IEEE would like to take this opportunity to recognize the amazing work that our volunteer judges accomplish in relation to the annual IEEE Xtreme programming competition, which takes place this year on 18 October. We should all be grateful for their dedicated work and attention. In addition to working a normal 40-h/week professional job, IEEE Xtreme judges provide invaluable input with very little expectation of personal recognition. Although it may be somewhat difficult to assess the true impact that judges have on the experience of IEEE Xtreme competitors, the collective evidence suggests that judges meaningfully enhance the experiences of both IEEE Xtreme participants and the IEEE Young Professionals community as a whole.

To fully appreciate the work of these judges, it is important to consider the amazing success of IEEE Xtreme. Over the past seven years, IEEE Xtreme has grown tremendously. When the competition first started in 2006, there were only approximately 60 teams participating, whereas the number of actively participating teams in 2013 jumped to over 1,800. IEEE Xtreme teams have consistently shown enthusiasm when participating and keep competing teams, indicating that participating students do not consider IEEE Xtreme a “task” but rather a “huge annual programming party.” Also telling is the fact that many of these students return to the IEEE Xtreme community after they have finished with their studies, serving the competition as volunteer judges and quality assessors.

With this success in mind, it is important to recognize that the judges are the heart of the competition’s success. Without their valuable assistance, IEEE Xtreme would not be at all possible.

**Skillful determination**

It is difficult to summarize all of the skills required to be a successful judge but, just from a technical point of view, they have to be brilliant professionals with extraordinarily sharp programming skills. At a minimum, judges are highly skilled individuals from industry or academia, with many years of programming experience. They must have mastered some of the programming languages used in the competition and be fully aware of the common day-to-day challenges that appear when working in a real-life industry or academic environment. Judges must also have proven experience in a software-related field.
with profound knowledge of cutting-edge programming techniques, optimization methods, and heuristics that are frequently employed to solve advanced software problems.

The role of a judge is very demanding and requires a skillful individual with a strong, focused personality. Judges are above all else enthusiastic and “giving” people, willing to collaborate within a multinational team for little direct personal fanfare. They are self-driven, communicative, receptive to criticism, and goal-oriented. They perform as well by themselves as they do in a collaborative environment and often work with a singular purpose with IEEE staff members to help develop a strong yearly plan for IEEEXtreme.

The timeline of the judges’ work spans across several months, with the yearly process usually beginning around February/March and ending a few days after the competition is complete (usually in late October). Upon accepting the role of a judge around February/March, a long process of developing the intriguing problems takes place, which usually lasts until the end of May.

In terms of understanding how judges go about creating compelling questions, it is fair to say that each judge has his or her own process of developing and perfecting programming problems. Many judges first find a challenging task—a demanding optimization scheme, a dynamic-programming related issue, or a problem requiring graph theory, permutations, combinatorics, etc.—and work on its specific details to increase or decrease a problem’s difficulty to meet the competition’s interests. Judges implement into their programming problems highly demanding tasks that are often relevant to sophisticated software projects. Apart from describing the problem, an optimal solution for fully solving the challenge is developed, alongside several test cases that will be used to assess IEEEXtreme competitors’ submissions.

To say that developing an ideal programming problem for IEEEXtreme is difficult would be an understatement. Taking into account that there are thousands of teams, each composed of up to three skilled student programmers, coming up with a difficult problem can be a challenge on its own. Additionally, since the problems have to be compatible with the varying rules of competition—solvable by all supported programming languages, contain a variety of difficulty levels, do not require language-specific libraries, etc.—there is much peer communication held between the judges and the organizing committee during preparation time.

After the main programming task is developed, judges (sometimes) select a fictional character and the author-writing stage takes place. Judges must exercise a vivid imagination since the problems should be masked in the form of an appealing story that would make the problem entertaining for the contestants and not just another homework exercise.

Ducks in a row

After the delivery of the problems in the May/June period, a quality peer-review process starts. Each judge reviews the problems of other judges and provides useful feedback regarding possible ambiguities in the problem language, suggestions on problem logic, and concerns that could possibly arise during the competition. After a problem is thoroughly reviewed by the peer judges, it is set up on host servers and further assessed for quality over the span of a couple months. Knowledgeable volunteer quality assessors try to answer the problems to assure their solvability and to develop further feedback on issues that could possibly arise during the competition. Throughout this period judges also participate in the review process of other judges’ problems and fine-tune their own submissions.

When the date of the competition approaches in September/October, judges work closely with IEEE staff in handling registration and last-minute technical issues. This is a time in which all judges assure that they have all their “ducks in a row” and that they are ready for competition day.

Judges’ contributions are very substantial during the day of IEEEXtreme. They stay alert for many hours to help in the coordination of
the 24-h contest and to address the questions/issues that may be posed by the competing students. Although the preliminary planned time for each judge to be online is around 4 h, the majority of our volunteers are fascinated with IEEE Xtreme and stay online for much longer. They assist the competition not only in relation to the problems that they personally developed but with questions regarding other judges’ problems as well. Competition support might not seem to be a great stress in comparison to question development and evaluation, but it is actually quite demanding. During competition day, there are thousands of questions being received from the students that have to be promptly addressed.

Regarding the post-competition process and the selection of winners, the “grading” of team submissions is typically performed by a prearranged host system, in accordance to judges’ technical guidelines. Nevertheless, in cases where there might be confusion or concerns about plagiarism between the competing teams, judges are asked once again to manually review the individual teams’ solutions and decide on an appropriate grading. This usually lasts for a couple of weeks after the competition date, just before the final results are announced.

These collective facts support the notion that without the useful contribution of the judges, IEEE Xtreme would be practically impossible to implement. What makes their dedication especially noteworthy is that judges embrace their difficult role driven by personal enthusiasm for this competition and by a desire to give something back to the IEEE community. What makes their dedication especially noteworthy is that judges embrace their difficult role driven by personal enthusiasm for this competition and by a desire to give something back to the IEEE community. It is wonderful that all of the IEEE Xtreme volunteers, judges, and staff work as a single unified team, ultimately making this competition such as great success.

Finally, many of those involved in IEEE Xtreme genuinely feel as though they are part of an event that is so big and so great that the rewards of participation are fundamentally self-evident. Competitors, judges, and IEEE staff get very close to the other people sharing the same enthusiastic experience, which makes many feel like they are a member of a big family of individuals around the globe who are having fun in pursuit of great causes. Ultimately, the IEEE Xtreme experience nurtures a totally novel meaning to programming: programming can be fun, collaborative, and rewarding.

You can learn more about IEEE Xtreme at

- http://www.ieee.org/memberShip_services/membership/students/competitions/xtreme/index.html

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IEEE STUDENT BRANCH PROFILE (continued from page 8)

“The scope of the work that can be implemented is limited at times due to the lack of financial support available,” admits Seneviratne. “Our student plan is working on collecting required funds. Industry sponsorships are one of the biggest avenues that are available to raise funds. We always promote what we do and emphasize the importance of the Student Branch for the university students who will ultimately be a part of the industry. The industry has also recognized our potential with the reputation we have maintained. They are convinced that it is worth spending their money for these future technology leaders.”

With those dollars, the branch can sense the realization of its goals. “With the ultimate goal of ‘creating an atmosphere of technology for the upcoming engineers of the university,’ we always focus on benchmarking our standards with our fellow Student Branches,” Charles adds. “This eventually helps us in being the best in the country. Each year we conduct a brainstorming session with members and lecturers and assess our strengths, weaknesses and opportunities and implement new goals that we believe could be achieved by our dedicated members.”

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