

# Practicals

Last workshop!?!? :(



# TOC

1. Contest day timeline
2. Getting around School of ICT and Labs
3. Familiarization with contest platform
4. Attempt practice questions
5. Closing

# Contest day timeline

Time	Activity	Location
10:00 – 10:50	Welcome ceremony	31-05-03
11:00 – 13:15	Contest part 1	31-05-10/12
13:15 – 14:15	Lunch	Level 1
14:30 – 16:45	Contest part 2	31-05-10/12
17:30 – 18:00	Prize presentation and closing	31-05-03

# School of ICT and Labs

- Welcome to the School of ICT!
- On contest day,
  - Reporting venue is 31-05-03
  - Contest will be held in the 31-05-10 and 31-05-12 labs
- Desktop computers provided for the contest
  - Please do not bring your own laptops!

# School of ICT and Labs

- If required, connect to the WiFi

SSID: P101

Password: P101isfun

# School of ICT and Labs

- Rules and regulations.. For today
  - Do not install additional software on the computers
  - Do not add files on the computers

# Contest Platform

# The Contest <sup>TM</sup>

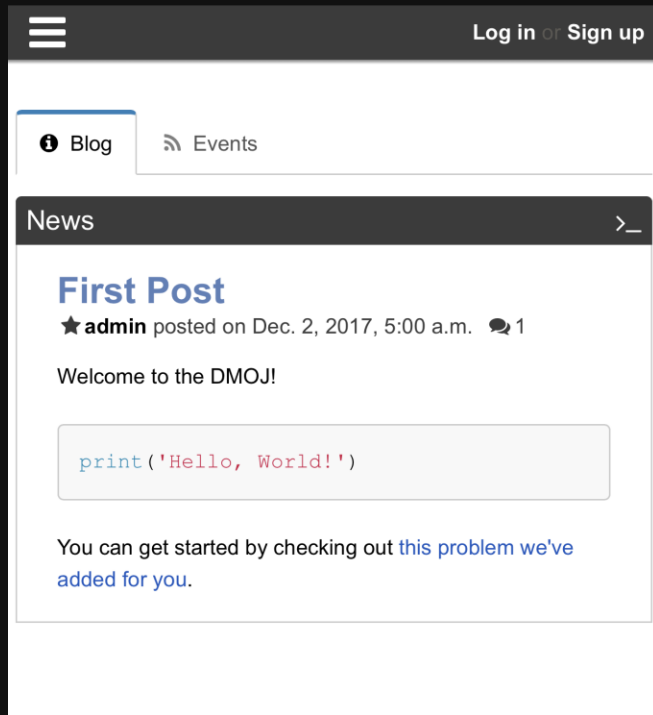
- Questions are provided through platform
  - No hard copy provided for eco friendliness!
- Pen and paper will be provided if requested
- *2 sessions for 2 hours* each
- The contest platform is available at  
<https://pioi-contest.np-overflow.club>



# Platform

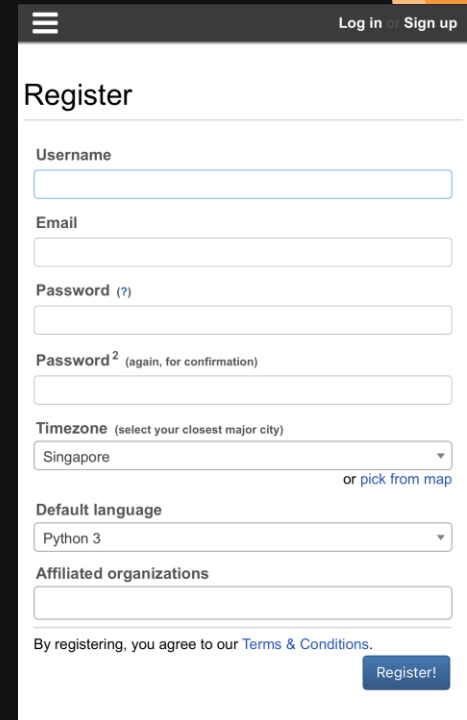
- Powered by DMOJ

<https://dmoj.ca>



# Platform – Account management

1. Create an account **using the email you signed up with**
2. An email verification will be sent
3. Accept the verification

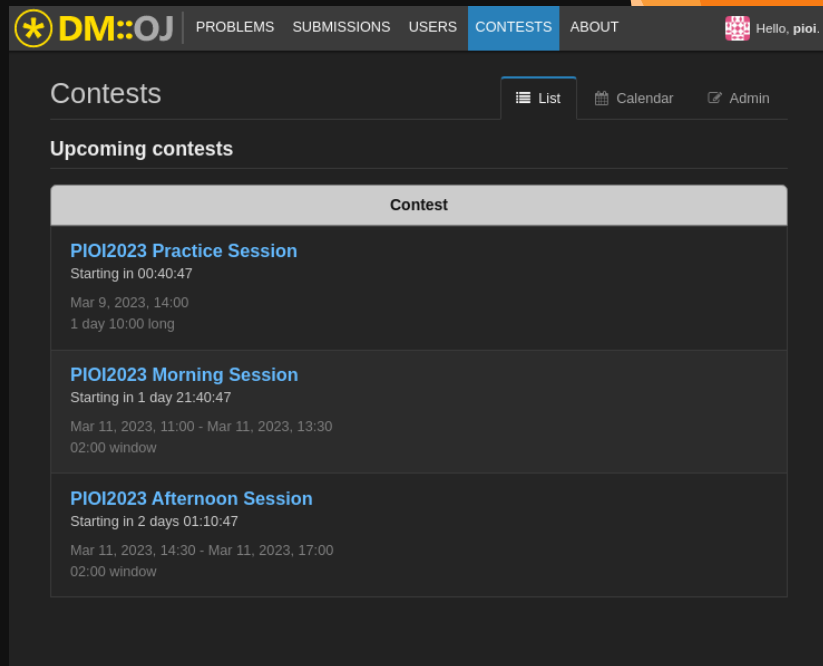


The screenshot shows a web registration form with the following fields and options:

- Username**: A text input field.
- Email**: A text input field.
- Password (?)**: A text input field.
- Password<sup>2</sup> (again, for confirmation)**: A text input field.
- Timezone**: A dropdown menu with "Singapore" selected. Below it is a link "or pick from map".
- Default language**: A dropdown menu with "Python 3" selected.
- Affiliated organizations**: A text input field.
- Footer**: A line of text stating "By registering, you agree to our [Terms & Conditions](#)." followed by a blue "Register!" button.

# Platform – Contests

- Contests are viewable from contests tab
- We will attempt PIOI2023 Practice Session today!
- On contest day, once you **JOIN** the contest, the 2-hour countdown will start



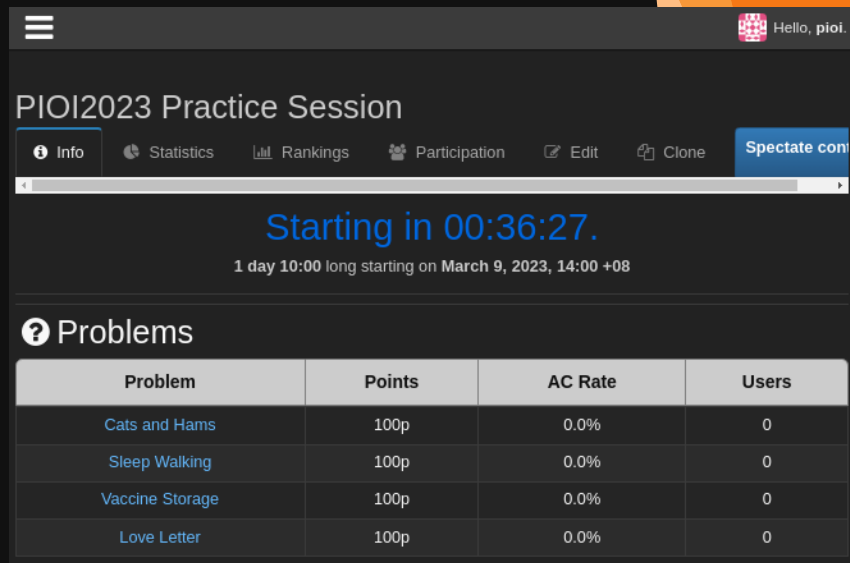
The screenshot shows the DM::OJ website interface. The top navigation bar includes links for PROBLEMS, SUBMISSIONS, USERS, CONTESTS (which is highlighted), and ABOUT. A user profile icon with the text 'Hello, ploi.' is on the right. Below the navigation bar, the 'Contests' section is displayed, featuring a 'List' button and icons for 'Calendar' and 'Admin'. The main content area is titled 'Upcoming contests' and contains a table with the following data:

Contest
<b>PIOI2023 Practice Session</b> Starting in 00:40:47 Mar 9, 2023, 14:00 1 day 10:00 long
<b>PIOI2023 Morning Session</b> Starting in 1 day 21:40:47 Mar 11, 2023, 11:00 - Mar 11, 2023, 13:30 02:00 window
<b>PIOI2023 Afternoon Session</b> Starting in 2 days 01:10:47 Mar 11, 2023, 14:30 - Mar 11, 2023, 17:00 02:00 window

# Platform – Problems

- Within the contest, problems + their respective points are shown
- Each question comprises multiple subtasks which totals to 100 points
- Click on a problem to view its contents

AC Rate = Accepted Answer Rate



The screenshot shows the PIOI2023 Practice Session interface. At the top, there is a navigation bar with a hamburger menu, a user profile icon labeled 'Hello, pioi.', and a title 'PIOI2023 Practice Session'. Below the title, there are tabs for 'Info', 'Statistics', 'Rankings', 'Participation', 'Edit', and 'Clone', along with a 'Spectate contest' button. A large blue timer displays 'Starting in 00:36:27.' with a subtitle '1 day 10:00 long starting on March 9, 2023, 14:00 +08'. Below the timer, a section titled '? Problems' contains a table of available problems.

Problem	Points	AC Rate	Users
<a href="#">Cats and Hams</a>	100p	0.0%	0
<a href="#">Sleep Walking</a>	100p	0.0%	0
<a href="#">Vaccine Storage</a>	100p	0.0%	0
<a href="#">Love Letter</a>	100p	0.0%	0

# Platform – Grading

- Subtask points are shown in the problem
- Time + memory limits can also be viewed in the sidebar

**Constraints**

The maximum execution time on each instance is 1.0s. Your program will be tested on sets of input instances that satisfy the following limits:

- $1 \leq N \leq 5 \times 10^5$

Subtask	Marks	Additional Limits
1	20	$1 \leq N \leq 10^3$
2	30	$N \leq 10^4$
3	50	No further restrictions

**Sample Test Case 1**

This test case is valid for all subtask

Input	Output
2	1

ccccccchcchccchhcchchchchchh  
hhhhhhchchhchchchhchchchcc

**Explanation**

All possible permutations of a section with 4 characters are as such:

**Submit solution**

[All submissions](#)  
[Best submissions](#)

[Voting statistics](#)

[Manage tickets](#)  
[Edit problem](#)  
[Manage submissions](#)  
[Clone problem](#)

✓ **Points:** 100 (partial)  
⌚ **Time limit:** 1.0s  
💾 **Memory limit:** 256M

✍ **Authors:**  
admin, piol, qinguan,  
Cosmiwaihang

➤ **Problem type**

✓ **Allowed languages**  
C++, Go, Java, Python

👤 **Judge:**  
worker-1

# Platform – Grading

- Problem grading follows the IOI format
- Max score for each subtask across all submissions
- Total points for problem: 40p

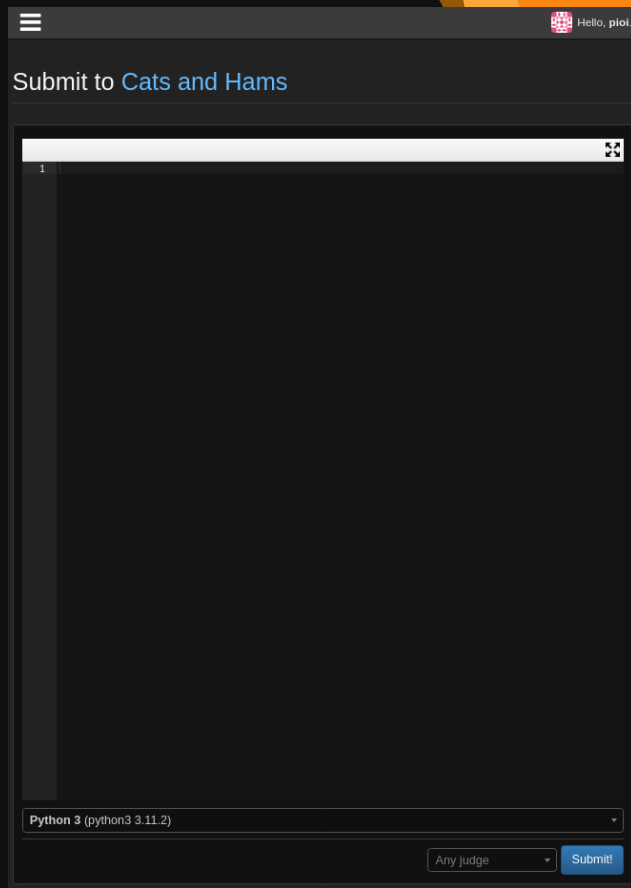
Submission	Subtask	Points
1	1	10p
1	2	20p
2	1	10p
2	2	30p

# Platform – Submissions

- Preinstalled software installed on computer:
  - Java
  - Go
  - Cygwin G++
  - Python 3
  - VSCode
  - IntelliJ Community Edition
  - PyCharm Community Edition

# Platform – Submissions

- When submitting a solution, only 1 file is allowed
- Language must be selected from dropdown at the bottom






# Platform – Submissions

- Status codes:

Status Code	Description
AC	Accepted Answer
WA	Wrong Answer
IR	Invalid Return
RTE	Runtime Error
OLE	Output Limit Reached
MLE	Memory Limit Reached
TLE	Time Limit Reached
IE	Internal Error (contact admins)

 Hello, pioi.

Submission of **Cats and Hams** by **pioi** March 9, 2023, 1:36 p.m. on worker-1  
Python 3 [Admin]

[View source](#)  
[Resubmit](#)  
[Rejudge](#)

Execution Results

✓✓✓

Batch #1 (20/20 points)  
Case #1: AC [0.068s, 10.75 MB]  
Case #2: AC [0.072s, 10.59 MB]  
Case #3: AC [0.055s, 10.46 MB]  
Case #4: AC [0.055s, 10.55 MB]  
Case #5: AC [0.083s, 10.70 MB]  
Case #6: AC [0.050s, 10.49 MB]  
Case #7: AC [0.067s, 10.69 MB]  
Case #8: AC [0.059s, 10.59 MB]  
Case #9: AC [0.055s, 10.55 MB]  
Case #10: AC [0.067s, 10.73 MB]

Batch #2 (30/30 points)  
Case #1: AC [0.109s, 11.02 MB]  
Case #2: AC [0.118s, 11.05 MB]  
Case #3: AC [0.078s, 10.69 MB]  
Case #4: AC [0.078s, 10.79 MB]  
Case #5: AC [0.124s, 11.04 MB]  
Case #6: AC [0.114s, 11.01 MB]  
Case #7: AC [0.126s, 11.01 MB]  
Case #8: AC [0.111s, 10.97 MB]  
Case #9: AC [0.100s, 11.02 MB]  
Case #10: AC [0.123s, 11.09 MB]

Batch #3 (50/50 points)  
Case #1: AC [0.519s, 13.07 MB]  
Case #2: AC [0.446s, 12.95 MB]  
Case #3: AC [0.312s, 11.51 MB]  
Case #4: AC [0.435s, 12.96 MB]  
Case #5: AC [0.123s, 11.09 MB]  
Case #6: AC [0.538s, 13.01 MB]  
Case #7: AC [0.573s, 13.00 MB]  
Case #8: AC [0.532s, 13.03 MB]  
Case #9: AC [0.055s, 10.63 MB]  
Case #10: AC [0.671s, 13.03 MB]

Resources: 5.914s, 13.07 MB  
Maximum single-case runtime: 0.671s  
Final score: 100/100 (100.0/100 points)

proudly powered by DMOJ | English (en)

# Practice questions

- Practice makes perfect!
- Attempt the questions in PLOI2023 Practice Session
- Check that the computers are configured correctly
  - Ensure you can use the software
  - Ensure you do not have network issues
  - Ensure you can submit solutions to the contest platform
- Please sound out if you experience issues!

# Practice questions

# Practice questions

- Practice makes perfect!
- Attempt the questions in PLOI2023 Practice Session
- Check that the computers are configured correctly
  - Ensure you can use the software
  - Ensure you do not have network issues
  - Ensure you can submit solutions to the contest platform
- Please sound out if you have questions!

# Closing

# Closing

- Solutions to the practice questions are available on the platform
- On Saturday
  - Reporting venue: 31-05-03
  - Reporting time: 10AM
  - Things to bring: Pen/pencil (optional)
- Have a good rest and see y'all on Saturday!

# Thank you!

See you on Saturday :D

PIOI Feedback - Day 4

