

# Sharif MicroMaster Program: Competitive Programming

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# Now, you tell me about yourself!

How old are you?

When did you start coding?

Why do you like ICPC?

Your favorite food!

**Topic for today:**

**Standard Libraries**

**Mastering ICPC Contest Strategies**

**First Topic:**

**Standard Libraries**

# Containers and Algorithms

## Containers:

- Vector (list)
- Set (set) + multiset
- Map (dict)

Algorithms: sort, next\_permutation, lower\_bound, upper\_bound

**Second Topic:**

**Mastering ICPC Contest Strategies**

# First, tell your stories about a contest went bad because of bad strategy

For example:

Being Stressed

Time Management

Spending a Lot of Time on Incorrect Solution

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# In this session, we'll cover:

1. General ICPC strategies
2. Stress management
3. Time management and Teamwork
- ~~4. Smooth coding practices~~

These skills are crucial for contest success!

# What's the difference between a Codeforces contest And the ICPC?

1. Number of tasks
2. Codeforces tasks are sorted by their difficulty
3. Team vs Individual
4. Internet access
5. Online vs On-site
6. Codeforces Hacks
7. Different time penalty formulations

**How your strategy  
is dealing with  
these differences?!**

# How to detect stress?

What are your signs when you are stressed?

1. Shaking feet
  2. Time flies
  3. Becoming impatient
  4. Sweating
  5. Becoming angry easily
  6. Being disappointed
  7. Harder to concentrate
  8. Increased Heart Rate
  9. Nervous Laughter
  10. Forgetfulness
1. Excessive Fidgeting
  2. Avoiding Eye Contact
  3. Change in Voice Pitch
  4. Stomach Issues
  5. Rapid Breathing
  6. Withdrawal from Team Discussions
  7. Overeating or Not Eating:

# How to handle stress?

What do you do to decrease the stress?

1. Deep breath
  2. Going for a short walk
  3. Going to the bathroom
  4. Thinking about the fun of competition
  5. Eating chocolate
  6. Drinking water
  7. Chewing a gum
  8. Laughing
1. Having fun
  2. Resting your eyes

# Time Management and Teamwork

How to balance lots of tasks and 15 man-hours in a 5-hour contest with a single PC?

1. Try to find some easy problem to solve in the first 15 minutes (so that you get something accepted in the first 30 minutes)
2. Don't check the scoreboard!!
3. Know your strengths (and your teammates')
4. When someone is coding, others try to read other problems
5. Have some checkpoints (ours was after getting a problem accepted, and after each hour)
6. Agree with some limits. For example, don't stuck at anything more than 15 minutes.
7. Have a very specific schedule for the start of the contest

# General Advices

1. Stay organized
2. Practice your notebook beforehand
3. Have a nice sleep
  - a. Do some exercise for better sleep (swimming, running, ...)
4. Have a nice breakfast
5. Have fun!

# Smooth coding practices

What to do when the code is hard and long?

1. Sketch your code on a paper before coding
2. Coding it part by part
3. Test your code part by part
4. Use asserts
5. Avoid duplicate logics. Write a function for it and use it multiple times
6. Explain the code to a teammate (bear!)
7. Run your code on a max-test
8. Run your code on a min-test

And the most important tip:

**Practice And Enhance Your  
Strategy!**



**Good Luck!**