

Preparing Students for IOI: Thailand Country Report

Dr. Kanchit Malaivongs
Fellow, Royal Institute of Thailand

IPST

- **Institute for Promotion of Teaching Science and Technology was established in 1972 to develop textbooks and provide teacher trainings in mathematics, science and technology in the elementary and secondary education levels.**
- **Around 1989, IPST accidentally learnt that there are various interesting student contests which we collectively call the Academic Olympiads and we decide that we should participate in all these contests.**

Started in Minsk

- **Two observers were sent to Minsk in 1990 to observe the second IOI.**
- **We found that the ability of Thai students was far below the IOI contest level. Only a few high school taught BASIC for solving elementary problems. Teachers were not trained in programming and only a few universities had computer science curricula.**
- **We thought that the contest was interesting and saw an opportunity to use IOI as a drive to promote computer science education.**

First Contest in Greece

- **We started to think and plan to send students to the third IOI in Greece.**
- **The first step was to find high school students who might be smart enough to carry out the tasks in the contest. We did this by persuading students from several schools to participate in a limited selection examination. About 15 selected students were trained to solve combinatoric, geometric, statistics, and algorithmic problems.**
- **Thai students did quite OK in our first contest – 1 silver and 2 bronze medals.**

Training Development

- **The observation and the first year experience gave us more ideas on how to provide trainings to students.**
- **Several CS instructors from different universities were invited to suggest a more rigorous trainings for the students who were to be selected for the IOI's. Training topics were discussed and planned.**

Old Selection Process

1. Students are invited to a selection examination in June.
2. Thirty students are selected for October training camp to study programming and algorithm design. At the end of the training 15 students are selected for the next camp.
3. Two week camp in April provides training in combinatorial, graph theory, number theory, dynamic programming, etc. Ten students are selected to further practice problem solving during weekends. Finally four students are selected for the IOI.

Princess Galyani Vadhana

- **HRH Princess Galyani Vadhana, the elder sister of HM the King was very much interested in academic development. She was a professor in French and was keen to develop Thai students in different academic areas.**
- **Learning that IPST lacked of budget to send students to some Academic Olympiads, she agreed to help sponsor the airfares to students and leaders.**

The Foundation

- **HRH Princess Galyani Vadhana initiated a foundation to promote and coordinate all Academic Olympiad trainings into the same direction.**
- **The Promotion of Academic Olympiad and Development of Science Education Foundation is founded under her royal patronage. The Foundation has since worked in collaboration with IPST on the Academic Olympiad trainings.**

New Pattern of Selection

- 1. Students are invited in July to apply for the training in the first camp in any of 14 training centers in schools and universities.**
- 2. In the following March, 3-400 students are selected for the second camp.**
- 3. 100 students are selected to participate in the National Olympiad in Informatics in May.**
- 4. 25 students are then selected for the IPST camps in October and April.**

Benefits from the Foundation

- 1. More students are trained throughout the country.**
- 2. More universities and schools are involved, thus creating more participation**
- 3. Selected students for IOI receive more in depth trainings in different topics.**
- 4. More public relations on the IOI.**

Benefits for the Selected Students

- **Students in April Camp may not pay much attention to the trainings because they have to take entrance examinations almost at the same time.**
- **To encourage students to pay more attention to the trainings, IPST convince universities to admit these students without having to take the entrance examinations. IPST also provides scholarships to all students who are selected as national representatives to Academic Olympiads with the conditions that they must study in the same field that they participate as contestants. Scholarships cover both undergraduate and graduate education.**

Benefits for Thai Instructors and Staff in Organizing IOI

- Opportunities to learn what other countries are doing and teaching.
- Insight in using Task Grader in Programming courses
- Sharing ideas in developing interesting tasks
- Knowledge in various methods of teaching different subjects in CS.
- Development of software to assisting the competition
- Knowledge about Thai politics in collaboration among different offices.

Problems So Far

- Unable to create interest in programming courses among high school students because programming is not required in the entrance examination.
- Lack of teachers in programming.
- Lack of Thai books in programming for problem solving or programming for fun.
- Misunderstanding about software usage and computer science, i.e., believing that using Windows, Access and Excel is adequate to be a computer scientist.