

2025–2026 Competitive Events Guidelines

Technology & Computer Science Case Competition



Technology & Computer Science Case Competition challenges members to analyze a real-world case involving multiple areas of technology and computer science. Members present their findings and solutions to a panel of judges, demonstrating knowledge in areas such as cybersecurity, IT support, information management, networking, programming, website design, and system integration.

Event Overview

Division	Collegiate
Event Type	Team of 1, 2, 3, or 4 members
Event Category	Case Competition
Event Elements	Presentation with a Topic

Educational Alignments

Career Cluster Framework Connection	Digital Technology
NACE Competency Alignment	Career & Self-Development, Communication, Critical Thinking, Professionalism, Teamwork, Technology

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The full case competition and rating sheet can be found starting on page 5. ***The business entity should not be contacted for additional information.***

This case competition for educational purposes only, offering a real-world scenario to help FBLA Collegiate members develop critical skills.

State

Check with your State Leader for state-specific competition information and deadlines.

National

Required Competition Items

Items Competitor Must Provide	Items FBLA Provides
- Technology and presentation items Photo identification - Conference-provided nametag - Attire that meets the FBLA Dress Code	- Table - Internet Access

Important FBLA Documents

- Competitors should be familiar with the Competitive Events [Policy & Procedures Manual](#), [Honor Code](#), [Code of Conduct](#), and [Dress Code](#).

Eligibility Requirements

To participate in FBLA competitive events at the National Leadership Conference (NLC), the following criteria must be met:

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- **Membership Deadline:** FBLA national membership dues must be paid to the specific division by 11:59 p.m. Eastern Time on March 1 of the current school year.
- **Conference Registration:** Members must be officially registered for the NLC and must pay the national conference registration fee to participate.
- **Official Hotel Requirement:** To be eligible to compete, competitors must stay within the official FBLA housing block.
- **State Entry Limits:** Each state may submit up to four entries per event.
- **Event Participation Limits:** Each member may participate in:
 - Two individual or team events, and
 - One chapter event (e.g., *Community Service Project* or *State of Chapter Presentation*).
- **Competitor Responsibility:** Only registered competitors are permitted to plan, research, prepare, and set up their presentations. Advisers and others may not assist.
- **Participation Requirement:** To be eligible for an award, each competitor must complete all components of the event at the National Leadership Conference.
- **Identification at Check-in:** Competitors must present valid photo identification (physical or digital) that matches the name on their conference name badge. Acceptable forms include a driver's license, passport, state-issued ID, or school ID.
- **Late Arrivals:** Competitors will be allowed to compete until such time that the results are finalized, or participation would impact the fairness and integrity of the event, as determined by Competitive Events staff. If judges have left the competitive event area, it is no longer possible to compete. Five penalty points will be assessed for late arrivals in any competitive event.
- **Event Schedule Notes:**
 - Some events may begin before the Opening Session.
 - All schedules are posted in local time for the NLC host city.
 - Schedule changes are not permitted.

Event Administration

This event consists of two phases: a preliminary presentation and a final presentation.

Preliminary Presentation Details

Timing Structure

- **Equipment Set-Up:** 3 minutes
- **Presentation:** 10 minutes (a one-minute warning will be provided)
- **Question & Answer (Q&A):** 5 minutes
- **Important:** Time allocations are exclusive. The presentation must begin immediately after the 3-minute set-up time concludes. Time may not be shifted between segments. Competitors will not interact with judges during the set-up period.

Venue & Format

- Presentations occur in-person at the National Leadership Conference (NLC).
- Competitors/teams are randomly assigned to presentation sections.
- Presentations will take place in a large, open area with a designated space of approximately 10' x 10', which includes a table and chairs for the judges.
- The preliminary round is closed to conference attendees and audience.

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Technology Guidelines

- **Internet Access:** Provided (*Please be aware that internet access at conference venues may be unreliable. Always prepare a backup plan in case the connection is lost or does not work with your device.*)
- Presentations must be delivered using one or two personal devices (laptop, tablet, mobile phone, or monitor approximately laptop-sized).
- If using two devices, one must face the judges and the other must face the presenters.
- Projectors and projector screens are not permitted, and competitors may not bring their own.
- Wireless slide advancers (e.g., presentation clickers or mice) are allowed.
- External speakers are not allowed; audio must come directly from the presenting device(s).
- Electricity will not be available.

Non-Technology Items

- Visual aids, samples, notes, and other physical materials related to the project may be used.
- Items may be placed on the provided table or on the judges table, if space allows.
- No items may be left with the judges following the presentation.

Restricted Items

- Animals, except for authorized service animals.
- Food, which may be used for display only and may not be consumed by judges.
- Links and QR codes, which may be shown but may not be scanned or clicked by judges at any time.

Research

- Information must be supported by credible, well-documented sources.
- Any use of copyrighted material, images, logos, or trademarks must be properly documented.

Team Expectations

- In team presentations, all members must actively participate in the delivery of the presentation.

Final Presentation Details

The presentation guidelines outlined above will apply to the final presentation.

Advancement to Finals

- The top-scoring competitors or teams from each preliminary section will advance to the final round in equal numbers.
- The number of competitors or teams advancing to the final round depends on the number of preliminary sections:
 - 2 sections: Top 6 from each section advance
 - 3 sections: Top 4 from each section advance
 - 4 sections: Top 3 from each section advance
 - 5 sections: Top 3 from each section advance
 - More than 5 sections: Top 2 from each section advance

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Scoring

- The rating sheet will be released with the case competition.
- Preliminary round scores are used to determine which competitors or teams advance to the final round from each section.
- Final round scores determine the final rankings and top award winners.
- Judges are responsible for breaking all ties in both preliminary and final rounds.
- All judging decisions are final. Results announced at the National Leadership Conference are considered official and will not be changed after the conclusion of the National Leadership Conference.

Penalty Points

- Competitors may be disqualified if they violate the Code of Conduct or the Honor Code.
- Five points are deducted if competitors do not follow the Dress Code or are late to their assigned presentation time.

Recognition

- A maximum of 10 entries (individuals or teams) may be recognized per event.

Americans with Disabilities Act (ADA)

- FBLA complies with the Americans with Disabilities Act (ADA) by providing reasonable accommodations for competitors. Accommodation requests must be submitted through the conference registration system by the official registration deadline. All requests will be reviewed, and additional documentation may be required to determine eligibility and appropriate support.

Recording of Presentations

- Unauthorized audio or video recording is strictly prohibited in all competitive events.
- FBLA reserves the right to record presentations for educational, training, or archival purposes. Competitors should be aware that their presentations may be recorded by FBLA-authorized personnel.

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Problem Statement

The Naval Surface Warfare Center Carderock Division (NSWCCD) plays a critical role in advancing naval engineering, ship design, and maritime systems that support the United States Navy's mission readiness and operational effectiveness. As these systems become increasingly software-driven, Carderock relies on advanced programming, modeling, and digital engineering workflows to research, develop, and evaluate innovative technical solutions. Artificial intelligence is rapidly transforming how software is written, tested, documented, and maintained. AI-assisted programming tools such as intelligent code assistants, debugging aids, decision-support systems, and learning tools have the potential to enhance productivity, accelerate prototyping, and support knowledge transfer across the Carderock workforce. However, the adoption of AI-enabled programming tools also introduces challenges related to ethical use, bias, hallucinated outputs, system reliability, and over-reliance on automation.

To responsibly integrate artificial intelligence into its technical workflows, Carderock must ensure that engineers, programmers, and technical teams possess strong AI literacy, apply human-centered design principles, and maintain clear human oversight of AI-supported decisions. AI systems must augment human judgment, not replace it, while aligning with Department of Defense and Department of the Navy responsible AI guidance. Your challenge is to design a conceptual AI assistant or AI-supported programming workflow that helps a user solve a problem, make a decision, or learn something new within a programming or technical context relevant to Carderock's mission. The proposed solution should demonstrate transparent AI reasoning, safeguards against bias or misuse, and a clear plan for human-in-the-loop oversight. Teams must research current AI-enabled programming practices, examine ethical and operational considerations, and iteratively refine their design based on testing and evaluation. The goal is to propose a responsible, AI-assisted programming solution that enhances Carderock's ability to innovate while developing the durable skills required for the future naval workforce.

Overview and Background Information

Background Information

The Naval Surface Warfare Center, Carderock Division (NSWCCD) is one of 10 Warfare Center Laboratories under the Naval Sea Systems Command (NAVSEA)

<https://www.navsea.navy.mil/Home/Warfare-Centers/NSWC-Carderock/>. Carderock's mission is to conduct world-class ship design and engineering that protects our Sailors and Marines and allows them to deliver combat power at sea. Carderock researches, develops, and applies science and technology associated with naval architecture and marine engineering, integration of surface and undersea vehicles, and provides support to the maritime industry. As naval systems become increasingly complex and software-driven, Carderock relies heavily on programming, modeling, simulation, and data analysis to support surface and undersea vehicle design, performance assessment, and technology innovation. These digital engineering capabilities enable rapid prototyping, informed decision-making, and the evaluation of design

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tradeoffs across Carderock's Science and Technology (S&T) portfolio. It is important to know that Carderock is funded to do this work by the individual customers which are primarily NAVSEA and program offices, including the Office of Naval Research. Carderock does not have a direct appropriation from Congress. A small but important fraction of the work performed at Carderock is paid for by private customers in the maritime and associated industries.

Carderock Core Competencies include:

- Ship integration and design
- Environmental quality systems
- Naval architecture, including hull forms and propulsors
- Structures and materials
- Signatures and silencing systems
- Vulnerability and survivability systems

This study is intended to impact the Science and Technology (S&T) portion of Carderock's mission by exploring how artificial intelligence can responsibly support programming and technical workflows used in early-stage research and development. As AI-enabled tools become more prevalent, Carderock must ensure that such systems are designed and used in ways that are ethical, transparent, and aligned with Department of Defense and Department of the Navy guidance.

By focusing on AI literacy, human-centered design, and iterative development, this competition encourages participants to propose AI-assisted programming tools or workflows that enhance Carderock's ability to innovate while preserving human judgment and accountability.

Carderock's Role

The Naval Surface Warfare Center Carderock Division (Carderock) plays a critical role in advancing new technologies that deliver timely, affordable, and effective technical capabilities to the fleet and warfighter. Carderock supports the full life cycle of naval systems—from basic and applied research through advanced development, test and evaluation, in-service engineering, and sustainment, by applying rigorous engineering, analysis, and innovation. As naval systems become increasingly complex and software-intensive, Carderock relies on advanced programming, modeling, simulation, and digital engineering workflows to accelerate innovation and inform technical decision-making. These software-driven processes are essential for evaluating design tradeoffs, integrating emerging technologies, and rapidly transitioning concepts from research to operational use. Affordability, agility, and speed of delivery remain paramount across all phases of Carderock's mission. To maintain technological advantage, Carderock collaborates extensively with external partners across government, academia, and industry to augment its internal expertise and research capacity. These collaborations require effective technical workflows that support knowledge transfer, experimentation, and early-stage development while maintaining high standards of security, reliability, and ethical responsibility.

As artificial intelligence becomes more prevalent in software development and engineering analysis, Carderock must determine how AI-enabled programming tools can responsibly support its workforce. This includes identifying where AI can assist with tasks such as code development, debugging, testing, documentation, and learning, while ensuring appropriate human oversight, transparency, and accountability. Your challenge is to design a conceptual AI assistant or AI-supported programming workflow that aids Carderock engineers,

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programmers, or technical teams in solving problems, making decisions, or learning within a mission-relevant context. The proposed solution should demonstrate responsible AI integration, clear decision-making logic, and safeguards against misuse or over-reliance on automation. The primary users of this solution are envisioned to be Carderock scientists, engineers, and Science & Technology (S&T) managers, with consideration for broader stakeholder awareness across the organization.

Specific Elements to Address

One of the imperatives of the Carderock mission today is to enhance how programmers, engineers, and technical teams design, develop, and evaluate AI-enabled systems that are ethical, reliable, and human-centered. This challenge emphasizes AI literacy, responsible programming practices, and durable skills needed to collaborate effectively with artificial intelligence.

Some elements the study and design process should cover are:

- **Research** the state of AI in programming and software development. Teams should investigate:
 - Common applications of AI-assisted programming tools
 - Known limitations and risks of AI systems, including bias, hallucinations, and misuse
 - The evolving role of human oversight in AI-supported workflows
 - AI literacy skills required for responsible and effective use of AI in programming contexts

Teams should use credible sources to inform their understanding of responsible AI use, including but not limited to:

- (2020) DoD Responsible AI Strategy & Implementation Pathway: <https://media.defense.gov/2024/Oct/26/2003571790/-1/-1/0/2024-06-RAI-STRATEGY-IMPLEMENTATION-PATHWAY.PDF>
- (2020) DoD AI Education Strategy: <https://www.ai.mil/Portals/137/Documents/Resources%20Page/DoD%20AI%20Education%20Strategy.pdf>
- (2023) DoD Data, Analytics, and AI Adoption Plan: https://media.defense.gov/2023/Nov/02/2003333300/-1/-1/1/DOD_DATA_ANALYTICS_AI_ADOPTION_STRATEGY.PDF
- (2023) DON Guidance on the Use of Generative AI and LLMs: <https://www.doncio.navy.mil/ContentView.aspx?id=16442>
- **Survey** the best practices, case studies, or market research in other Navy and DoD research & development organizations related to the ethical design and deployment of AI systems.

Teams should consider:

- User-centered and bias-aware design principles
- Human-in-the-loop decision making
- Transparency in AI reasoning and outputs
- Strategies for validating and verifying AI responses
- Communication practices that help users understand AI limitations

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- **Engage** with a subject matter expert, or analyze expert-informed resources, to better understand real-world expectations, challenges, and ethical considerations related to AI-assisted programming or system design.
- **Identify** a clear problem, task, or learning challenge that could be supported by an AI assistant.
- **Design** a conceptual AI assistant or workflow that helps a user solve a problem, make a decision, or learn something new.

The design must include:

- Clear instructions for user input
- Rules, logic, or reasoning used to determine outputs (including the use of selection or decision pathways)
- At least one explicit explanation of how AI is being used
- Safeguards to prevent bias, harm, or misuse
- A plan for human oversight and error checking

The tool does not need to be fully functional but must clearly demonstrate AI decision-making, ethical considerations, and usability.

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2025– 2026 Technology & Computer Science Case Competition Presentation Rating Sheet

Expectation Item	Not Demonstrated	Below Expectations	Meets Expectations	Exceeds Expectations	Points Earned
Content					
Demonstrates understanding of the case and issues to be solved	<i>No description or case synopsis provided, and no issues defined</i>	<i>Describes and provides case synopsis OR defines the issues</i>	<i>Describes and provides case synopsis AND defines the issues</i>	<i>Demonstrates expertise of case synopsis AND definition of the issues</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Research <i>Demonstrates understanding of AI-assisted programming through relevant research, including current applications, limitations, risks, ethical considerations, and the role of human oversight.</i>	<i>No evidence of research related to AI-assisted programming or AI literacy.</i>	<i>Limited or unclear research on AI in programming; information may be inaccurate, outdated, or weakly connected to the prompt.</i>	<i>Research demonstrates a clear understanding of current AI-assisted programming practices, benefits, and limitations, with appropriate use of credible sources.</i>	<i>Research is comprehensive and well synthesized; clearly connects AI-assisted programming practices to Carderock's mission and DoD/DON responsible AI guidance.</i>	
	0 points	1-7 points	8-13 points	14-15 points	
Survey <i>Evaluates best practices, case studies, or market research related to the responsible and ethical design of AI systems used in programming or technical workflows.</i>	<i>No evidence of surveying best practices related to AI design or deployment.</i>	<i>Minimal or unclear examples of best practices; sources may lack relevance or depth.</i>	<i>Identifies and summarizes relevant best practices such as human-in-the-loop design, transparency, bias mitigation, and validation of AI outputs.</i>	<i>Provides a diverse and well-researched set of best practices with thoughtful analysis of how they can be applied to AI-assisted programming at Carderock.</i>	
	0 points	1-7 points	8-13 points	14-15 points	
Design <i>Effectiveness of the conceptual AI assistant or AI-supported workflow design in addressing a defined problem, demonstrating clear logic, ethical safeguards, and appropriate human oversight.</i>	<i>No AI tool or workflow is presented, or the design is unrelated to the prompt.</i>	<i>The AI tool or workflow is incomplete, unclear, or weakly aligned to user needs or ethical considerations.</i>	<i>A functional and well-organized AI-assisted tool or workflow is presented that clearly supports user needs and demonstrates responsible AI use.</i>	<i>The AI-assisted tool or workflow is innovative, user-centered, and highly applicable; it clearly enhances human decision-making while maintaining transparency and oversight.</i>	
	0 points	1-7 points	8-13 points	14-15 points	
Substantiates and cites sources used while conducting research	<i>Sources are not cited</i>	<i>Sources/References are seldom cited to support statements</i>	<i>Professionally legitimate sources & resources that support statements are generally present</i>	<i>Compelling evidence from professionally legitimate sources & resources is given to support statements</i>	
	0 points	1-7 points	8-13 points	14-15 points	

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Expectation Item	Not Demonstrated	Below Expectations	Meets Expectations	Exceeds Expectations	Points Earned
Presentation Delivery					
Statements are well organized and clearly stated	<i>Competitor(s) did not appear prepared</i>	<i>Competitor(s) seemed prepared, but flow was not logical</i>	<i>Presentation flowed in logical sequence</i>	<i>Presentation flowed in a logical sequence; statements were well organized</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Exhibits self-assurance, poised body language, and strong vocal delivery that enhances overall presentation	<i>Competitor(s) did not demonstrate self-confidence</i>	<i>Competitor(s) demonstrated self-confidence and poise</i>	<i>Competitor(s) demonstrated self-confidence, poise, and good voice projection</i>	<i>Competitor(s) demonstrated self-confidence, poise, good eye contact, voice projection, and delivery</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Demonstrates the ability to effectively answer questions	<i>Does not respond to questions or responses are completely off-topic.</i>	<i>Provides incomplete or unclear answers that show limited understanding.</i>	<i>Responds accurately and clearly to most questions, showing adequate understanding.</i>	<i>Responds confidently with clear, accurate, and thoughtful answers that enhance the overall presentation.</i>	
	0 points	1-6 points	7-8 points	9-10 points	
Staff Only: Penalty Points (5 points for dress code penalty and/or 5 points for late arrival penalty)					
Presentation Total (100 points)					
Name(s):					
School:					
Judge Signature:					Date:

Comments: