

Interactive Application and Video Game Development (Team of 2 Members)

Description

The Interactive Application and Video Game Development contest evaluates a team's ability to design, develop, test, and present a functional interactive application or video game prototype using industry-standard tools, workflows, and practices under timed competition conditions. Projects that address a real-world issue, community need, or environmental concern.

Competitors must demonstrate applied knowledge of software development, interactive systems, user experience design, debugging, optimization, and professional collaboration by building a playable prototype entirely onsite during the NYC SkillsUSA Leadership and Skills Conference.

Design Challenge Requirement

Each team must develop an interactive application or video game prototype that addresses a real-world issue, community need, or environmental concern.

Competitors must:

- Clearly identify the real-world issue or community need being addressed
- Demonstrate how gameplay mechanics or interactive systems directly connect to that issue
- Show thoughtful problem-solving through intentional interactive design
- Explain the intended impact of their solution during the live presentation

The selected issue must be appropriate for a professional educational setting.

No prior project work is permitted.

Eligibility

Open to active NYC SkillsUSA members enrolled in programs focused on creating interactive applications and/or video game design and development as occupational objectives.

Clothing Requirements

- NYC SkillsUSA T-Shirt
- Black Dress Slacks (accompanied by black dress socks or black or skin-tone seamless hose) or black dress skirt (knee-length, accompanied by black or skin-tone seamless hose).
- Black leather shoes that are not backless or open toe

Equipment and Materials

A. Supplied by NYC chair/committee:

- a. Workspace

- b. 110V Outlet

B. Supplied by contestant:

- a. Laptop computer capable of running development software
- b. Pre-installed development software (Unity, Unreal Engine, Godot, Visual Studio, etc.)
- c. Mouse (required)
- d. Power cord
- e. Headphones (recommended if using audio)
- f. Controller (optional, if used for gameplay)
- g. External storage device (USB drive for submission backup)

C. Optional:

- a. Drawing tablet
- b. Stylus
- c. Wired keyboard (if not using laptop keyboard)

All required software must be installed prior to the competition. No software installation will be permitted during the contest.

Scope of the Competition

1. Planning and Development Workflow

1.1 Competitors must demonstrate an industry-aligned workflow by:

- 1.1.1 Interpreting the design brief and technical constraints
- 1.1.2 Defining a minimum viable product (MVP)
- 1.1.3 Establishing task ownership between team members
- 1.1.4 Managing time using short development milestones

2. Core Technical Implementation

2.1 The prototype must include all of the following:

2.1.1 Player or User Input Handling

- 2.1.1.1 Keyboard, mouse, controller, or touch input
- 2.1.1.2 Input must be responsive and mapped intentionally
- 2.1.1.3 Controls must be documented

2.1.2 State Management

2.1.2.1 At least three distinct states, such as:

- Menu
- Active gameplay or interaction
- End, success, or failure state

2.1.3 Proper transitions between states

2.2 Logic and Systems Design

2.2.1 At least one system that updates dynamically (e.g., scoring, health, timer, progression, inventory, dialogue branching)

2.2.2 Logic must be modular and readable (no single monolithic script handling everything)

2.3 Event Handling

2.3.1 Use of events, triggers, or listeners to respond to player or user actions

2.3.2 Demonstrates understanding of cause-and-effect systems

3. User Interface and User Experience (UI/UX)

3.1 Functional main menu with start option

3.2 In-application or in-game HUD or interface

3.3 End state screen (completion, success, or failure)

3.4 UI must:

- Be readable at standard viewing distance
- Use consistent layout and visual hierarchy
- Provide feedback to user actions (visual, audio, or motion feedback)

4. Visual and Asset Development

4.1 All assets must be:

- Created onsite, or
- Generated using engine primitives or procedural tools

4.2 Visual design must:

- Follow a consistent style
- Support readability and gameplay clarity

4.3 Asset organization must follow basic industry conventions:

- Logical folder structure
- Meaningful file naming

5. Audio Implementation

5.1 If audio is included:

- At least two audio types (e.g., background audio and interaction sound)
- Audio must respond to game or application state
- Audio levels must be balanced and not disruptive

6. Performance, Debugging, and Stability

6.1 Teams must demonstrate basic production-quality awareness by:

- Testing the application prior to submission
- Resolving major errors and logic flaws

- Ensuring the application runs without crashing
- Maintaining reasonable performance on standard competition hardware

Judges will evaluate stability during live testing.

7. Professional Coding and Project Practices

7.1 Teams are expected to demonstrate professional development habits, including:

- Clear and consistent naming conventions
- Logical project organization
- Commenting or documentation where appropriate
- Separation of responsibilities across team members

8. Professional Presentation and Communication

8.1 Teams must deliver a live demonstration and explanation that includes:

- Summary of the problem and target user
- Real-world Issue, Community Need, or Environmental Concern that was addressed
 - Clearly identify the real-world issue or community need
 - Demonstrate how gameplay mechanics connect to that issue
 - Show thoughtful problem-solving through interactive design
 - Explain impact during their live presentation
- Explanation of the core mechanic or interaction
- Overview of technical decisions and trade-off
- Reflection on challenges and problem-solving strategies

Deliverables

1. Runnable Prototype

- Must execute locally without internet access
- Controls and objective must be clearly explained

2. Mini Design Brief (One Page)

Created onsite and includes:

- Title
- Project summary and target audience
- Real-world Issue, Community Need, or Environmental Concern that was addressed
 - Clearly identify the real-world issue or community need
 - Explain how gameplay mechanics connect to that issue
- Main selling points
- Estimated total playtime

- Measured performance metric (e.g., frame rate during gameplay, load time, level completion time during testing, build size, or identified and resolved bugs). Teams must identify at least one measurable technical indicator of performance.
- Core features implemented
- Technical systems used
- Team roles and responsibilities
- Known limitations and future improvements

3. Live Demonstration and Oral Presentation

- Maximum of Ten (10) minutes total

Knowledge and Skill Areas Assessed

- Software development fundamentals
- Interactive systems and logic
- UI/UX principles
- Debugging and optimization
- Team collaboration
- Professional communication

General Rules and Regulations

- No internet access during the contest
- No pre-built projects, codebases, or asset packs
- No AI-generated code or assets
- Teams must begin from a blank project or default engine template
- Judges may verify project structure and timestamps