



OVERVIEW

Participants respond to an annual coding-related design challenge by developing a software program that will accurately address an on-site problem in a specified, limited amount of time. Specific elements to be used, such as the programming language, operating system, or application programming interface (API), will be released on-site. Completed solutions will be objectively measured to determine the best and most effective solution for the stated problem.

ELIGIBILITY

Participants are limited to one (1) individual, or one (1) team of two to three (2-3) members per chapter, one (1) entry per individual or team.

TIME LIMITS

The allotted time for the design and construction of the solution is two (2) hours.

Semifinalists will participate in a LEAP interview that will last a maximum of five (5) minutes.

LEAP LEADERSHIP RESUME/INTERVIEW


A Team LEAP Leadership Resume is required for this event and must be submitted when participants arrive at the event at the designated event time. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE

Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.

PROCEDURE

- A. Participants report to the event area at the time and place stated in the conference program. Participants must submit a LEAP Leadership Resume prior to receiving the onsite problem.
- B. The problem, evaluation criteria, and materials are distributed.
- C. Participants are required to provide their own computer hardware and software.
- D. Teams have two (2) hours to design and present a solution.
- E. Each solution is tested and presented to the judges as soon as possible after the coding phase is completed.
- F. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- G. Semifinalist teams will report at the time and place stated in the conference program to sign up for a semifinalist LEAP interview.
- H. No more than three (3) representatives per team report for the semifinalist LEAP interview. The interview will last a maximum of five (5) minutes.

 Read the General Rules and Regulations section in the front of this guide for information that applies to all of TSA's competitive events.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.

REGULATIONS

- A. All work must be completed in the event area during the time specified for the event.
- B. Teams must bring one (1) laptop or desktop computer with charging cables, one (1) monitor, one (1) power strip, and pencils and paper.
- C. Students will not have access to the Internet during the event. Students must have all software development tools needed for the competition downloaded and accessible on their computers.
- D. All solutions must be tested, demonstrated, and presented by participants in front of the judges.
- E. Participants in this event should concentrate their efforts prior to the competition on researching, understanding, and practicing



all aspects of the coding process, software development, operating systems, programming languages, etc.

- F. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Teams document, in the LEAP leadership resume, the leadership skills that the team has developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resume as part of their LEAP interview. The LEAP Leadership Resume/Interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Solutions are evaluated objectively. A finite measure will be defined in the problem and will be used to determine the best solution. Second-best attempts or other objective criteria are used to break ties when possible. Only as a last resort will subjective criteria, such as originality, be used to evaluate solutions. The LEAP requirements will also be evaluated. Please refer to the official rating form for more information.

STEM INTEGRATION

Depending upon the subject of the problem, this event may align to one or more STEM areas. Please refer to the STEM Integration section of this guide for more information.

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Computer software engineer
Mathematician



CODING

EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for set-up, monitoring, and clean-up of on-site activity, two (2) or more
- C. Evaluators, two (2) or more
- D. Evaluators for semifinalist interviews; two (2) or more

MATERIALS

- A. Coordinator's packet, containing:
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables and chairs for participants
- C. Tables and chairs for evaluators, to be used for information distribution and evaluation
- D. A copy of a well-written, technologically appropriate problem for each team that can be objectively measured
- E. Adequate conditions, tools, materials, monitoring, and testing devices for the problem
- F. Stopwatch or clock for timekeeper

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluators and assistants have been scheduled.

- B. Inspect the area(s) in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.
- C. One (1) hour before the event is to begin, meet with evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- D. Check tools, materials, and monitoring and testing devices.
- E. Begin the event at the scheduled time by closing the doors and checking the entry list. Collect LEAP Leadership Resumes. All participants and evaluators should be in the room at this time. Participants not present may be disqualified. In order to compete, participants must be on the entry list or must have approval of the CRC.
- F. Once teams are seated and general announcements have been given, distribute and review the problem and start the time.
- G. Evaluators and monitors observe the entire construction phase, with evaluators measuring solutions as soon as appropriate.
- H. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and the CRC manager.
- I. Evaluators independently assess the entries. Semifinalists will be determined and posted by the CRC.
- J. Meet with semifinalist teams at the time and place stated in the conference program to allow them to sign up for a semifinalist LEAP interview time.
- K. Inspect the area in which the LEAP interviews will take place. Ensure that there is a table and seating for participants and evaluators.
- L. Meet with semifinalist evaluators to review the LEAP Judging Protocol. If questions arise that cannot be answered, speak to the event manager before the semifinalist presentations begin.
- M. Conduct semifinalist LEAP interviews. Interviews should be a maximum of five (5) minutes in length.
- N. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- O. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.
- P. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# _____

CODING

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Solution Development (30 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Hardware and software See Procedure C (X1)	Very little of the hardware and software are used appropriately, effectively, and efficiently. There is little or no evidence of research, understanding, and practice in the usage.	Some of the hardware and software are used appropriately, effectively, and efficiently. There is some evidence of research, understanding, and practice in the usage.	All of the hardware and software are used appropriately, effectively, and efficiently. There is complete and solid evidence of research, understanding, and practice in the usage.
Solution (X2)	The solution developed is unable to fully meet or solve the defined problem.	The solution is somewhat developed and generally meets or solves the problem.	The solution is fully developed and clearly meets or solves the identified problem.

SUBTOTAL (30 points)

Testing of Solution (50 points)

Evaluation

A finite unit of measure, such as elapsed time, linear distance, and/or strength, etc., is used to determine ranking.

1st: 50 Points	2nd: 45 Points	3rd: 40 Points	4th: 35 Points	5th: 30 Points
6th: 25 Points	7th: 20 Points	8th: 15 Points	9th: 10 Points	10th: 5 Points

SUBTOTAL (50 points)

Rules violations (a deduction of 20% of the total possible points in the sections above) must be initialed by the evaluator, coordinator, and manager of the event. Record the deduction in the space to the right.

Indicate the rule violated: _____

Record scores in the column spaces below.



Semifinalist LEAP Interview (20 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
LEAP Leadership Resume/Interview See Regulation F and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
			SUBTOTAL (20 points)

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary. **TOTAL (100 points)**)

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____ Signature: _____