2018 · 2019

Computer Science Handbook

For Contest Directors, Coaches and Contestants

Notice of Non-Discrimination
The University Interscholastic League (UIL) does not discriminate on the basis of race,
color, national origin, sex, disability, or age in its programs.
See Section 360, Non-Discrimination Policy, UIL *Constitution and Contest Rules*.
https://www.uiltexas.org/policy/constitution/general/nondiscrimination

The following person has been designated to handle inquiries regarding the non-discrimination policies:
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For further information on notice of non-discrimination, visit
http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm
or call 1-800-421-3481 or contact OCR in Dallas, Texas:
Office for Civil Rights
U.S. Department of Education
1999 Bryan Street, Dallas, TX 75201-6810
Telephone: 214-661-9600, Fax: 214-661-9587, TDD: 800-877-8339
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University Interscholastic League
Computer Science Handbook

The details in this handbook expand upon the information in the UIL Constitution & Contest Rules. In addition to this handbook, coaches, contestants and contest directors should read Sections 900-906 for information pertaining to all contests. See also the Academic Quick Reference Chart found at the end of this handbook and on the UIL website.

From the UIL Constitution & Contest Rules:

Section 928: HIGH SCHOOL COMPUTER SCIENCE CONTEST

(a) **THE CONTEST.**

    (1) Purpose. The Computer Science Contest challenges students to study a broad range of areas in computer science, to gain an understanding of the significance of computation as well as the details of programming, to be alert to new technology and information in computer science, to gain an understanding of the basic principles as well as knowledge of the history and philosophy of computer science and to foster a sense of enthusiasm about computer science.

    (2) Format.

    (A) Test Questions. The written exam for individual and team contestants and a programming session for teams will focus on computer science programming skills rather than on mathematical engineering or other subject applications.

    (B) Materials. For the programming sessions, teams shall bring their own media for submitting solutions to judges when applicable. Teams shall be prepared to bring a computer to use for competition, including all necessary hardware, cables and software. Each team may use only one computer during the contest. A printer may be used but is not required. Refer to the *Computer Science Handbook* and UIL website for additional guidelines.

    (C) Calculators. Calculators are not permitted. During the programming portion of the contest, a computer's included calculation functions may be used.

(b) **ENTRIES.**

    (1) Individual Competition. Each member high school may enter as many as four individuals in the district meet.

    (2) Team Competition. A school shall have a minimum of three contestants compete in order to participate in the team competition, which shall include a written exam and a team programming session. For teams with four members, the team's coach shall decide which three members will participate in programming. Schools that do not participate in the programming session shall not qualify for team placement, points or advancement, unless only one school entered enough contestants for team competition. If only one team is entered, conducting the programming session is encouraged but not required.

(c) **QUALIFICATION.** Individuals, team and wildcards qualify for the next level of competition according to Section 902.

(d) **TIES.**

    (1) Individual Competition. In the event of a tie, the formula for percent accuracy shall be used to break the tie. The formula is: percent accuracy equals number of

problems correct divided by number of problems attempted. The contestant with the highest percent accuracy shall be awarded the higher place. If the percent accuracy scores are the same, then a tie exists.

(2) Team Competition. If two or more teams tie for first, second or third place, the scores in the programming session will be considered first. If a tie still exists, the scores on the written exam will be considered, followed by a total written exam score tiebreaker if necessary. For four-member teams, the total written exam score tiebreaker means adding in the fourth score. For three-member teams no additional score is added. The team with the highest total written exam score wins the tiebreaker. If a tie still exists, it will not be broken.

Computer Science
Contest Rules and Procedures

1. **CONTEST ROSTER.** A contest roster listing contestants will be created from schools' online entries and provided to the contest director.

2. **TEST CONTENT.** Java is the designated programming language for UIL Computer Science. Test content shall cover topics in Computer Science and Java programming as specified in topic lists and other materials available on the UIL website. The designated compiler for programming is the Java Development Kit (JDK). Version specifications shall be as posted on the Computer Science page of the UIL website. Teams may use any standard integrated development environment (IDE) package provided it utilizes the specified version of the JDK.

3. **CONTEST COMPONENTS.** The Computer Science contest includes two components: a 45-minute multiple-choice exam (the "written exam") that is used for individual placement and figured into team scoring, and a two-hour hands-on programming component that is used in team scoring only. The same contestants from a school participate in both components. All contestants shall take the written exam. For programming, three team members shall participate. If a team has four members, the coach determines which three team members will participate in programming and which team member will only take the written exam. A minimum of three contestants from a school is required to participate in team competition. If a school has fewer than three entries, those contestants will compete as individuals only and thus take only the written exam.

4. **PROGRAMMING PARTICIPATION.** If two or more teams are entered in the contest, the programming session shall be conducted and all teams shall participate. (If only one team is entered, conducting the programming session is recommended but not required.) Teams should utilize the full two hours of contest time in the programming session. Teams shall be actively engaged in working on contest problems during the contest period. A team that does not participate in programming shall not receive team placement, points or advancement, except in cases where only one school enters a team at a district contest and the district opts not to conduct a programming session. The UIL does not recommend allowing teams to leave the programming session early; at the discretion of the contest director, arrangements may be made to address specific cases or extenuating circumstances.

5. **NUMBERING CONTESTANTS.** For the written exam, each contestant will be assigned a number. This number should be indicated on the contest roster and included on the contestant's test and answer sheet. Contestants shall not write their name or the name of their school on their answer sheets. For the programming session, it is acceptable to identify each team with the name of their school.

6. **ROLL CALL.** The contest director will call roll from the contest roster and replace any contestant who is not present with a certified substitute at district or the certified alternate or team substitute at regional and state. All persons except participating contestants, the contest director, assistants and monitors will be dismissed from the room before the contest begins.

7. **SUBSTITUTIONS AND ALTERNATES.** Schools may replace individual contestants on the official district meet roster with a substitute so long as the substitute presents the contest director with the appropriate documentation. Alternates may compete at region and state only in the absence of an individual who won first, second or third place in the preceding competition. If a member of a school's team cannot compete at region or state, only one substitution may be made. See the UIL Constitution and Contest Rules Sections 903-905 for clarification.

8. **SEATING.** For the written exam, contestants will be seated sparsely around the room and away from other contestants from the same school. For programming, each team should have a table with adequate space to set up their computer system and access to an electrical outlet. Each team is allowed to use only one computer system; team members work collaboratively during the programming session.

9. **LATE ARRIVAL**. Except in emergencies, the UIL does not recommend allowing contestants to enter the room after the written exam or programming session has begun. The decision to allow late entry rests with the contest director of the meet.

10. **MATERIALS - WRITTEN EXAM.** Contestants provide their own pens or pencils. Contest directors shall provide contestants with scratch paper to be distributed with the test and answer sheet. Contestants are permitted to write on the exam and on the scratch paper. No notes or other materials are allowed during the contest. No calculators are permitted.

11. **MATERIALS - PROGRAMMING.** Each team will use one computer system during the programming session, which means one CPU, one display and one keyboard/mouse. A printer is also allowed but is not required. A team may also bring a backup system in case of equipment failure; the backup must remain powered off and stowed unless needed. Some host sites may have computers available for teams to borrow, which is acceptable, but teams should always be prepared to bring their own computer. A team may use up to two programming language reference manuals or textbooks. These must be published texts that are reasonably free of handwritten notes. The contest director of the meet has final authority to approve or disapprove any text or reference book. A book on CD or on the computer's hard drive is not an acceptable reference and must be removed from the team's computer before the contest. A team's computer may include standard PC software (office applications, antivirus, etc.), the JDK and an associated IDE package (including samples and help files), the Java API's and Java API reference (Javadoc). A team's computer shall not include any code previously written by students, coaches or other individuals for any purpose, including other contests, classwork or other projects; all such files must be removed from the team's computer before the contest.

12. **ANSWER SHEETS.** Answers for the written exam shall be written on the answer sheet in the space provided. Contestants should not use the answer sheet for calculations or other marks. Graders will not consider answers written on the test or scratch paper. Scantron or similar systems may be used for the written exam in lieu of the provided answer sheets.

13. **ANNOUNCEMENTS.** Following roll call and prior to the start of the test, contest directors shall read aloud to contestants the section of this handbook titled Announcements Prior to Conducting the Contest.

14. **START AND STOP SIGNALS.** Contest directors should give a clear signal to start. Periodic time warnings may be given at the discretion of the contest director. A clock should be provided to indicate the remaining time in the contest at a position easily seen by all contestants. For the written exam, if contestants are in the process of writing down an answer when the stop signal is given, they may finish writing that answer; they may not do additional work on a test question. End-of-contest procedures for the programming session will depend on the platform being used; see the Conducting the Contest section for details.

15. **TIMING AND ELECTRONIC DEVICES.** Contestants may use timing devices provided they do not emit audible signals during the contest. Cell phones, tablets, smart watches or any device that can wirelessly connect to the Internet, may not be used during the contest. Music players, headphones, etc. may not be used in the testing room. Electronic devices not allowed in the contest should be turned off and should not be accessible during testing.

16. **LEAVING THE CONTEST ROOM - WRITTEN EXAM.** For the written exam, contestants shall remain quietly in their seats throughout the entire 45-minute testing period. Contestants who finish early should use the remaining time to check their work. In the event of a medical or other emergency, the student shall request permission to leave the contest room and shall be

accompanied by a monitor while outside the contest room. Students who leave and return to the contest room during the contest without permission shall be disqualified.

17. **LEAVING THE CONTEST ROOM - PROGRAMMING.** For the programming session, contest directors should establish procedures for restroom access and announce these to contestants before the contest begins. No more than one team member at a time should leave the contest room. Contest monitors should be assigned to keep track of contestants leaving and returning. Medical or other emergencies can be addressed as needed at the discretion of the contest director.

18. **GRADERS.** For the written exam, coaches are expected to serve as graders and should be selected by the contest director prior to the beginning of the contest. One grader will be designated as the Head Grader. Coaches may also serve as judges for the programming session; see the Conducting the Contest section for additional details.

19. **ANSWER KEY.** Prior to the start of grading the written exam, the Head Grader should communicate to the contest director any concerns of the reviewers.

20. **ANSWER KEY ERRORS.** In the case of a suspected error on the answer key, the contest director should contact the UIL State Office and/or contact the state contest director to communicate the suspected error and seek clarification before changing the key. Any error confirmed by the UIL State Office or the state contest director should be corrected on the key used for grading.

21. **GRADING THE CONTEST.** Each written exam paper should be independently scored twice, and papers contending to place should be scored a third or fourth time as needed. See the Conducting the Contest section for details on judging the programming session.

22. **LEGIBILITY.** If a consensus of graders cannot read an answer, they will mark that answer as incorrect.

23. **SCORING.** For the written exam, six points shall be awarded for all questions answered correctly, no points shall be given or subtracted for unanswered questions, and two points shall be deducted for an incorrect answer. For programming, each problem is worth 60 points. A correct submission on the first try receives the full 60 points. Solutions judged incorrect may be reworked and resubmitted for additional consideration, with a five point deduction for each incorrect submission. For example, a team that gets a problem correct on the third attempt would receive 50 points for that problem. Points are only applied to the team's score for problems that are ultimately solved correctly. If a team never submits a correct solution for a particular problem, no points are awarded or deducted for that problem regardless of the number of incorrect submissions.

24. **PLACES AND TIES.** Contestants can qualify to the next level of competition as individual first, second and third place winners or members of the winning team or wild card team according to Section 902 of the UIL Constitution and Contest Rules.
    a. Individual Competition. First place is awarded to the contestant making the highest score on the written exam, second place to the contestant making the next highest, third place to the next highest and so on. Ties shall be broken according to Section 928(d)(1) of the UIL Constitution and Contest Rules.
    b. Team Competition. The sum of the top three written exam scores plus the programming score from each school constitutes the team score for the school. First place is awarded to the team with the highest team score and second place to the team with the next highest. Team ties shall be broken according to Section 928 (d)(2) of the UIL Constitution and Contest Rules. All four members of first place or wild card teams advance to the next level of competition. All team members who qualify to regional or state will also compete for individual honors.
    c. Wild Card. A wild card team will advance according to Section 902 of the UIL Constitution and Contest Rules.

25. **VERIFICATION PERIOD.** Following grading of the written exam and input of unofficial results into the online entry system, contestants and coaches shall be allowed a time period to review contest materials. Questions shall be resolved during the Verification Period. Contestants and coaches not present at verification waive their opportunity to ask questions. See the Conducting the Contest section for additional information and verification procedures for programming.
26. **ANNOUNCING OFFICIAL RESULTS.** Following verification, the contest director should announce, as official, the names and schools of contestants through sixth place, and the top three teams. Official results, once announced, are final.
27. **NOTIFYING ALTERNATES.** If an individual qualifier or team cannot compete at the region or state meet, the alternate shall be notified and allowed to compete. It is the responsibility of the school scheduled to attend to notify the meet director and the alternate's school in writing as soon as possible prior to the contest. Failure to do so could violate the Academic Contest Ethics Code.
28. **RETURNING THE PAPERS.** When results are final and all questions resolved, district materials may be returned no sooner than the end of the last contest day of the district week. Regional materials may be returned no sooner than Saturday of region weekend.
29. **CONFIDENTIALITY.** Coaches, contest directors and contestants shall maintain confidentiality of contest material until the official release date. Transfer of information regarding test content shall be considered a violation of the Academic Contest Ethics Code and subject to penalties as outlined in the UIL Constitution and Contest Rules.
30. **SWEEPSTAKES POINTS.** Points are awarded through sixth place, and to first, second and third place teams according to Section 902 of the UIL Constitution and Contest Rules.

BEFORE
THE CONTEST

ROOMS
For the written exam, choose a room adequate in size and selected with quietness and excellent lighting as prime factors. The UIL recommends classroom armchairs or desks with accompanying armless chairs (no stools).

For programming, select a room with adequate space and a table for each team. Tables should each have three chairs and adequate surface space for teams to set up their computers, as well as access to an electrical outlet. A second nearby room will also be needed for judging.

MATERIALS AND EQUIPMENT
The contest director will provide the following for the written exam:
- Clean scratch paper for use by the contestants
- Accurate clock for timing and clock which contestants can see during the contest
- Pens for grading
- (DISTRICT) One 8 $\frac{1}{2}$ x 11 envelope per school entered, for returning materials

For programming, the contest director will provide the following:
- Computers to serve as judging stations, with appropriate software installed
- Clean scratch paper for use by the contestants
- For networked contests, necessary hardware and software
- For non-networked contests, precontest team packets including run envelopes, clarification forms, etc.

It is acceptable but not required to provide computers for teams to borrow. Teams should always be prepared to bring their own computers. Teams are responsible for providing all necessary equipment for their systems, including cables, surge protectors, etc.

CONTEST PACKETS
The League office will provide the following:
- A copy of the UIL Computer Science Handbook
- Sufficient copies of the written exam and answer key
- Answer sheets for the written exam
- Sufficient copies of the contestant packet for programming
- Printed copies of the programming judge packet to use for reference during judging
- Instructions for the programming session
- Precontest handouts for programming
- Materials needed to create programming team packets if needed
- CD including contestant data files, judge data files, sample solutions and optional judging software
- (REGION) State Meet information cards for state meet qualifiers (14)

The meet director may schedule a specific time and place for contest directors to pick up the test packets before the contest. The programming judging packet should be distributed to the contest director several days prior to the contest to allow time for setup and configuration of judging computers, creation of contestant data disks and other preparations. Contest officials should

inventory the packet contents before the contest. The test packets should be checked to verify the correct materials are enclosed and the number of copies included is sufficient for the number of competitors. The written exam and contestant programming packets should then be resealed and not opened again until just prior to the beginning of the contest. The judging packet should remain unsealed and accessible to allow the contest director to work with those materials. All confidential material shall be kept secure.

PERSONNEL

Coaches of competitors may serve as contest directors, assistants, monitors, graders and programming judges.

- Contest director.
- Assistant to the contest director.
- Room Monitor(s).
- Written Exam Graders. Almost certainly your best graders will be coaches of the contestants, and we encourage you to use their skill and experience to ensure accurate and efficient grading of the test papers. Designate one grader as the Head Grader. Make these selections prior to the beginning of the contest.
- Programming Judges. Coaches may serve as judges, or contest directors may select others with relevant knowledge and experience. For a contest with eight teams, two or three judges is sufficient.
- Programming Support. Contests may need one or more room monitors in addition to the contest director and judges. Non-networked contests will also need an archivist, scorekeeper and runner(s).

TIME

For the written exam, allot at least an hour and 15 minutes. Plan for 30 minutes for announcements, grader sign up, roll call, instructions and distribution of materials. Forty-five minutes of working time will be allotted for the actual testing period exclusive of time required for instructions. The 45 minutes begins when contestants are instructed to start. It is critical to stay on schedule, as some students may need to go to other events. Arrange for and announce during the opening remarks the time and place of the written exam verification period that will take place prior to the announcement of official results.

For programming, allot at least two and a half hours, plus an additional 30 minutes for team check-in and computer setup. The check-in/setup process can occur at any point during the contest day. Once setup is complete, plan for 30 minutes for announcements and instructions, distribution of materials and the dry run problem. Two hours of working time will be allotted for the actual testing period exclusive of time required for instructions and precontest procedures. Verification for programming should take place immediately after the programming session concludes; see the Conducting the Contest section for details.

EVENT ROSTER & RESULTS WORKSHEET

The contest director should obtain a copy of the contest roster from the meet director, which will be generated from the UIL Spring Meet Online Entry System. The roster will list the school, contestant number, contestant name, district or region number and will indicate students who are competitors and alternates. Scores and/or results are also recorded on this form to give to the meet director, who will then enter the results/scores into the online system before verification is held for the event.

ORGANIZING MATERIALS

For the written exam each contestant will be assigned a number indicated on the contest roster. As an example, the number will be listed on the roster as 6A-17 or 2A-4, indicating the conference and

a number. The UIL recommends numbering the tests and answer sheets before the contest begins. Write the contestant number in the upper right-hand corner of the test and answer sheet. Check all tests to ensure that all pages are printed clearly and completely. Batch together a test booklet, answer sheet and scratch paper that can easily be handed out once contestants are seated.

(REGION) If there is more than one conference at the meet, it is important to differentiate contestant numbers by conference.

SORTING ENVELOPES (DISTRICT)
Provide and label a large (8 1⁄2 x 11) envelope for each school entered in the district meet. Write the name of the school and contest on the top of the envelopes. After the verification period, contestants' tests and keys should be placed in the appropriate envelope for return to each school.

CONDUCTING THE CONTEST: WRITTEN EXAM

1. Set up the room that will best facilitate the contest, and where contest officials can sit in view of the contestants.
2. Organize contest materials for easy distribution.
3. Call roll from the roster and provide students with their assigned contestant number. Replace any contestant who is not present with a certified substitute at district and the certified substitute or alternate at regional.
4. Seat the contestants sparsely around the room separating contestants from the same school.
5. Dismiss from the contest room all individuals, except the contestants, contest director and assistants. Instruct graders to report to the grading room.
6. Distribute the test, answer sheet and scratch paper. Caution contestants not to open the test until instructed.
7. Read aloud the following:

Announcements Prior to Conducting the Contest
 a. Do not open the test until instructed to do so.
 b. Write the assigned contestant number in the top right-hand corner on the cover page of the test and on the answer sheet. Check for accuracy if the number has already been written.
 c. Contestants have 45 minutes to complete the test. All contestants must remain quietly seated for the entire 45 minutes. If you finish early, use the remaining time to check your work. In the event of a medical or other emergency, you may request permission to leave the contest room and will be accompanied by a monitor while outside the contest room if you intend to return.
 d. Students shall not use a timing device that emits an audible signal. Cell phones, smart watches, tablets, music players, or other similar devices are not to be used as timers and are not to be visible during the contest.
 e. No calculators are allowed. No notes or other materials are allowed during the contest. Only your pens or pencils and test packet should be on your desk.
 f. You may write on the test paper and on the scratch paper provided. The answer sheet is reserved for answers only. Do not make notations or any other marks on the answer sheet. Write all answers on the answer sheet; answers written on the test or scratch paper will not be considered by graders.
 g. Write answers clearly and legibly, using only capital letters.
 h. When the stop signal is given, if you are in the process of writing an answer you may finish writing that answer only. You may not do any additional work on any test question. Contestants shall put their writing implement down and sit back while the tests are collected.
 i. Verification period will be held in__(name room) at_____(give time). This is the only time for contestants and coaches to verify grading and unofficial results.
 j. Are there any questions?
 k. You may begin the contest.

8. Give contestants the signal to start. Additional time signals may be given at the discretion of the contest director. After exactly 45 minutes, give the verbal notification to stop.
9. When the time has elapsed, the contest director should collect all test materials, including scratch paper. Deliver all materials to the grading room.
10. Submit the substitution forms/letters to the meet director to update the original entry in the online entry system.

GRADING THE CONTEST: WRITTEN EXAM

GRADERS
Graders should report to the grading room as soon as the contest begins. The Head Grader will provide answer keys and surplus tests when the contest has started. Persons not assigned to grade should not enter the grading room.

Graders should review the test and verify the official answer key. If an error is suspected on the answer key of an objectively-scored contest, refer to instructions on Answer Key Errors in the Contest Rules and Procedures section of the contest handbook. Do not "throw out" a question or make any other alterations without a ruling from the UIL State Office and/or the respective state contest director, as this could affect wild card team selection.

Teams advancing to the Region and State Meet shall provide a qualified grader to score papers, unless excused for a valid reason by the contest director.

GRADING INSTRUCTIONS
Do not sacrifice accuracy for speed. Score each paper independently twice, and score papers contending to place a third or fourth time as needed.

When marking the answer sheets, no mark should be made if the item is correct. If an answer is incorrect, place an X over the question number. Do not mark over the contestant's answer. Do not write the correct answer if the answer written is incorrect. If any answer space is left blank, draw a line through the blank.

SCORING
Score points according to the guidelines in Computer Science Contest Rules and Procedures.

PLACES AND TIES
Refer to Computer Science Contest Rules and Procedures.

IDENTIFYING PAPERS
After papers have been ranked, indicate on the answer sheet the name and school of the student that corresponds with the contestant number. This will expedite the verification process.

CONDUCTING THE CONTEST: PROGRAMMING EXAM

1. Set up the rooms that will best facilitate the contest, with adequate table space and electrical outlets for teams in the contest room and a nearby room for judging.
2. Provide a time for teams to check in and set up their equipment. Provided the contest room is kept secure, the setup time does not have to occur immediately prior to the contest.
3. Prepare contestant data files for distribution. The easiest method is by using USB drives. If you do not have enough drives on hand, it is permissible to collect a USB drive from each team during check-in, copy the contestant data files to it, and then return it just before the contest begins.
4. Once setup is complete, call roll to confirm that all teams are present. Verify that each team has three members participating in the programming session.
5. Dismiss from the contest room all individuals, except the contestants, contest director and assistants.
6. Distribute precontest materials, which consist of a small set of handouts for networked contests or team packets for non-networked contests.
7. Make announcements regarding restroom access and procedures for emergencies.
8. Explain the processes for submitting solutions and clarification requests. (This will vary for networked vs. non-networked contests.)
9. Conduct the dry run problem. A copy of the dry run problem should be included in the precontest materials distributed to teams. The dry run is intended as a walkthrough to ensure that contestants, judges and contest assistants understand the contest process and that judging systems are working properly. It is not necessary for all teams to solve the dry run before moving on to the actual contest.
10. After the dry run is completed, distribute one copy of the problem set packet (the test) to each team, along with a disk containing the contestant data files. Instruct contestants not to open the test packet or insert the disk into their computer until instructed to begin.
11. Read aloud the following:

Announcements Prior to Conducting the Contest

a. Do not open the test packet or insert the drive into your computer until instructed to do so.
b. You will have two hours for the contest. Problems may be worked in any order.
c. Students shall not use a timing device that emits an audible signal. Cell phones, smart watches, tablets, music players, or other similar devices are not to be used as timers and are not to be visible during the contest.
d. No calculators are allowed, but your computer's built-in calculation functions and help files may be used. Internet access, whether on your computer or any other device, is prohibited.
e. You may make notes on the problem set packet and on the scratch paper provided. You may separate the pages of the problem set packet if desired.
f. When the stop signal is given, stop working and begin completing your Team Verification Form. Do not begin breaking down your computer until instructed to do so.
g. Verification period will immediately follow the conclusion of the contest, as soon as any remaining judging is complete.
h. Are there any questions?
i. You may begin the contest

12. Give contestants the signal to start. Additional time signals may be given at the discretion of the contest director. After exactly two hours, give the verbal notification to stop.
13. For networked contests, hit stop on the contest server. For non-networked contests, collect any remaining submissions that are in a run envelope and being held up for a runner when time is called.
14. The contest director should collect all printed test packets and scratch paper.
15. Instruct teams to leave their computers set up, and to complete their Team Verification Forms.
16. After remaining judging is completed, compare the Team Verification Forms against the scoring data recorded in the judging room and resolve any discrepancies. Allow a 15-minute period for teams to request clarification on judging and scoring. These processes serve as the verification period for programming.
17. After verification, instruct teams that they can pack up their computers. Announce the time and location for awards presentations.
18. Deliver programming scoring information to the meet director for entry in the online system.

JUDGING PROGRAMMING

JUDGES
Well in advance of the contest, the contest director should identify an adequate number of judges for the number of teams participating. For a contest with eight teams, two or three judges is sufficient. Judges may be coaches, or other individuals with relevant knowledge and experience.

PLATFORMS
Contest directors are encouraged to utilize a networked contest platform if possible. Software called PC^2 is available for this purpose. Additional information is available on the UIL website regarding PC^2 setup and configuration.

For contests where networking is not possible, the contest can be run using manual transfer of solutions from teams to judges. USB flash drives work best for this format. The UIL website also includes a detailed guide for contest directors using a non-networked (or "sneaker net") contest platform. The UIL provides a DOS-based judging program that can be used for non-networked contests.

JUDGING GUIDELINES
Teams should submit only their source code for judging. Judges will compile the solution on the judging station and test it against the judge test data for that problem. White space differences at the end of lines or after the last line of output are never significant and should never cause a solution to be judged as incorrect. If the differences do not seem material to the problem being solved, err on the side of accepting the solution. For instance, if a problem is about performing a complex calculation, be flexible with output formatting. On the other hand, if the problem is all about formatting, then be a stickler. Above all, be consistent with your judging.

SCORING
Score points according to the guidelines in Computer Science Contest Rules and Procedures and instructions provided on the test packet. Programming counts for half of a team's score, with the team's top three written exam scores making up the other half. A perfect team score is 1440: (perfect written exam score of 240 x 3) + perfect programming score of 720 = 1440.

PLACES AND TIES
A team that does not participate in programming is not eligible for team placement, points or advancement (except in the case of district contests where only one team has entered and the district opts not to conduct a programming session). Refer to Computer Science Contest Rules and Procedures section for additional information.

AFTER
THE CONTEST

REPORT TO MEET DIRECTOR
Individual contest directors shall give the contest roster/results form with written exam scores to the meet director immediately after the contest papers are scored. The contest director shall turn in a list of team programming scores to the meet director as soon as the programming session and verification procedures are completed. The meet director is responsible for entering results into the online entry system. All scores must be entered into the online entry system prior to verification and announcement of results. Enter all contestants' written exam scores, not just the top six and all programming scores, not just the top three. All scores are needed to determine team results. Provide at least one copy of the unofficial results from the online entry system during verification.

VERIFICATION PERIOD *(Procedures below are for the written exam; see Conducting the Contest section for programming verification procedures)*
Announce that no one present may use writing or erasing instruments during the verification period. If the written exam key was changed during the grading process (with the approval of the UIL state office or the state contest director), the contest director shall announce the changes made. The contest director shall allow the contestants and coaches a time period not to exceed 15 minutes to look at all of the following items for the written exam:

- Contestant's test and answer sheet
- An answer key, in its original form as supplied by the League office
- Display of scores after entry into the UIL Spring Meet Online Entry System

Do not allow anyone to take papers from the room. During this period, the contestants and/or coaches shall verify that they have the correct papers and look for possible errors in the grading, calculation or data entry of scores.

Display each contestant's score (not just the top 6 places) preferably by displaying the printed page from the online scoring system after scores were entered. This will allow data entry of scores to be reviewed by contestants and coaches during the Verification Period. Also display a printout of the screen where programming scores are entered. (Scoring and tabulation for programming should have already been verified through the immediate post-contest procedures; the purpose of this final review is to verify data entry only.) At State Meet only, the contest director may omit a display of data entry into the UIL Spring Meet Online Entry System.

If errors in grading, scoring or online data entry are found during the verification period, the contest director shall make the corrections. After resolving all questions, or at the end of the 15 minutes, the contest director should announce that the Verification Period has ended. If papers are not being returned on the day of the contest, see Returning Papers below.

ANNOUNCING OFFICIAL WINNERS
The contest director should make any necessary announcements regarding the return of papers if necessary and any instructions regarding the awards ceremony. The contest director will announce official results with the name and the school of each contestant who places individually first through sixth, and announce the schools of the first place, second place (alternate) and third place teams. These results, once announced as official, shall be final.

QUALIFICATIONS TO REGIONAL OR STATE
Contestants can qualify to the next level of competition as individual first, second and third place winners or members of the winning team or wild card team as described in Section 902 (h)(3) of the UIL Constitution and Contest Rules.

RETURNING MATERIALS
If papers are not being returned, pick up all tests, answer sheets, scoring charts and keys so that none remain with a contestant or coach. Place the materials in the sorting envelopes by school. At the district meet, materials may be returned no sooner than the end of the meet on the last day of the district week. If the region meet is held on Saturday, materials may be returned to the contestants the day of the meet.

COMPUTER SCIENCE QUICK REFERENCE CHART

Note: Grading time varies. For most events, allocate a minimum of two hours.

Contest

ROOMS
1 – written exam testing (with table surface)
1 – grading
1 – programming contest
1 – programming judging
(rooms may be used for multiple purposes as schedule allows)

SET UP — 30
PREP TIME — 20 written, 30 programming
TEST TIME — 45 written, 2 hours programming

CONTEST MATERIALS
UIL Packet: tests & keys, answer sheets, programming judging packets, programming problem sets, meet evaluation form.

Director Provides: contest roster and results form (generated from online entry system), contest rules, clock, 8 1/2 x 11-inch scratch paper, red pens/calculators for graders, and one 8 1/2 x 11-inch envelope per school.

PERSONNEL DURING CONTEST
• director
• 1 assistant
• 2-3 programming judges
• 2-3 programming assistants, as needed

OF ENTRIES
(District) 4 per school
(Region) 1st/2nd/3rd individuals per district; 1st place team per district; wild card team.

GRADING/JUDGES
at least 3, preferably more for the written exam, 2-3 judges for programming. Graders and judges may be coaches.

AWARDS
Individual medals: 1st through 6th
Team medals: 1st, 2nd, 3rd place teams

POINTS
1st — 15
2nd — 12
3rd — 10
4th — 8
5th — 6
6th — 4

1st team — 20
2nd team — 16
3rd team — 12

ADVANCE: Top 3 individuals and 1st place team. One wild card team per regional will also advance.

Study Material

Shop the UIL Online Store at store. uiltexas.org to purchase Study Materials. Some materials are available for free download.

• The Computer Science Handbook includes a description of the current UIL contest format, rules and procedures. It is available as a free download: http://www.uiltexas.org/academics/resources/contest-handbooks-manuals

• The Computer Science study packet contains the prior year's written exams and answer keys, as well as the following items for each programming test: contestant packet, judge packet, contestant data files, judge data files, sample solutions.

The Computer Science page of the UIL website provides a number of helpful resources, including instructional videos, information on test topics and content, links to IDE software and other resources, and more.

The Academics homepage of the UIL website contains a variety of additional forms needed for academic programs, including the Professional Acknowledgment Form for all sponsors, coaches and directors of academic events and the Substitute Eligibility Form needed for contestants not listed on the original entry form for UIL meets.

The generic forms needed to host invitational meets, such as grading rubrics, answer sheets and contest results form are posted, as are the Academic Meet Director Manual, the conflict pattern and various checklists for academic Coordinators. Check the different web pages for speech and debate, theatre, and the A+ Program for current information and forms specific to those contests.

Computers

For the Computer Science programming session, team members work collaboratively sharing a single computer system. This means each team may use one CPU, one display and one keyboard/mouse during the contest. For systems using a laptop and external keyboard, the laptop's built-in keyboard must be covered in some way (e.g. taping a piece of paper over the keyboard). A printer is also allowed but is not required.

A team may also bring a backup system in case of equipment failure; the backup must remain powered off and stowed unless needed.

Some host sites may have computers available for teams to borrow, which is acceptable, but teams should always be prepared to bring their own computer.

A team may use up to two programming language reference manuals or textbooks. These must be published texts that are reasonably free of handwritten notes. The contest director of the meet has final authority to approve or disapprove any text or reference book. A book on CD or on the computer's hard drive is not an acceptable reference and must be removed from the team's computer before the contest.

A team's computer may include standard PC software (office applications, antivirus, etc.), the JDK and an associated IDE package (including samples and help files), the Java API's and Java API reference (Javadoc). A team's computer shall not include any code previously written by students, coaches or other individuals for any purpose, including other contests, classwork or other projects; all such files must be removed from the team's computer before the contest.

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