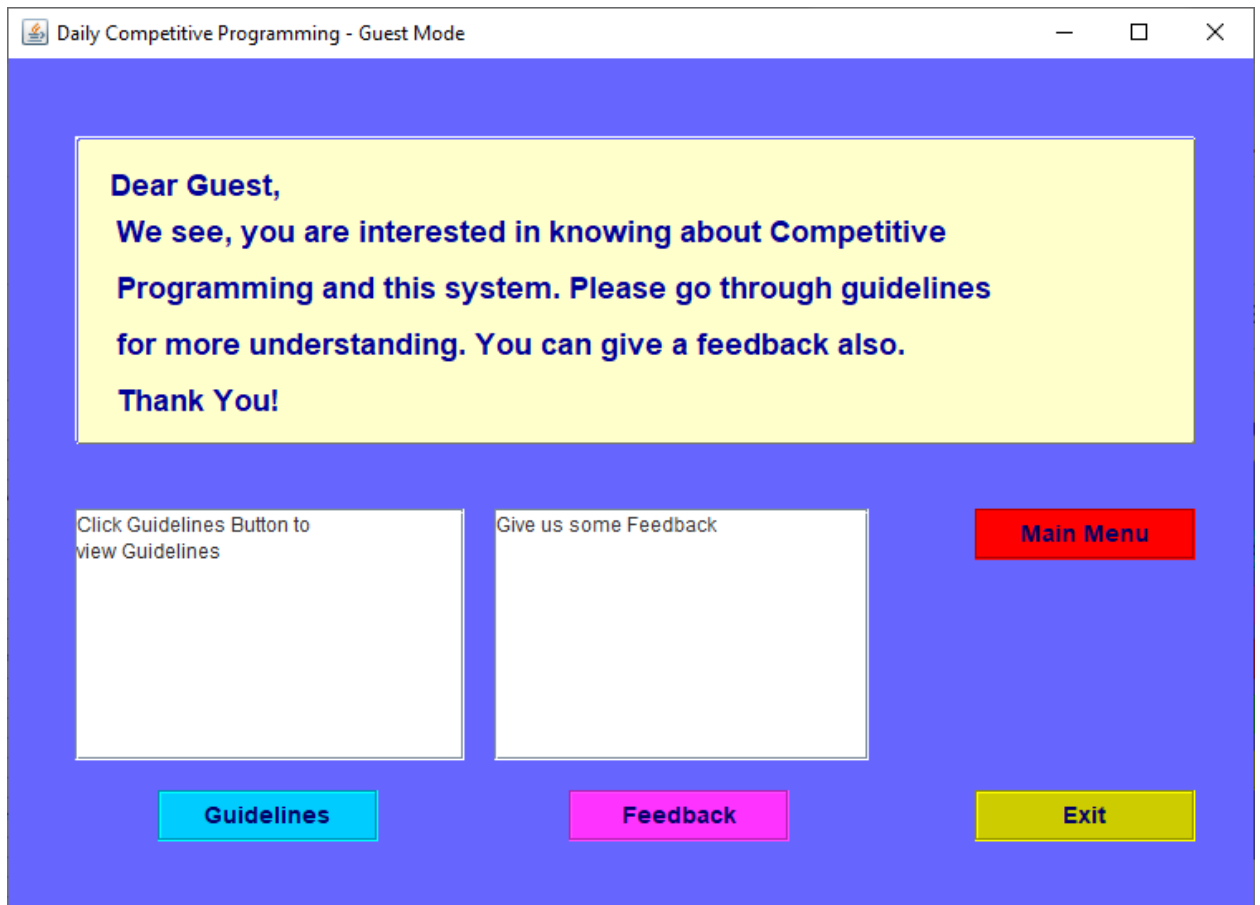
This is a simple project. Only one person from one device can save their record in this system. If they sign up again the previous record will simply vanish away. This is just a mini project. I will try to update it further with my knowledge.

Home

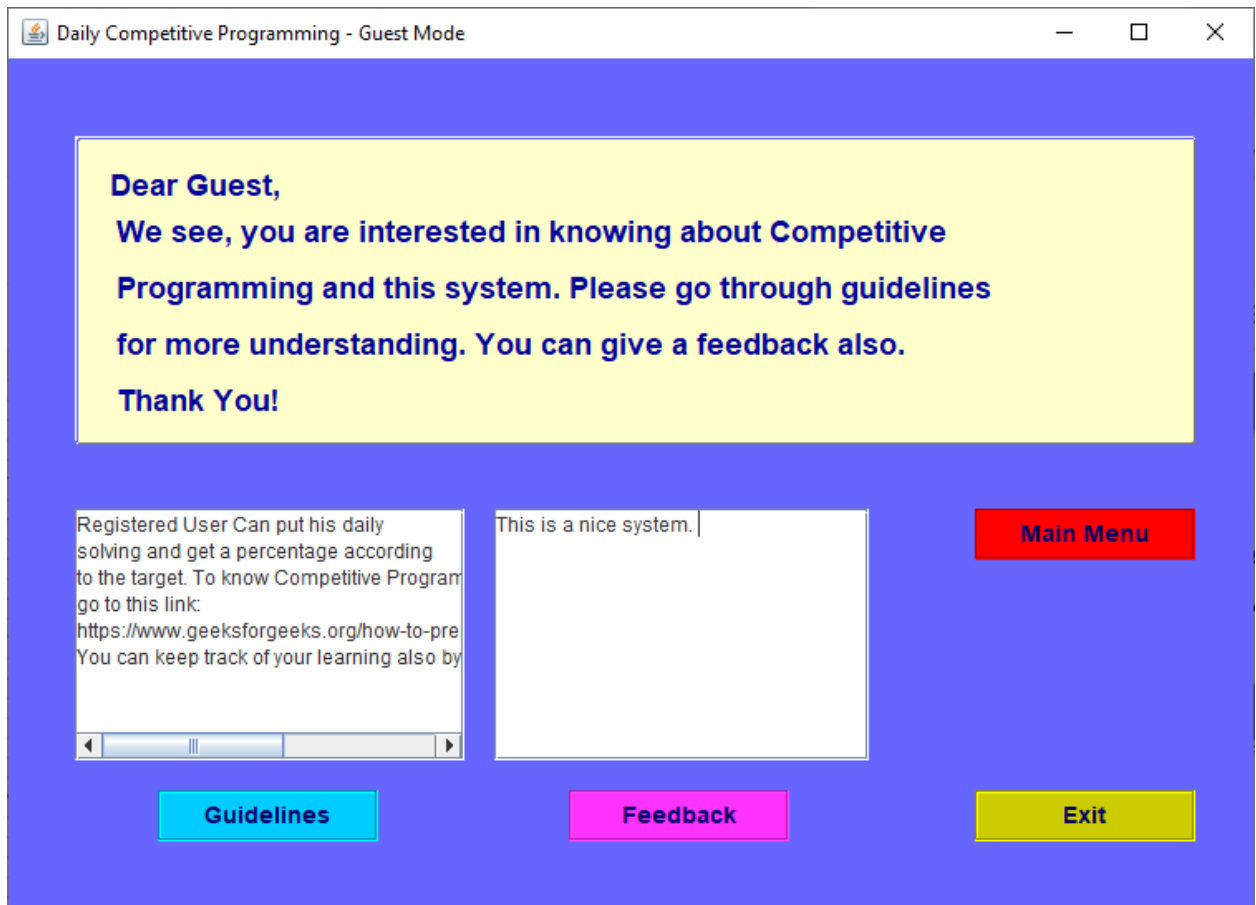


This is the Home screen of the Daily Competitive Programming System. Users can select their desired mode.

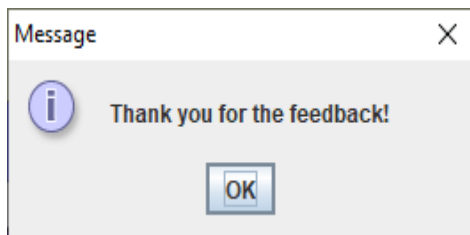
- **Guest Mode:** If a user doesn't want to sign up yet but wants to know some details of the system and its use, then he/she can select this mode. After selecting this mode the following screen will appear.



In the guidelines mode we can see guidelines like the given screenshot below. We can also give feedback about the system.

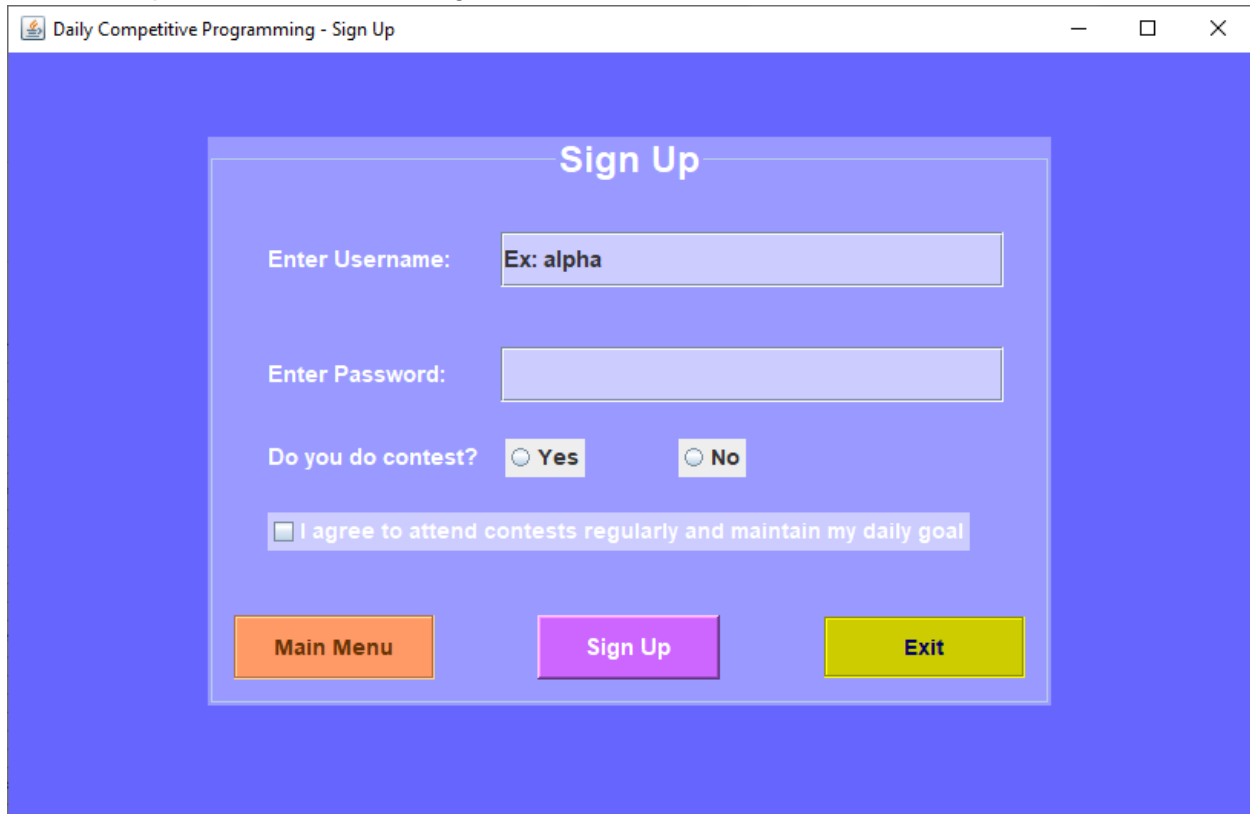


Now if we submit the feedback a message will show like the given screenshot below:



If the guest wants to go back to the main menu, he/she can press the button “main menu”.
If he wants to exit then press the exit button.

- **Sign Up:** Now if the user wants to use the system as a Solver and enjoy the features, he/she has to sign up from the main menu. If the user already has an account remember the previous record will be gone.



The screenshot shows a window titled "Daily Competitive Programming - Sign Up". The window contains a "Sign Up" form with the following elements:

- Enter Username:** A text input field with a placeholder "Ex: alpha".
- Enter Password:** A text input field.
- Do you do contest?** Two radio buttons labeled "Yes" and "No".
- ☐ **I agree to attend contests regularly and maintain my daily goal**
- At the bottom, there are three buttons: "Main Menu" (orange), "Sign Up" (purple), and "Exit" (yellow).

This is the sign up form. Here the solver can enter a username with more than 4 characters and a password with more than 6 characters. Otherwise it won't register. The solver has to have previous experience in the contest. If the solver presses no, the sign up won't process. That's not all, If the solver doesn't check the condition he won't be able to sign up. He has to agree with the condition to attend contests and maintain the goal. So the sign up procedure will be like below:

Daily Competitive Programming - Sign Up

Sign Up

Enter Username: AlphaCaspian

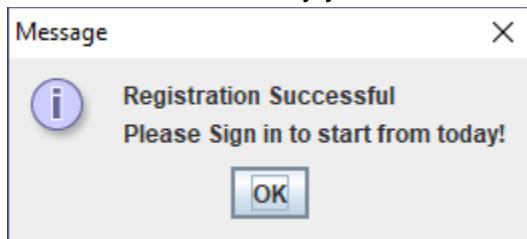
Enter Password: *****

Do you do contest? ☒ Yes ☐ No

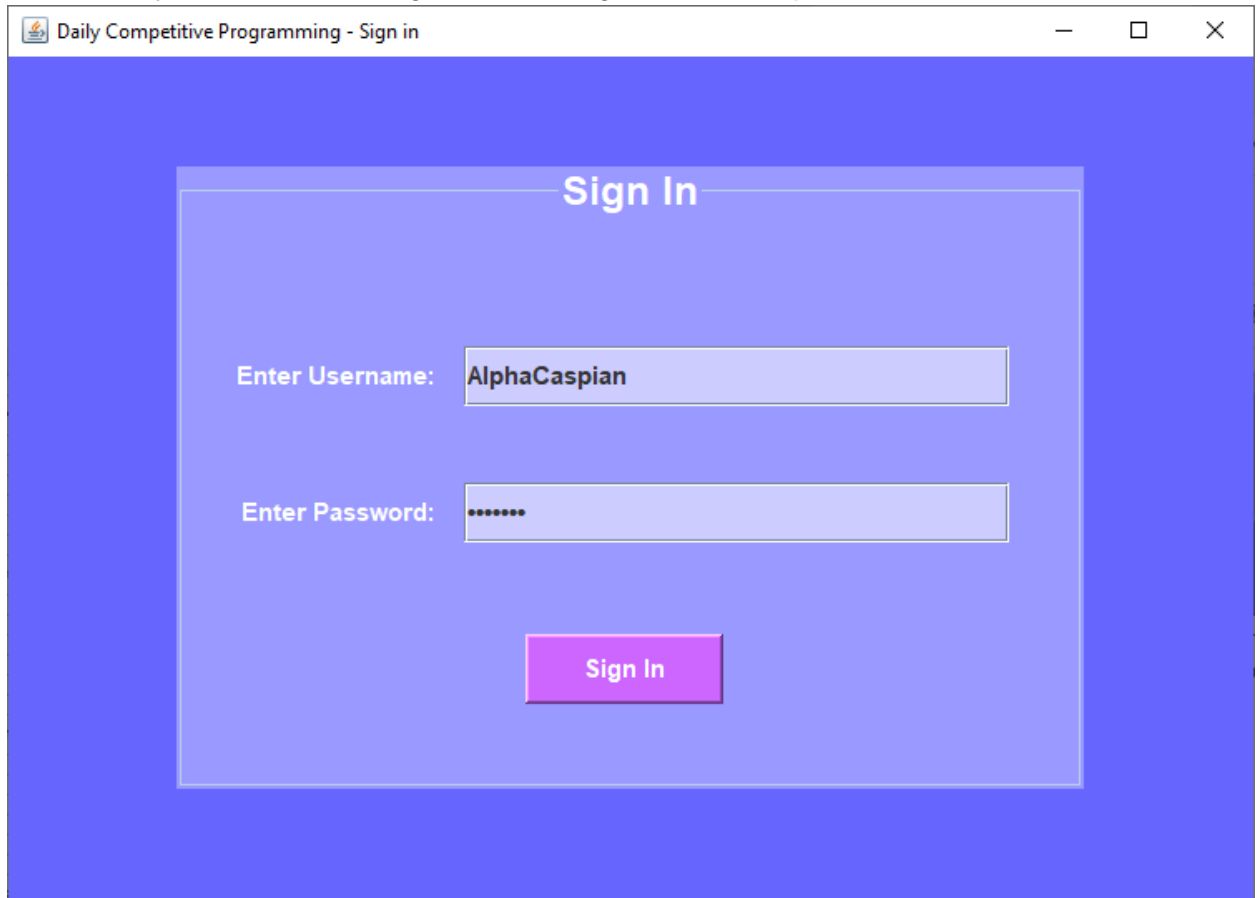
☒ I agree to attend contests regularly and maintain my daily goal

Main Menu Sign Up Exit

After giving every detail like above the solver can sign up, the window will appear like below. Also if the solver is not ready yet he can choose to go to the main menu or exit from the system.

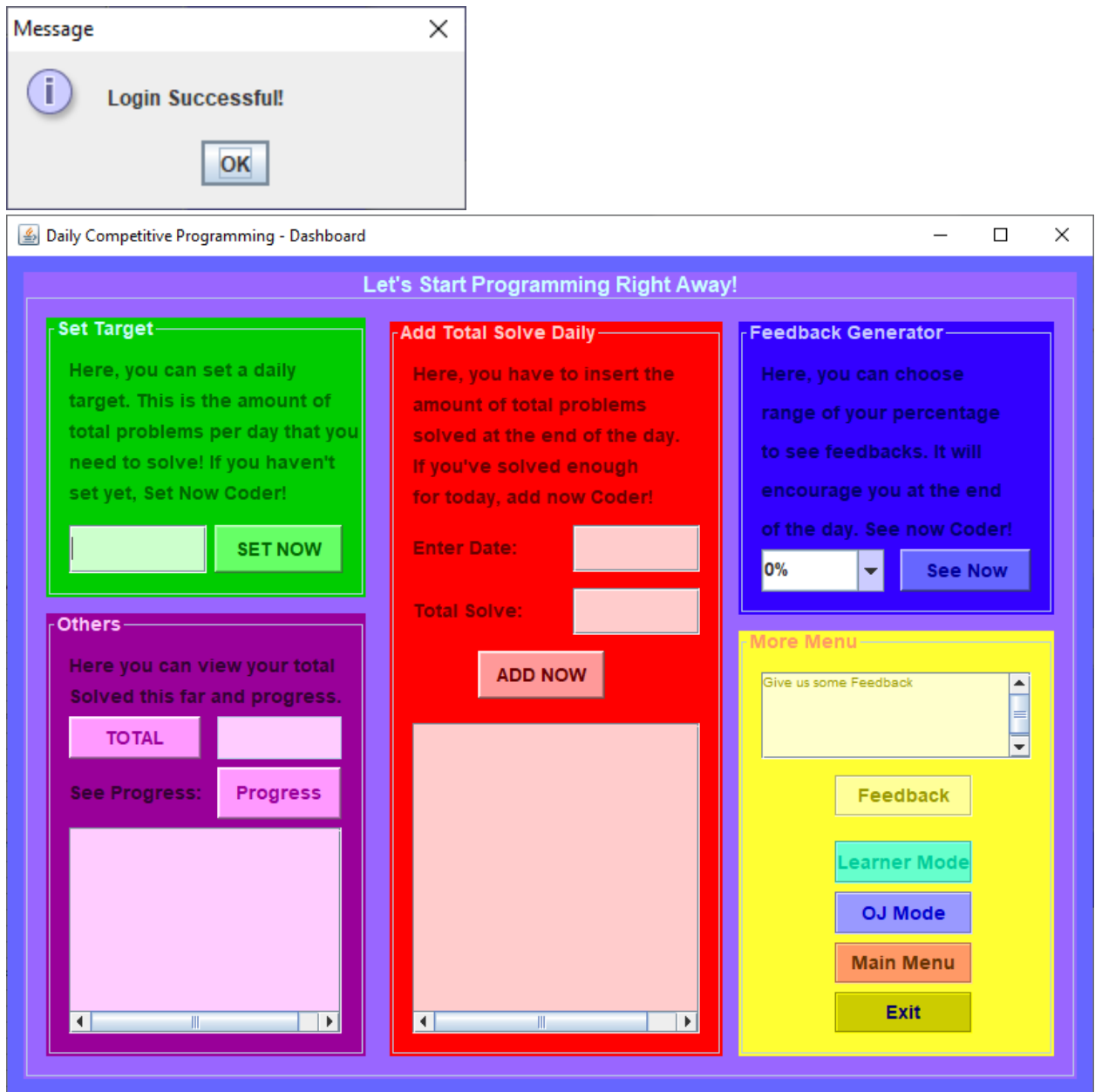


- **Sign In:** A registered solver can sign in to see the main tracker sheet. After pressing the sign in button from the main menu, the solver has to give the details to access the features inside the system. If the solver gives the wrong username or password he can't access it.



The screenshot shows a web application window titled "Daily Competitive Programming - Sign in". The window has a blue background. In the center, there is a white rectangular box with a thin border. Inside this box, the text "Sign In" is displayed at the top. Below it, there are two input fields. The first field is labeled "Enter Username:" and contains the text "AlphaCaspian". The second field is labeled "Enter Password:" and contains masked characters ".....". Below these fields, there is a blue button with the text "Sign In" in white.

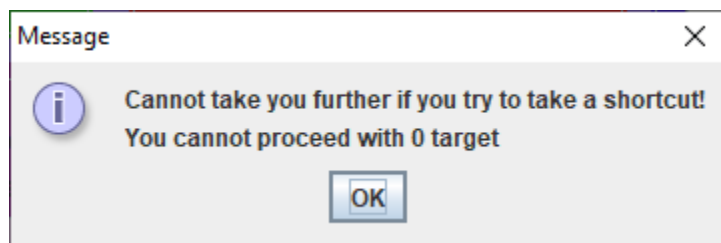
After successful sign in a window will appear like below:



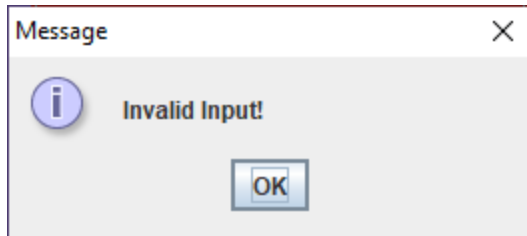
This is the main dashboard for the Solver. Here can do anything to track his details.

A new solver cannot directly enter the total solve area without setting a target like

below



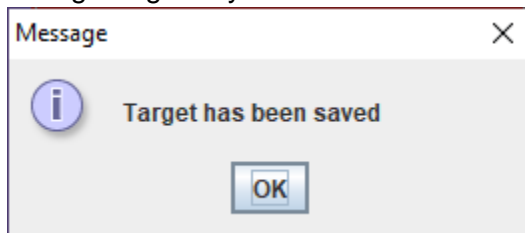
Also the solver cannot enter anything without a digit like below:



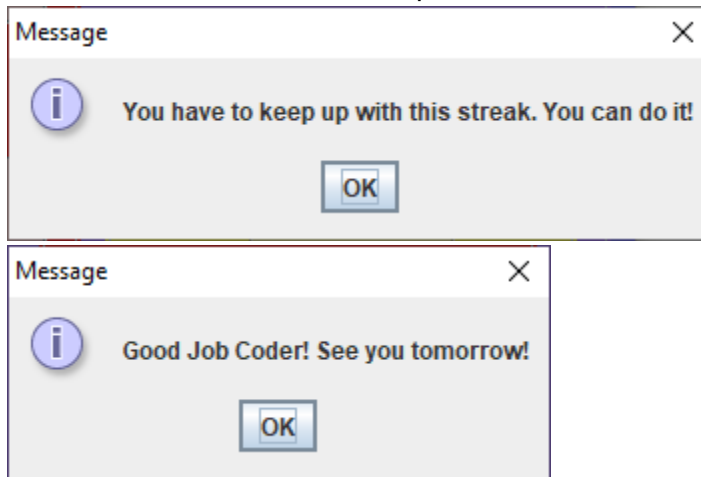
1. **Set Target:** A solver has to set a daily target. He has to fulfill this target to reach his goal. This is a beginner's step in competitive programming.



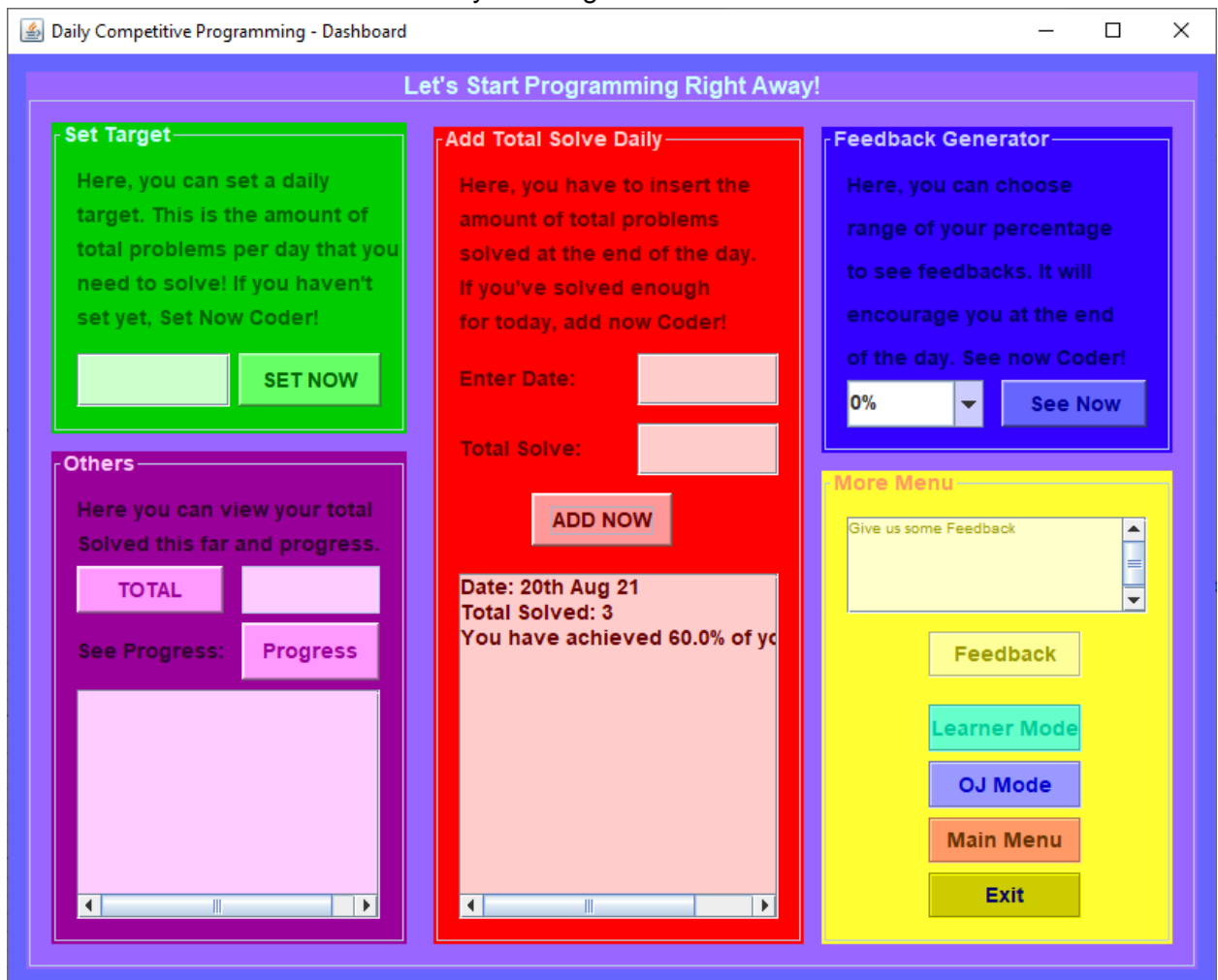
Now the solver has set the target to 5. He has to complete this target daily. He can also change target anytime.



2. **Add total solve of the day:** Now if we input the day and add our total solve like above, we will see a feedback and a report like below:



This is the feedback based on the day and target.



In the red box we can see the report of the day based on our daily target.

3. **Total and Progress:** In the purple box, if the solver wants to see the total solve that he has done so far, he can press Total in the maroon box. He will be able to see. If he wants to see all the progress history, he can click the progress. This progress includes the date, solve, feedback and percentage of target achievement with target. Example is given below:

Daily Competitive Programming - Dashboard

Let's Start Programming Right Away!

Set Target

Here, you can set a daily target. This is the amount of total problems per day that you need to solve! If you haven't set yet, Set Now Coder!

SET NOW

Add Total Solve Daily

Here, you have to insert the amount of total problems solved at the end of the day. If you've solved enough for today, add now Coder!

Enter Date:

Total Solve:

ADD NOW

Date: 21st Aug 21
Total Solved: 5
You have achieved 100.0% of y

Feedback Generator

Here, you can choose range of your percentage to see feedbacks. It will encourage you at the end of the day. See now Coder!

0% **See Now**

Others

Here you can view your total Solved this far and progress.

TOTAL 8 Solved!

See Progress: **Progress**

Date: 20th Aug 21
Total Solved: 3
Target: 5
You have achieved 60.0% of your g
Feedback of the day: You have to k
Date: 21st Aug 21
Total Solved: 5
Target: 5
You have achieved 100.0% of your

More Menu

Give us some Feedback

Feedback

Learner Mode

OJ Mode

Main Menu

Exit

4. **Feedback Generator:** If a solver wants to see how the feedback works, he can select the percentage to generate it. Example is given below:

Daily Competitive Programming - Dashboard

Let's Start Programming Right Away!

Set Target

Here, you can set a daily target. This is the amount of total problems per day that you need to solve! If you haven't set yet, Set Now Coder!

SET NOW

Others

Here you can view your total Solved this far and progress.

TOTAL 8 Solved!

See Progress: Progress

Date: 20th Aug 21
Total Solved: 3
Target: 5
You have achieved 60.0% of your goal
Feedback of the day: You have to keep up with this streak. You can do it!

Date: 21st Aug 21
Total Solved: 5
Target: 5
You have achieved 100.0% of your goal

Add Total Solve Daily

Here, you have to insert the amount of total problems solved at the end of the day. If you've solved enough for today, add now Coder!

Enter Date:

Total Solve:

ADD NOW

Date: 21st Aug 21
Total Solved: 5
You have achieved 100.0% of your goal

Feedback Generator

Here, you can choose range of your percentage to see feedbacks. It will encourage you at the end of the day. See now Coder!

0%

0%
1-30%
31-60%
61-99%
100%

See Now

Feedback

Learner Mode

OJ Mode

Main Menu

Exit

Choosing 31-60% will generate feedback like below:

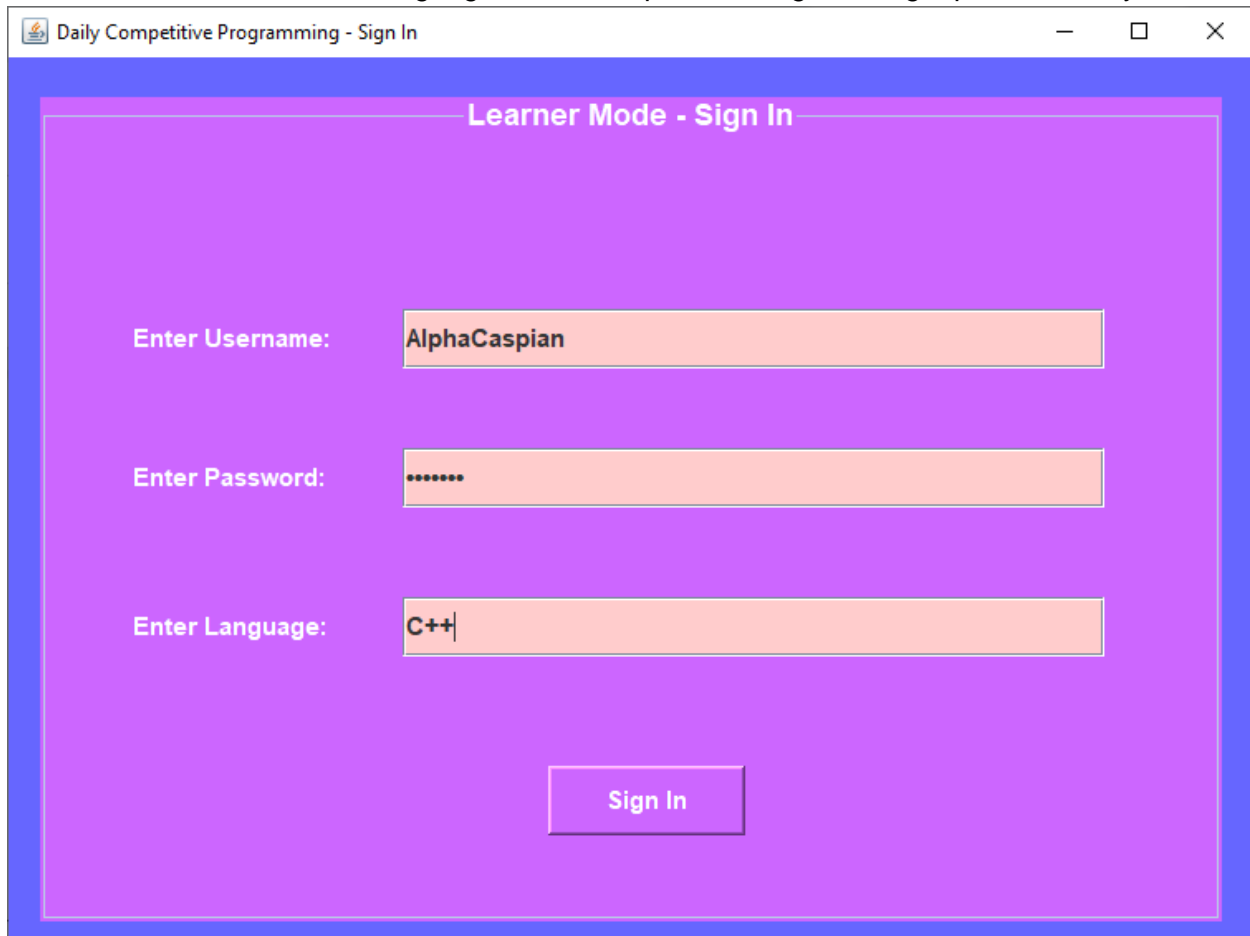
Message

i You have to keep up with this streak.
You can do it!

OK

5. **Feedback:** If a solver wants to give feedback he can write something on the yellow feedback field and press Feedback.

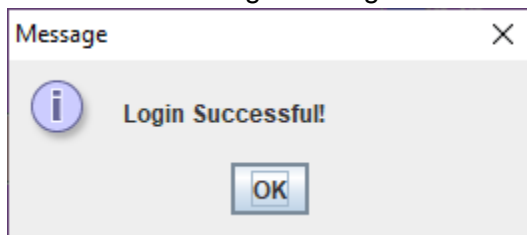
6. **Learner Mode:** To access the learner mode for a solver has to login first. In the login the learner will enter the language of his Competitive Programming topic for the day.

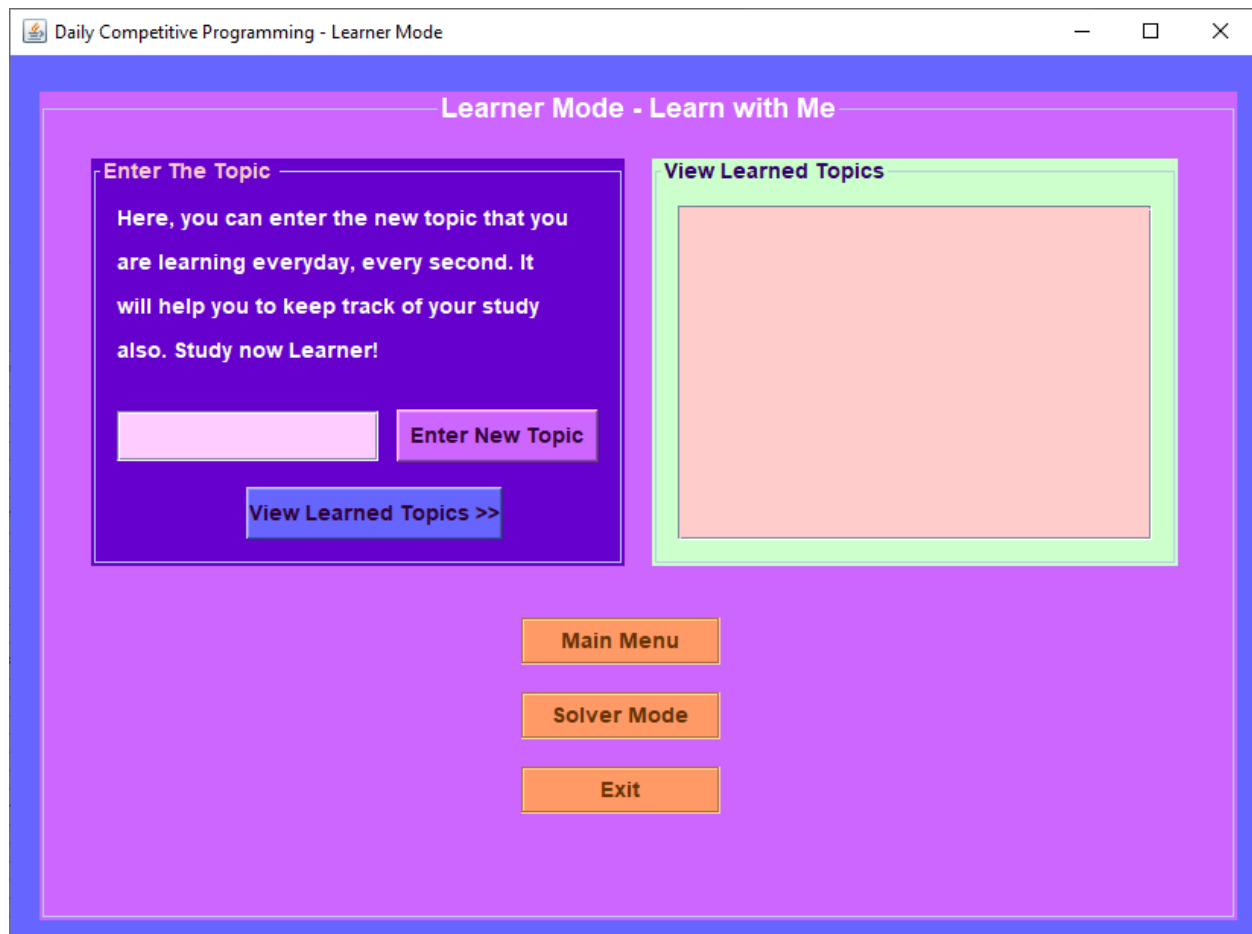


The screenshot shows a window titled "Daily Competitive Programming - Sign In". Inside the window, there is a purple rectangular area with the title "Learner Mode - Sign In". Within this area, there are three input fields and a button:

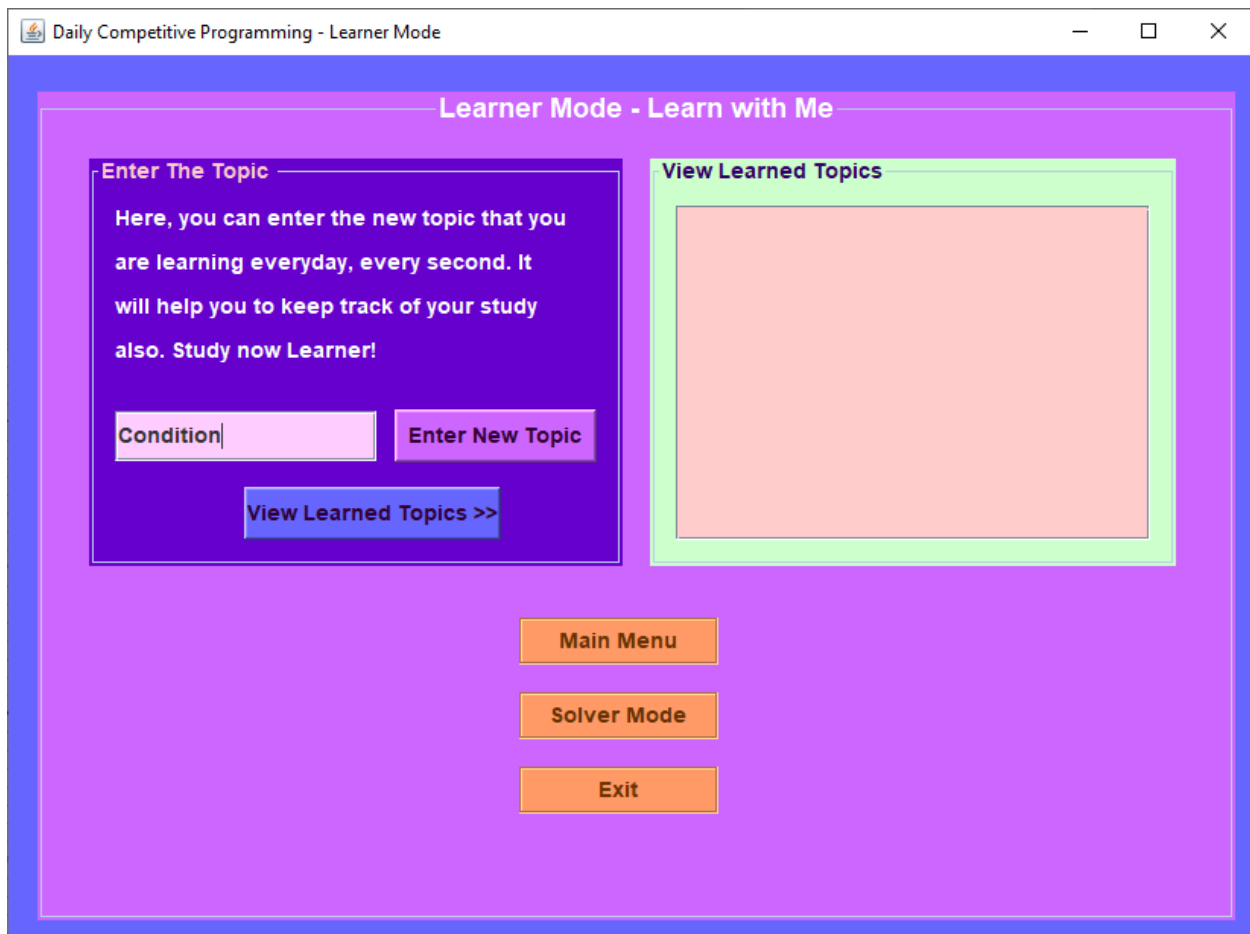
- Enter Username:** The input field contains the text "AlphaCaspian".
- Enter Password:** The input field contains masked characters represented by dots.
- Enter Language:** The input field contains the text "C++".
- Sign In:** A button located at the bottom center of the purple area.

After successful login it will give the solver access to the learning mode.

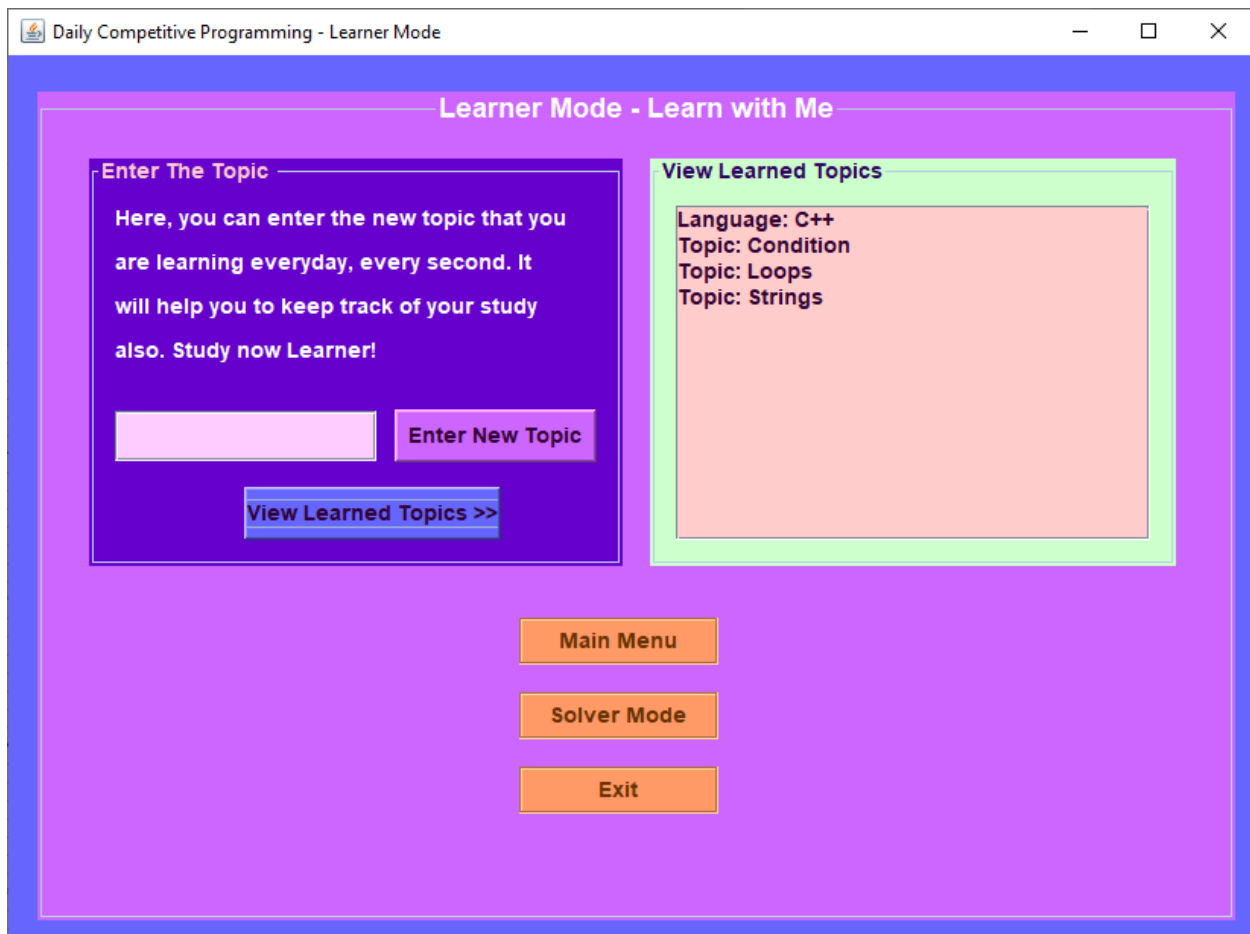




This is the learner's dashboard. Solver can enter the topic that he has learned. In this way he will be able to see what he has learned and what he needs to learn next. Without learning, the solver cannot compete.



After entering the topic if the learner wants to see the list of his learning he can view it.



After viewing this is the list that will show for the language c++. Learners can change language during sign in. Now if we go again to the solver mode and check the OJ mode.

7. **OJ Mode:** Below is the dashboard of OJ mode.

- Pending Problems: Now if the solver gets a wrong answer or is confused about a problem, he can list the problem on the yellow box by ADD. By this feature he can add the problem that he will solve in future.

The screenshot shows a web application titled "Daily Competitive Programming - OJ Dashboard". The main content area is divided into two primary sections: "Pending Problems" (yellow background) and "Mini Contest with Bots" (red background). On the right side, there are three buttons: "BACK", "Main Menu", and "Exit".

Pending Problems Section:

- Text: "Here, you can insert the problems you have to solve next. Problems like wrong submission. So that you don't forget to try the problem again. Enter in this format(URI 1001). 1001 of uri is still not solved. List now! You can view the pending problem list below. You can also cut the problem that is solved in the same field. Simply add the ID or edit. Then Press Save. Save Now Coder!"
- Input field: "URI 1002" with an "ADD" button.
- Text: "View to delete a problem below first. Otherwise list will be lost."
- Empty list box with "VIEW" and "Delete" buttons at the bottom.

Mini Contest with Bots Section:

- Text: "Here, there are some bots in this system. These bots have some ratings based on Codeforces Contest. You can try to beat them. Just Compare with them and keep beating. Don't Lose Hope Coder!"
- Two empty input fields.
- Text: "Just enter your ratings here. EX: 1040"
- "COMPARE" button.
- Text: "write 1 for olives, 2 for star, 3 for rat"
- Input field and "See Rating" button.

by adding this problem will show a window like below

A "Message" dialog box with a close button (X) in the top right corner. It contains an information icon (i) and the text "Pending Problem Added". At the bottom is an "OK" button.

If the solver wants to view the problem list that he needs to solve, he can click VIEW

Daily Competitive Programming - OJ Dashboard

Online Judge Tracking Dashboard

Pending Problems

Here, you can insert the problems you have to solve next. Problems like wrong submission. So that you don't forget to try the problem again. Enter in this format(URI 1001). 1001 of uri is still not solved. List now! You can view the pending problem list below. You can also cut the problem that is solved in the same field. Simply add the ID or edit. Then Press Save. Save Now Coder!

ADD

View to delete a problem below first. Otherwise list will be lost.

URI 1002 CF 1002

VIEW **Delete**

Mini Contest with Bots

Here, there are some bots in this system. These bots have some ratings based on Codeforces Contest. You can try to beat them. Just Compare with them and keep beating. Don't Lose Hope Coder!

Just enter your ratings here. EX: 1040

COMPARE

write 1 for olives, 2 for star, 3 for rat

See Rating

BACK
Main Menu
Exit

We can see the pending problems here. Now if the solver solved the problem URI 1002, he can erase that problem in the box and click DELETE. This will save the process. But there is a CAUTION. If the solver doesn't view first and press delete, all records will get deleted. So the solver has to view first, in order to delete.

Message

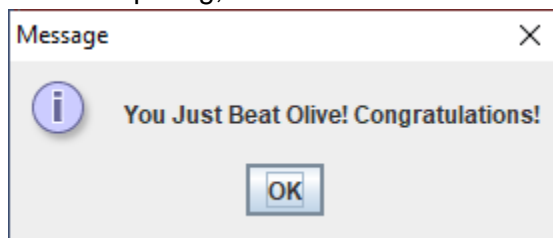
Hurray!
A Problem has been deleted!
That means you solved the problem
Keep it up!

OK

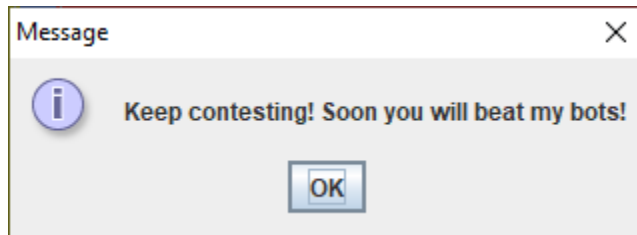
- **Mini Contest With Bot:** In the red 3rd box, solver can enter his/her coderforces current ratings and compare with the system's bots.

The screenshot shows a web application titled "Online Judge Tracking Dashboard". It has a blue header and a light blue background. On the left, there is a yellow box titled "Pending Problems" with instructions on how to add or delete problems. In the center, there is a red box titled "Mini Contest with Bots". This box contains text about bots, a text input field with "645" entered, a "COMPARE" button, and a "See Rating" button. To the right of the red box, there are three buttons: "BACK", "Main Menu", and "Exit".

After comparing, the result will show like below



Here Olive is a system, which the solver beats



Now if the contestant wants to see the ratings of the system's bots, he/she can click "See Rating" by giving the serial number of the bot.

Daily Competitive Programming - OJ Dashboard

Online Judge Tracking Dashboard

Pending Problems

Here, you can insert the problems you have to solve next. Problems like wrong submission. So that you don't forget to try the problem again. Enter in this format(URI 1001). 1001 of uri is still not solved. List now! You can view the pending problem list below. You can also cut the problem that is solved in the same field. Simply add the ID or edit. Then Press Save. Save Now Coder!

 ADD

View to delete a problem below first. Otherwise list will be lost.

CF 1002

VIEW

Delete

Mini Contest with Bots

Here, there are some bots in this system. These bots have some ratings based on Codeforces Contest. You can try to beat them. Just Compare with them and keep beating. Don't Lose Hope Coder!

Olive Star Rat

[600, 1200, 1800]

645

COMPARE

write 1 for olives, 2 for star, 3 for rat

2


See Rating

BACK

Main Menu

Exit

Message


 1200

OK

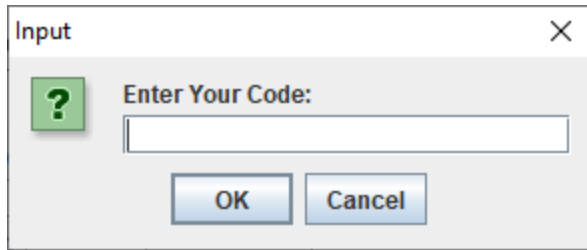
Here Stars rating is 1200.

8. **Admin:** After going to the main menu, the admin of the system can login into the system.

Input

 Enter Admin ID:

OK **Cancel**



Input

Enter Your Code:

OK Cancel

This is a small dialog box with a title bar that says 'Input' and a close button. It contains a green square icon with a question mark, a text label 'Enter Your Code:', a text input field, and two buttons labeled 'OK' and 'Cancel'.

This code and ID is only for the admin. No other person except the admin will know the access area. After successful Access admin dashboard will show like below



Daily Competitive Programming - Admin Panel

Admin Panel

User Progress History

CHECK

Feedbacks of System

CHECK

System User List

CHECK

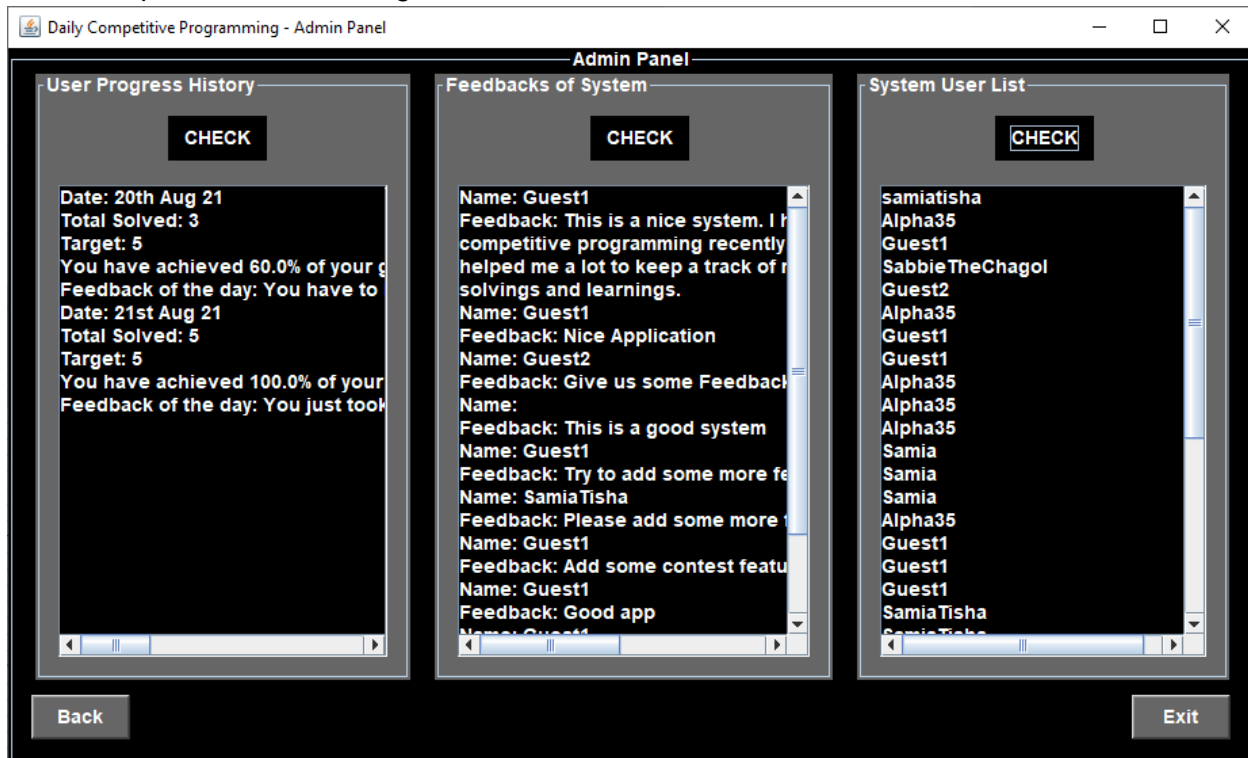
Back

Exit

The image shows a screenshot of an 'Admin Panel' window. The title bar reads 'Daily Competitive Programming - Admin Panel'. The main content area is titled 'Admin Panel' and is divided into three vertical sections. The first section is 'User Progress History' with a 'CHECK' button. The second section is 'Feedbacks of System' with a 'CHECK' button. The third section is 'System User List' with a 'CHECK' button and a scrollbar. At the bottom of the panel are two buttons: 'Back' and 'Exit'.

- **User Progress History:** Here admin can see the progress history of the solvers.
- **Feedbacks of System:** Admin will be able to see the feedbacks about the system
- **System User List:** Admin will be able to see all the list of users.

The Example of this 3 area is given below



[Tutorial](#) View⇒ [Java Project.mp4](#)

This is how the system works. Competitive Programmers can use this app to track his programming activity on a daily life basis. This will help the beginners to reach his goal easily.

The End