



Memorandum

TO: Secondary Principals
 Secondary Vice-Principals
 Secondary Computer Science Teachers

From: Catherine McVie, Superintendent of Program
 Paul Chisholm, Special Assignment Teacher - Computers, P.C.
 Gateway Education Centre

Date: March 23, 2006

Subject: UCDSB Computer Programming Competition

The Upper Canada District School Board's annual computer programming competition will be taking place on Thursday, April 6, 2006 from 1:00 p.m. - 4:00 p.m. (teams need to have their equipment setup and be ready to start the competition at 1:00 p.m. sharp.) School teams will compete at Tagwi Secondary School or Thousands Islands Secondary School as outlined in the table below.

Each school may enter a maximum of two (2) teams. A team consists of no more than 4 members. To try to encourage female student participation, schools may also enter a third all-female team. The all-female entry must consist of three or four female students. All participating students must be registered as full time students. One teacher coach may accompany and coach all school teams.

Tagwi Secondary School Site (Pizza will be served after competition)	Thousand Islands Secondary School Site (Pizza will be served before competition)
Char-Lan District High School	Almonte & District High School
Cornwall Collegiate & Vocational School	Athens District High School
General Vanier Intermediate School	Brockville Collegiate Institute
Glengarry District High School	Carleton Place High School
North Dundas District High School	Gananoque Secondary School
Rockland District High School	North Grenville District High School
Rothwell-Osnabruck School	Perth & District Collegiate Institute
Russell High School	Rideau District High School
St. Lawrence Intermediate School	Seaway District High School
Tagwi Secondary School	Smiths Falls District Collegiate Institute
Vankleek Hill Collegiate Institute	South Grenville District High School
	Thousand Islands Secondary School

To register your team(s) please visit the following URL and complete the online registration form.

http://www.gatewayec.on.ca/comp_pro_contest

Please note that the deadline for registration is: **Tuesday, April 4, 2006 at 3:00 p.m.**

General Contest Information

The contest will consist of four problems to be solved in 3 hours. All problems will be distributed at the start of the contest. Only one copy of the problems will be given to each team.

Team Makeup

A team consists of no more than 4 members, each a full-time student of the school. Team coaches are responsible for ensuring correct team makeup. Teams may compete with fewer than four members, but this may be a disadvantage to the team. Only two teams are permitted per school.

Team Work Station

Each team is responsible for bringing and setting up their own equipment for their workstation, which consists of:

- one computer with a 3.5-inch diskette drive
- sufficient extensions cords
- a power bar
- printers are not allowed, but you may use hand held calculators.

Programming Languages

Only standard programming language installs are allowed. Add-in libraries or other resources are not allowed. Libraries written by the participants are not allowed. Students are also allowed to bring any reference manual provided by a hardware manufacturer or the producer of the software. However, there is a limitation of ONE (1) manual for each programming application. Third party reference materials are not allowed. Any additional publications such as other references or magazine articles are not allowed. The manuals must be free of marks and may be inspected by the contest judges.

Come Early

Teams must arrive at the contest site early to set up their work stations prior to the beginning of the contest. Allow 45-60 minutes for finding the workstation site and setting it up.

Coaches' Participation

Coaches must advise their team about the following rules and expectations concerning team conduct during the competition. Coaches are responsible for team membership, transportation, supervision and the team workstation (equipment and supplies).

Contest Procedures

All teams will be given one copy of the problem set (consisting of 4 problems) to solve during the 3 hour contest period. When a team feels that it has a correct solution, the team will indicate to a judge that they are ready for scoring by holding up their scoring

sheet. A judge will come to the team and give them an official problem submission time and a disk that contains a set of test data. The team's program is to read the test data from the diskette. After the team's solution has been started there is to be no further student / computer interaction unless specifically directed by the problem to do so. The resulting output will be compared with a solution sheet and a score will be assessed by the judge based on the number of correct answers generated by the program.

Team Rules Regarding The Solution Of A Problem

The following rules apply in general to all problems. Actual problem descriptions may give more specific directions which would override or add to the following.

Follow the problem description carefully. Judges are using it to judge your program. All data are to be read from data files. The data files will be called DATA11, DATA21, DATA31, DATA41 for the first submission to the respective problem.

The data files will be called DATA12, DATA22, DATA32, DATA42 for the second submission to the respective problem. Groups must be careful to have the correct data file name in their program. A failed run as a result of an incorrect filename is the only option the judge has. No opportunity to change the file name for a first submission will be given.

Teams are responsible for the creation of their own test data. This test data should satisfy your team that your algorithm (solution) can handle all stated and implied data situations.

Efficiency techniques may be a factor on some problems. Any successful program execution must be fully completed within 30 seconds execution time. For example, if a program did take 60 seconds minutes to run and even if the output was partially or totally correct the problem would receive zero (0) points because the program took too long to finish.

Computer technology, being what it is, has a tendency to "crash" at the most inopportune time. Make sure you save and backup your programs while writing them in case of electrical or hardware problems. The team is responsible for any backing up or re-booting that may be required due to equipment failure.

Decisions of the judges are final. All concerns are to be resolved before the announcements of final standings at the end of the contest.

Contest Scoring

Each problem earns points in three areas:

Program Task Points: Each question is worth 100 points. Most questions have five outputs each worth 20 points, but there can be other scoring schemes for particular questions.

Perfect Run Points: If the first run is perfect, an additional 10 points is added to the score. These points are not granted on a second attempt.

Time Points: 1 point is added for every 5 minutes a problem is handed in early. Time Points are recorded only if at least some Program Task Points are earned.

For the following examples, assume a contest began at 1:00 p.m.

Example #1

If a team submits a correct solution to a problem on their first try at 2:17 p.m. For this problem the team earns:

- 100 For a PERFECT solution
- 10 For a PERFECT first run
- 20 For Time Bonus Points
- 130 Total Points (100+10+20)

Example #2

If a team submits a solution with 4 of 5 output values being perfect at 2:23 p.m. For this problem the team earns:

- 80 For a partially correct run (4 out of 5)
- 0 There would be zero Perfect solution points
- 19 For 97 minutes of remaining time
- 99 Total Points

Example #3

If the team had submitted using the Example #2 above and would like to resubmit the score would be calculated as follows. Assume that on the second set of test data (not the same as the first set of test data) they had only 3 of the 5 output values correct at a time of 3:00 p.m. For this problem the team's previous score for this problem is cancelled (including time points) and the team would earn:

- 60 For a partially correct run (3 out of 5)
- 0 A second run is not perfect
- 12 For 60 minutes of remaining time
- 72 Total Points

Example #4

If the team had submitted using the Example #2 above and resubmitted with a Perfect solution at 2:45 p.m. For this problem the team's previous score for this problem is cancelled (including time points) and the team would earn:

- 100 For a PERFECT solution
- 0 A second run is not perfect
- 15 For 75 minutes of remaining time
- 115 Total Points