International Computer Science Competition

Information Flyer

Edition of 2025

1   What is ICSC?

1.1   Vision, Mission, and Values

Computer Science is the bedrock of the modern world, driving innovation and shaping nearly every aspect of our lives. From the algorithms that connect us globally to the artificial intelligence transforming industries, its principles empower us to solve complex problems and build the future. Our society urgently needs talented computer scientists, engineers, and innovators to design, develop, and sustain the technologies of tomorrow.

The International Computer Science Competition offers students a platform to challenge their critical and logical thinking, explore diverse CS concepts, and delve deeper into this exciting discipline beyond the standard school curriculum. We believe that blending education with friendly competition can inspire students to develop a lasting passion for computer science, potentially leading to fulfilling careers in research, development, or engineering.

The International Computer Science Competition aims to be accessible to all students from all countries, regardless of their background, school, or institution: all you need is a pen, paper, access to a computer, and an internet connection to join!

1.2   What makes ICSC unique?

While competition is part of ICSC, our core mission is to foster genuine engagement with computer science, sparking curiosity and encouraging further exploration in this and related scientific fields. ICSC is a learning journey, enabled by diverse problem formats that enhance a student's understanding through practical application. Key aspects that distinguish ICSC include:

- **Internationality**: From the very first round, ICSC is a truly global event. All participants tackle the same challenges, ensuring fair assessment and fostering international connections.

- **Digital Accessibility**: We utilize the power of the internet to open participation to students everywhere, regardless of geographic location or school affiliation. While teacher guidance is beneficial, motivated individuals can participate independently from anywhere.

- **Exploration of Theory and Practice**: ICSC embraces the full scope of computer science. While many competitions focus primarily on programming as a means of demonstrating logical thinking, ICSC recognizes that the rise of artificial intelligence demands stronger emphasis on conceptual and mathematical problem-solving. Accordingly, the competition covers a broad set of topics, including information theory, machine learning, natural language processing, cryptography, optimization theory, and computer architecture. These are presented both as conceptual problems and as practical programming problems requiring functional code.

- **Real-World Research**: Bridging the gap between academic learning and cutting-edge research is vital, especially in a rapidly evolving field like computer science. ICSC problems typically incorporate concepts from recently published research papers. This unique feature provides many participants with their first exposure to actual CS research; a field where groundbreaking work is published daily, sometimes even by exceptional students like you!

- **Scaling Difficulty Levels**: Our problems are designed to engage both experienced computer science enthusiasts and those beginning to explore the subject beyond the classroom. The difficulty ranges from approachable exercises that reinforce foundational concepts to advanced challenges that introduce novel formats and require deeper analytical thinking. This ensures a rewarding and intellectually stimulating experience for all participants.

- **Online Tools for Educators**: We equip teachers and schools with resources and support. A dedicated teacher interface allows for streamlined management of student submissions, results tracking, certificate access, and supervision of the Final Round exam.

- **Local Communities & Ambassadors**: ICSC encourages the formation of local student groups focused on computer science. Our Ambassador Program empowers motivated students to inspire peers, organize local events, and build vibrant communities centered around shared interests in CS.

2   Who can participate?

Current high school and university students from all grades and countries are invited to participate. We have three age categories:

Junior: 10th Grade and below (and < 16 years of age)

Youth: 11th to 13th Grade (and < 19 years of age)

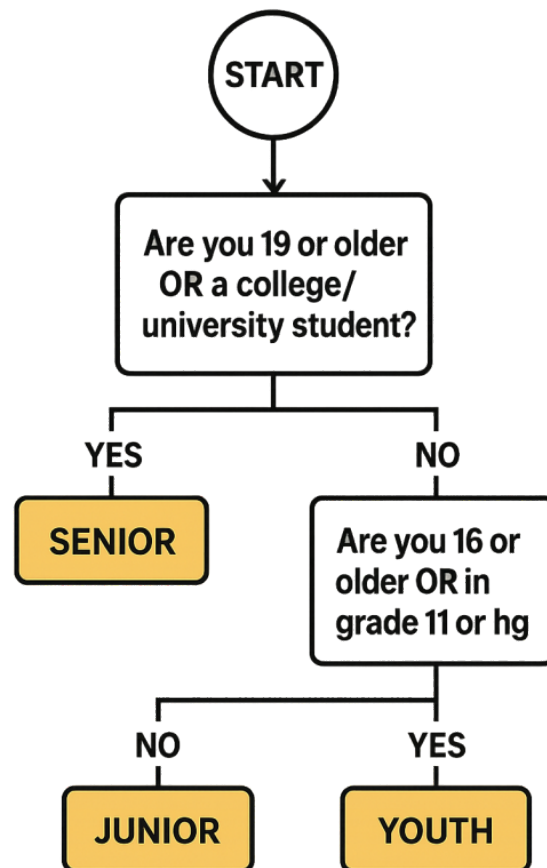**Senior**: 1st Year College/University and higher (or ≥ 19 years of age)

Figure 1: A decision tree to determine the age group a student is assigned to.

Students from all age categories will receive the same problems in all rounds. However, the number of problems required to advance differ based on your age group. To succeed, you'll need curiosity, logical thinking, and creativity. As some problems involve exploring research materials, strong reading comprehension in English is helpful. A reliable internet connection and access to a computer are necessary for participation and submission.

My age or grade changes after the submission deadline. Which group do I belong to?

Your grade/age on the day of the Qualification Round submission deadline determines your age group for the entire competition duration.

Do I have to be a student to participate?

Yes, participation is open to students currently enrolled in high school, college, or university. If you are in a transitional period (e.g., gap year between high school and university) and intend to begin university studies soon, you are also welcome to participate.

3 Why participate?

The International Computer Science Competition is foremost an educational initiative, enabling students to develop and demonstrate their analytical skills across a wide range of computer science challenges. To foster enthusiasm and friendly competition, participants also receive certificates and have the opportunity to earn awards, cash prizes, and international recognition. The prizes amount to a total value of over 1,000 EUR.

3.1 Prizes and Awards

Every participant receives a certificate acknowledging their effort. In the Final Round, exceptional performance is recognized with Bronze, Silver, or Gold Honours. The top students in each age category receive 1st, 2nd, and 3rd Prizes, while National Awards are presented to the highest-scoring participants from each country.

Senior:

1st Prize:	175 USD	Cash Prize, Special 1st Prize Certificate
2nd Prize:	125 USD	Cash Prize, Special 2nd Prize Certificate
3rd Prize:	75 USD	Cash Prize, Special 3rd Prize Certificate

Youth:

1st Prize:	150 USD	Cash Prize, Special 1st Prize Certificate
2nd Prize:	100 USD	Cash Prize, Special 2nd Prize Certificate
3rd Prize:	50 USD	Cash Prize, Special 3rd Prize Certificate

Junior:

1st Prize:	125 USD	Cash Prize, Special 1st Prize Certificate
2nd Prize:	75 USD	Cash Prize, Special 2nd Prize Certificate
3rd Prize:	25 USD	Cash Prize, Special 3rd Prize Certificate

We further honour the following achievements, which are outlined in the sections below:

National Awards: Special National Award Certificate

All Finalists: Participation Certificate with Bronze, Silver, or Gold Honour

All Participants: Official Participation Certificate
+ Special Honour for Outstanding Submissions

What is the "Special Honour for Outstanding Submission"?

Participants whose submissions go significantly beyond expectations may qualify for a Special Honour for Outstanding Submission. This could include particularly creative or highly efficient solutions, or submissions prepared using professional typesetting tools (e.g., LaTeX). Participants of this honour receive an special mention on their certificates.

Who will receive National Awards?

Reflecting ICSC's global outlook, we recognize the top three participants from each country who achieve at least 50% of the total points in the Final Round. These students receive a National Award certificate, and a list of top national performers will be published on our website.

3.2   Awards for Ambassadors

Each year, we recognize the dedication and impact of our most active ambassadors with special awards. Based on the number of students they inspire, their documented activities, and their community engagement, the following awards are presented:

1x ICSC Ambassador Award for Most Overall Participants: Awarded to the ambassador who successfully encouraged the highest number of students to join ICSC.

1x ICSC Ambassador Award for Most Finalists: Awarded to the ambassador whose guidance helped the most students reach the Final Round.

ICSC Ambassador Award for Excellent Encouragement: Presented to ambassadors who demonstrate outstanding commitment within their communities by organizing impactful events, inspiring students to explore computer science, or providing meaningful support to ICSC participants.

3.3   Awards for Schools

In recognition of the vital role educators and institutions play in nurturing talent in computer science, ICSC presents three types of school awards (non-monetary) to honor their efforts:

1x ICSC School Award for Most Participants: Awarded to the school with the highest number of registered participants in the Qualification Round.

1x ICSC School Award for Most Finalists: Awarded to the school with the most participants qualifying for the Final Round.

ICSC School Awards for Excellence: Presented to schools that demonstrate strong overall student performance, foster a supportive environment for participants, or show exceptional commitment to promoting computer science education through ICSC.

How do schools participate to win these awards?

Schools automatically participate when students register using the school's name. Please ensure all students enter the school name accurately and consistently. We also encourage teachers from participating schools to register on our educator platform.

3.4   Further Achievements

Engaging in international competitions like ICSC contributes to personal growth and strengthens your academic profile. It offers a unique opportunity to refine problem-solving skills, engage with real-world computer science concepts, and connect with peers who share a passion for computer science and technology.

Global Network: Successful participants and winners join the international ICSC network: a community of talented, motivated students from around the world. This network fosters collaboration, inspiration, and lasting connections. Access details are shared with qualified participants.

Opportunities (e.g., Internships, Scholarships): The ICSC team curates and shares information about relevant international and regional opportunities, including internships, scholarships, sponsored tech

events, hackathons, and other competitions. These are shared directly with qualifying participants and through the alumni platform.

Regional Meetups & Events: The ICSC team will organize meetups, workshops, and coding sessions in various regions. All participants are welcome to join and engage with fellow enthusiasts in a collaborative learning environment.

Do I receive a hard copy of the certificate(s)?

Hard copies of certificates will be mailed to all 1st, 2nd, and 3rd Prize winners. All other participants, including finalists receiving Honours, will receive high-quality digital certificates (PDF) featuring permanent verification IDs, accessible via:
`https://icscompetition.org/verify`

4   Process and Rounds

The International Computer Science Competition is divided into three rounds: the Qualification Round, Pre-Final Round, and Final Round. Each round features unique challenges that test and deepen your understanding of computer science and problem-solving.

4.1   Qualification Round

The Qualification Round is the starting point of the competition. It includes five computer science problems (labeled A - E), designed to be accessible whilst spanning a range of computer science topics. Each problem is worth 5 points. To qualify for the Pre-Final Round, participants must meet the following minimum scores: 15 points (Junior), 17 points (Youth), or 20 points (Senior). All participants receive participation certificates. There are no fees or registration costs to participate in the Qualification Round.

Qualification Round Deadline

The submission deadline for the Qualification Round is **Sunday, 24 August 2025**, 23:59 UTC+0. This deadline is strictly enforced, so please plan accordingly.

Problems

Problems in the Qualification Round will touch upon foundational concepts, logical reasoning, and introductory algorithmic thinking, ensuring engaging challenges across skill levels. Problems are categorized into conceptual problems and programming problems. The problem type is indicated on a problem sheet by the following symbols:

💡 Conceptual problem: Requires logical or mathematical reasoning, solveable by hand.

</> Programming problem: Requires implementing a solution in code.

Solution and Submission Information

Participants must prepare a solution dcoument with written explanations for **all problems,** including both conceptual and programming problems. Participants may submit their solution document in one of two formats:

- Digitally typed solutions (recommended), using LaTeX or a standard word processor.
- Clear scans or photos of handwritten work. Multiple pages must be combined into a single PDF.

It is essential that participants show their work clearly for all problems. Points are awarded for demonstrating correct reasoning and solution steps, even if the final answer is incorrect. For programming problems, the solution document should also contain a description and explanation of the written program, with inline comments in the actual source code.

Participants must upload their code files in addition to the solution document. Supported languages are Python (3.9), Java (OpenJDK 11), C (C99), and C++ (GCC 15.1). Each programming problem includes a code skeleton that must be used.

- Include only one file per programming problem.
- Keep the main method and skeleton code unchanged to ensure proper execution.
- Avoid external libraries unless explicitly permitted in the problem description.

When you submit your solution, a participant account will be created automatically to help you manage your submission. You can access your account and submission using the credentials you set during the submission process: `https://icscompetition.org/login`. Please verify that your solution and code files have uploaded correctly. Any issues with reading or executing your code will be flagged in your participant

We also ask participants to ensure that their name, school, city, and date of birth are entered accurately during registration, as this information will be used for all certificates.

Announcement of Results

Qualification Round results will be announced on Monday, 8 September 2025. Participants will be notified via email and through their online participant accounts. Performance reports and certificates will also be available through the participant account at: `https://icscompetition.org/login`.

4.2   Pre-Final Round

Participants who successfully complete the Qualification Round are invited to the Pre-Final Round, which features more challenging and engaging problems. At ICSC, each round is designed as part of a continuous learning experience, therefore, participants can expect concepts from the Qualification Round to reappear and be applied in new ways to problems in the Pre-Final Round.

This round consists of six problems, each varying in topic, difficulty, and points:

- 2 Foundational Problems (4 points each): Building on core concepts and knowledge.
- 2 Advanced Problems (6 points each): Addressing more complex scenarios, possibly related to machine learning, optimization, numerical analysis, data structures, algorithmic implementations, and theoretical CS.
- 2 Research Problems (8 points each): Involving engagement with current topics in computer science, drawn from recent research papers in areas like machine learning, natural language processing, or computer vision. Participants are expected to understand concepts described in these papers and answer related questions. This offers direct exposure to current scientific work.

The maximum score is 36 points. To qualify for the Final Round, participants must score at least 16 points (Junior), 20 points (Youth), or 24 points (Senior). Remember that clearly outlining your solution steps is crucial for all problems and contributes significantly to your score.

Registration and Costs

Successful Qualification Round participants can register for the Pre-Final Round via their participant account (`https://icscompetition.org/login`). Organizing a global competition involves significant costs related to evaluation, infrastructure, and material development. While sponsorship helps, we ask participants to contribute a registration cost of 11 EUR for the Pre-Final Round to help sustain ICSC at an international level.

The registration costs supports the resources needed to conduct the competition at scale, including the evaluation process and operational logistics. Financial aid options are available for students facing economic hardship.There are no further participation costs at the competition.

Pre-Final Round Registration Deadline

The registration deadline for the Pre-Final round is Tuesday, 30 September 2025".

Qualified and registered participants will receive access to the Pre-Final Round problems via their online account on Thursday, 2 October 2025. Participants then have four days, until

Sunday, 5 October 2025 (23:59 UTC+0), to work on the problems.

4.3 Announcement of Results

Pre-Final Round results will be announced on Monday, 13 October 2025 via email and the participant portal.

Can I participate only in the Qualification Round?

Yes, you can participate solely in the Qualification Round and receive your certificate. However, you would not proceed to the subsequent rounds or be eligible for finalist awards.

4.4 Final Round

Participants who excel in the Pre-Final Round qualify for the Final Round: a fast-paced online exam consisting of 20 multiple-choice questions.

The exam covers a range of computer science topics, drawing from concepts explored in the Qualification and Pre-Final Rounds. You will have 60 seconds to answer each question. Each question has four possible answers, with only one being correct. A correct answer earns 1 point, and there is no penalty for incorrect answers.

Final rankings, awards, and prizes are primarily determined by the Final Round score. In case of ties, scores from the Pre-Final (and potentially Qualification) Round will be used as tie-breakers.

Final Round Date

All Final Round exams will take place on Tuesday, 28 October 2025.

Final Round Supervision

Finalists take the exam through a secure online portal: `https://icscompetition.org/exam`. The exam should be supervised by a teacher at the participant's school. Finalists must nominate a teacher who agrees to oversee the 20-minute exam session. All necessary instructions and guidelines will be provided directly to the supervising teacher.

The supervising teacher is responsible for ensuring academic integrity by confirming that the finalist does not access any unauthorized materials, websites, or applications during the exam. Alternatively, participants may choose to self-record their session. This would require capturing both screen and webcam activity according to provided guidelines during the entire exam, and uploading the recording for verification. This option does not require a teacher supervisor.

Result Announcement

The final results of the competition, including winners and honors, will be announced on Monday, 3 November 2025.

4.5 Timetable and Deadlines

Please find the key dates for ICSC below. Note that all deadlines are at 23:59 UTC+0. While unlikely, dates are subject to minor adjustments if necessary.

Qualification Round:
  Sunday, 24 August 2025:   Submission Deadline (Qualification Round)
  Monday, 8 September 2025:   Announcement of Results (Qualification Round)

Pre-Final Round:
  Tuesday, 30 September 2025": Registration Deadline (Pre-Final Round)
  Thursday, 2 October 2025:   Release of Problems (Pre-Final Round)
  Sunday, 5 October 2025:   Submission Deadline (Pre-Final Round)
  Monday, 13 October 2025:   Announcement of Results (Pre-Final Round)

Final Round:
  Tuesday, 28 October 2025:   Day of the Final Round Exam (Final Round)
  Monday, 3 November 2025:   Announcement of Results (Final Round)

5   Information for Teachers and Schools

Teachers, schools, and parents are encouraged to share ICSC as an extracurricular learning opportunity for students interested in, or simply curious about, computer science and algorithmic thinking. The primary objective of ICSC is to motivate students to interact with scientific subjects, and to offer a platform for talented individuals to demonstrate and further develop their skills. We provide dedicated tools and resources to help teachers integrate the competition into classroom settings and support their students throughout the process.

5.1   Special School Awards

We recognize the vital role of schools and educators by offering special awards to institutions with high participation rates and exceptional student performance throughout the competition. These awards highlight a strong commitment to fostering talent in computer science (see Section 3.3 for details).

5.2   Teacher Login and Resources

We invite teachers to register for access to the dedicated ICSC Teacher Portal (`https://icscompetition.org/teacher-login`). This platform provides tools to:

- Track students' progress, view results, and download certificates.
- Oversee the supervision process for Final Round participants.
- Coordinate group registration payments for the Pre-Final Round, if needed.

Register as a teacher here: `https://icscompetition.org/teacher-registration`

If you are interested in establishing an ICSC or computer science club at your school, integrating ICSC problems into your curriculum, or need promotional materials like flyers and posters, please visit our website or contact us.

6   Ambassador Program

As a global competition, ICSC depends on passionate ambassadors to reach students across schools, cities, and countries. Ambassadors act as local representatives, promoting ICSC, helping organize activities, and fostering a community centered around computer science. This role provides an excellent opportunity to develop leadership and communication skills, enhance your CV or résumé, and experience the fulfillment of inspiring others to explore computer science and technology.

6.1   Requirements

Applicants must be at least 14 years old, have a genuine interest in computer science and technology, and be willing to invest time in promoting ICSC and related activities within their community. Please note: Ambassador certificates are awarded to those who actively contribute, linked to engaging at least one participate in the Pre-Final Round.

6.2   Responsibilities and Benefits

Ambassadors take on a range of meaningful tasks, including:

- Encouraging students and youth to participate in ICSC.
- Informing schools, technology clubs, and local organizations about the competition.
- Optionally organizing local events, workshops, or study groups related to computer science.
- Serving as a local point of contact and representative of ICSC.

Benefits of becoming an ICSC Ambassador include operating under the ICSC name, gaining valuable organizational experience, and making a tangible impact in your community. Official ambassadors receive access to a personal management page, and an optional ICSC email address.

Possible ambassador activities include:

- Using social media to share ICSC updates and computer science content.
- Presenting ICSC to teachers, school administrators, or student clubs.
- Starting or supporting after-school coding clubs or CS interest groups.
- Organizing info sessions, coding workshops, or problem-solving practice groups.

Find more activity ideas here: `https://icscompetition.org/ambassador-activities`

6.3   Special Awards for Ambassadors

Each year, we recognize outstanding ambassadors for their dedication and impact. These awards highlight individuals who have gone above and beyond in encouraging participation and organizing meaningful activities to promote computer science engagement (see Section 3.2 for details). While recognition is appreciated, your primary motivation should be the desire to inspire others.

6.4   Application Process

To become an official ICSC Ambassador, applicants must complete the online application form. The selection process consists of two stages. In the first stage, applicants submit a CV or résumé along with a brief statement outlining their motivation and plans for promoting ICSC in their region. In the second stage, shortlisted candidates complete a short problem sheet and submit a motivational video of approximately five minutes. All applications are reviewed by the ICSC coordination team.

Apply here: `https://icscompetition.org/ambassador-application`

7   Further Information

7.1   Submission Status Page

All registered participants receive access to a personal online account. Use this portal to manage your submissions, check your results, view performance reports, and download your certificates. Access your account here: `https://icscompetition.org/status`

7.2   Further Materials and Documents

Visit our official website for additional resources that can be used to promote the International Computer Science Competition. Available materials typically include:

- Information Flyers (like this one)
- ICSC Posters (Digital/Printable)
- Official ICSC Logos and Brand Assets

7.3   Newsletter and Notifications

Subscribe to ICSC notifications on our website to stay updated on competition deadlines, upcoming events, relevant computer science opportunities, and other important announcements.

7.4   Social Media Page

Follow us on social media for the latest updates, announcements, and engaging content related to ICSC and computer science. Help us grow the community by sharing our posts and inviting others to join!

Find us at: `www.facebook.com/icscompetition`

And Instagram: `www.instagram.com/theicsc`

7.5   Contact and Questions

If you have questions, feedback, or experience any issues related to ICSC, please first consult our online FAQ section or contact your regional ICSC ambassador, if available (a list is provided on our website). You can also reach out to the central ICSC team via email. We will respond as soon as possible: `info@icscompetition.org`

7.6   Organizers and Partners

The International Computer Science Competition is an independent initiative led by a dedicated team committed to advancing computer science education. Meet the full team online: `https://icscompetition.org/team`. Yhe main coordinators for this year's competition are:

- Program Coordinator: Dr. Rami Aly, `coordinator@icscompetition.org`
- Team Coordinator: Fabian Schneider, `team@icscompetition.org`
- Outreach Coordinator: Stefan Amberg, `outreach@icscompetition.org`

We extend our sincere thanks to all coordinators, volunteers, and partners whose dedication makes the International Computer Science Competition possible for students around the world.