**DSBN Skills 2024 - Regional CODING Challenge**
**Secondary Level Scope**

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**Purpose of the Contest:**
To test the skill and knowledge of each student in the area of computer programming and to help prepare each student for a career with coding.

| Event Details: | Date: Time: Location: | Wednesday February 28, 2024 (February 29th Snow Date) 8:30 AM - 2:00 PM Niagara College, Welland Campus, Rm TBD |
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**Maximum Number of Competitors:** 20

**Skills and Knowledge to be Tested:**
To demonstrate the skills and knowledge necessary to solve problems using computer programming. Students should be prepared for the competition by developing the following knowledge/skills:

| Problem Solving/Knowledge: | Programming Skills: |
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| ● Flowcharts/Pseudocode ● User Requirements ● Testing ● Mathematics ● Software Presentation | ● Variables ● **File Input/Output (I/O)** ● Arrays (Lists) ● Control Structures ● Console-Based Applications |

**Regional Level Programming Languages Note:**
At the regional level, students are permitted to use the programming language of their choice, however, **artificial intelligence tools** which can assist in writing code (such as *ChatGPT*, *GitHub Copilot*, and *Replit Ghostwriter*) are not allowed.

**Provincial Level Programming Languages Note ( ⭐ ):**
Competitors at the provincial level *must* use **C**, **C++**, **C#**, **Java**, or **Rust**. It is expected that if a student participates in the DSBN competition using a language other than C, C++, C#, Java, or Rust, that they will familiarize themselves with one of the allowed languages if they move on to the provincial competition.

**Safety Requirements:**
Competitors are required to follow all industry safety standards during the competition.

**Equipment, Materials, Tools, and Supplies:**

**Equipment Supplied by the Competitor:**
- The competitor must bring a laptop or desktop computer with the IDE of their choice, for the programming language of their choice, installed.
- The use of **Replit** (*without Ghostwriter*) as an IDE is allowed.
- The competitor must have a working HackerRank (https://www.hackerrank.com/) account to submit solutions to the shorter programming challenges.

**Clothing Requirements:**
- Casual business attire must be worn along with DSBN Technology shirts.

**Judging Criteria:**

| Major Program (AM) | | 70% |
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| - Flowchart / Pseudocode / Planning | 10% | |
| - Program | 50% | |
| - Presentation / Demo | 10% | |
| Shorter Coding Problems (PM) | | 30% |
| Total Possible Score | | 100% |

**Registration:**
Students must register online with all of the required information completed to be eligible to participate by filling out this form (https://technological-skills-challenges.dsbn.org/ ).
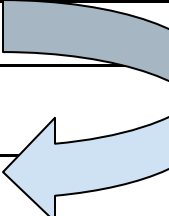
**Transportation:**
Students are responsible for their own transportation.

**Instructor's Role:**
Instructors are expected to acquaint their student participants with all of the enclosed guidelines. Teachers may accompany their students or visit any time during the competition but may not assist the competitors during the challenge.

**Competition Agenda:**

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| **8:30 AM** | Orientation in the Auditorium |
| **9:00 AM** | Competition Begins (AM) |
| **11:30 AM** | Lunch |
| **12:00 PM** | Competition Resumes (PM) |
| **2:00 PM** | Competition Ends |

During the afternoon portion of the contest, each student will be assigned a time to present their morning solution to demonstrate their major program to the judges.

Each presentation will be **5 minutes** in length.

**Major Program Notes:**
- Must show evidence of planning through the use of pseudocode or a flowchart.

- The program must be able to temporarily store data, and be able to manipulate it (add new data, remove data, change data, etc.).

- The program must accept input and show output through the console.
- The program must use a menu system to inform the user how input should be made.

- The program must have the ability to **read data from a plain text file** that will be made available at the start of the challenge.

**Shorter Coding Problems Notes:**
- No need to show any planning, pseudocode, or flowcharts.

- There will be 3 (three) challenges available to solve.
- These challenges may involve the use of advanced programming concepts or mathematics.

- These challenges will be available on the **HackerRank** platform.
- Students can become familiar with HackerRank by trying to solve some sample problems here: https://www.hackerrank.com/dsbn-test

- At the regional level, these challenges will further help the judges determine who should move on to the provincial competition.
- At the provincial level, there **will not** be any shorter coding problems to solve.