

The National Colleges of Technology in Japan Present: The 28th Annual Programming Contest

The Q & A for the Competition Section (The Theme: “Come Find Our True Charm”) – Part 1

□ The following questions from Q1 to Q80 were received by the administration as of 17:00, May 8th (Mon.) 2017.

- Q1. The application package that I received contained the sample frame and puzzle pieces. But the shape information of the sample pieces and the location information of each level were not in the package. How can I obtain this information?
- A1. We don't provide the shape information of the samples nor the location information of each level. If you want to have these types of information, applicants should prepare on their own in reference to the application guidelines.
- Q2. If we accidentally drop a piece from the table, can we still use the piece as long as it landed inside of the booth?
- A2. As long as the piece is located within your booth, it is OK. However, if we cannot confirm the owner of the dropped piece with certainty, you may not be able to use the piece anymore regardless of the location (even if the piece is within your booth.) Please be careful not to drop any of pieces.
- Q3. What is the maximum grid count of a frame?
- A3. A plane of a “frame” can contain a maximum of 32 grids.
- Q4. Is the location info of the frame available (can we rotate the frame)?
- A4. The frame information is provided with the shape information of a “piece”. The “frame” does not rotate. The location information of a “piece” is based on the information of the “frame.”
- Q5. Can we connect our personal computers to be used for the competition by an exclusive wireless local area network?
- A5. Wireless LAN is not allowed as it may affect the communication activities of the organizer as well as the venue.
- Q6. If we use the shape information of a piece, is our score reduced by the points given to the shape information? How do you assign points to each piece info?
- A6. Yes, your final score is reduced by the points given to the specific shape information which the team referred to. We provide the piece shape info for all of the pieces at once. Therefore, the points are the same for all pieces.
- Q7. How do you monitor which team used a QR code? Is it our responsibility to report to the organizer or will the organizer track the usage?
- A7. We will control the QR code usage of the teams. For example, we will provide a QR code in a sealed envelope and check each envelope whether the seal was broken or not after the competition is over.
- Q8. The guideline states that we should use the reference information in the order from a lower level to a higher level. However, it also mentions about a case when a team uses the reference information of a higher level only. These descriptions are confusing. Are we allowed to use the reference info of a higher level first? Can you clarify the rule of using the reference info?

A8. You can start with a reference info of a higher level.

Q9. Does the waiting area for the contestants come with a power outlet? If so, how many power strips will be provided and what is the maximum wattage for use?

A9. We will provide enough power strips for all teams (about 300W per team). We will provide more details on this when we send out the final round guidelines.

Q10. Can we bring own paper template and place it under the puzzle to solve the assignment?

A10. No, you are not allowed to place anything other than the “frame” and the “pieces” on the pedestal.

Q11. The guideline indicates that a change can be made to the registered members of a team. Can we add a member after we submit an application?

A11. Yes, you can add a member.

Q12. If there were any teams which received a “conditional pass” or “failed to pass” the qualifier in the past competitions, can you tell us the background of why a team could pass with a condition or failed the qualifier?

A12. When we noticed that a team obviously misunderstood the rules of the competition, we allowed the team to pass the qualifier with a condition. When a team could not explain clearly how they came up with a solution, the team was not allowed to proceed to the final round. Or in some cases, a team passed the qualifier round with a condition but did not make it to the final round because they did not meet the given condition before the final round.

Q13. Can we make a change in the programming details after the qualifier process? For example, we stated that “we will develop an iPad compatible application” in the entry application. But can we present “an application compatible in Windows” in the final round?

A13. The qualifier process mainly examines the idea and feasibility of a proposed program. It is OK to add more function or revise the proposed function after the qualification process.

Q14. If our proposed program is not yet functioning properly (such as an OS is not working for a certain movement) at the qualifying process, are we still eligible to compete at the final round?

A14. You are still eligible to compete at the final round even if it was not complete at the time of the qualifier round. However, if your entry shows a weak feasibility, you may pass the qualifier round “with a condition” or it is also possible that you may not pass the qualifier.

Q15. Is it OK to communicate data between devices set up within the competition area via an external storage or a memory device?

A15. Yes, it is allowed.

Q16. Would you clarify the following description in the “Other Rules and Notes” section? “Communication with anyone outside is not allowed with any of the devices including a personal computer.” To be more specific, can you define “communication” and “outside” here? For instance, are the following types of communication acceptable?

- (a) Saving the images taken with a digital camera in the build-in memory, then transferring the image files onto the PC, or connecting the camera with a cable and directly transferring the image files to a PC.
- (b) Nowadays, most of the digital cameras come with a Wi-Fi feature. How about using a Wi-Fi connection of the camera?
- (c) Reading a QR code on a device such as a smartphone, then downloading the analysis result of the code to a PC with a cable.

- (d) Transferring the analysis data on a device such as a smartphone visually or manually.
- (e) Communicating data between a device such as a smartphone and a PC with a cable and leaving them connected while processing.

A16. “Outside” means anything located outside of your competition booth. Therefore, as long as communication takes place within your competition booth, both wired and wireless communication are technically acceptable. In other words, the above four examples (a, b, c and e) in your question are all acceptable. However, we cannot promise that a wireless LAN communication won’t affect the overall communication status during the competition, therefore a wireless LAN is not allowed to use. Consequently, example (b) may not be allowed depending on the type of communication method to be used.

Q17. Is there any information which tells us which piece shape info goes with which physical piece? For instance, a number is written on each piece and the instruction is given as “the first line is the information for Piece No.1., the second line is for Piece No.2, and so forth.

A17. No, we don’t provide such information.

Q18. Is it possible that a “puzzle” contains multiple “pieces” in the exactly same shape?

A18. Yes, it is possible.

Q19. Is there any limit for the total “piece” count of which side contacts with the frame?

A19. No, there is no limit.

Q20. Are there any minimum and maximum angle size for a puzzle “piece”, and if so, what are they?

A20. The angle can be any angle which can be created with grid dots.

Q21. According to the guideline, it is allowed to mark the “pieces.” Is it ok to paint the entire surface of a piece?

A21. Yes, you can. But make sure to protect the other equipment in the area such as the table.

Q22. The guideline notes that the length of a side of the piece may have a maximum of $\pm 0.2\text{cm}$ error. Does this mean that if a piece comes with a positive error of 0.2cm , there would be a piece which contains a negative 0.2cm error to compensate the positive error on the other piece?

A22. No. A piece may have a maximum of $\pm 0.2\text{cm}$ error, but it doesn’t mean there is always another piece to compensate for that error.

Q23. What type of paper do you use to print the QR codes?

A23. Regular copy paper.

Q24. What is the size of a cell (not the number of cells for a QR code)?

A24. 1 cell equals 3px.

Q25. How are QR codes printed? Is it one QR code per sheet?

A25. A sheet can contain multiple QR codes printed.

Q26. Does a QR code sheet contain any other info? Does the sheet indicate the level of location info?

A26. The sheet where a QR code(s) is printed also contains information about the match (such as the first match of the first round), and shape information or the type of location info. The location info will indicate the level.

Q27. Is there any shape or location info which score is a 0 or a negative number?

A27. No.

Q28. Is there any possibility that QR codes will be printed on both sides?

A28. No, it will be printed on one side only.

Q29. Are the actual frame and pieces provided at the match made under the same condition as the samples (same material and fabrication setting)?

A29. Yes.

Q30. We want to track the remaining time and other status during the match. To do so, we want to visually check or take pictures of the screen and other areas. If the completion status of other teams or QR codes happen to be projected on the screen, are we disqualified from the match?

A30. You cannot take images of the screen and other objects if they are located outside of your competition booth.

Q31. Can you explain how the final score is calculated (how the final score is deducted by the points of reference info used)?

A31. The final score is deducted by the total of given points to each reference info.

Q32. Can we prepare an own lid so that we can cover the puzzle on the answering pedestal?

A32. No, you cannot cover up the answering pedestal.

Q33. How many holes can a frame come with?

A33. A maximum of three.

Q34. What is the maximum number of pieces and the maximum vertex count of a piece?

A34. The maximum number of pieces are 50. The maximum vertex number of a piece is 16.

Q35. Does a "piece" information file include the information of "pieces" not to be used as well?

A35. No.

Q36. If we ended up requesting many "piece" information and having multiple QR codes, how is the information provided in each QR code?

A36. The information will be split before moving to the next piece info.

Q37. The guideline states that “Each team is responsible to inform us when they are ready to submit an answer once their puzzle is completed.” How exactly do we inform you that we are done?

A37. We are planning to provide a lid for the answering pedestal. The finished team can close the lid to inform us that they are done.

Q38. Do you provide the equipment setup time besides the actual competition time?

A38. We will provide the equipment setup time before the competition starts. It will be about 10 minutes from the time you enter to the time you exit from the venue.

Q39. Are we allowed to work on the assignment anywhere else besides the table but within the booth?

A39. No, please work on the table.

Q40. Can we bring a plank to extend the working space of the table or some kind of cover to be installed around the table to prevent “pieces” from falling down from the table?

A40. No, you cannot increase the table area size by an extending it with a board and such. But you may utilize an accessory to keep the pieces on the table, as long as the accessory does not interfere with other devices such as the answering pedestal and with the progress of the competition in general.

Q41. Is there any colored frame or piece?

A41. We are not planning to put any color on them. Please note that some of them may come with minor discoloration such as a scorch mark from the fabrication process.

Q42. The guideline indicates that we can choose to refer to the location information of certain “pieces” (Levels 1 to 4). When can we access this information?

A42. We will set up the information at each booth before the competition starts.

Q43. How do you track who used which piece-location information (Levels 1 to 4)? Is there any reference info which point is 0?

A43. We will control the reference usage status by providing the info in a sealed envelope or using other controlled methods. In this manner, we can confirm whether the information was used or not by checking the seal. There is no reference info which deduction point is 0.

Q44. What is the maximum size of a “piece”?

A44. The maximum size of a “piece” equals the maximum size of the frame.

Q45. Is it possible to check other teams’ progress status? Or is there any way we can check whether other teams used reference info during the competition or after we submit our answer?

A45. The progress status and the completion status will be displayed on the screen. However, they won't stay on the screen forever. We do not display the usage status of reference info by other teams on the screen during the competition.

Q46. Is the "frame" provided on the actual competition also hollowed out like the sample "frame"? Or is a frame provided on a mount?

A46. Yes, a frame is hollowed out.

Q47. What is the height of the pedestal used at the competition to place a "frame" and "pieces" on?

A47. It is going to be about 15cm high. The details will be provided as additional info when we send out the final round guidelines.

Q48. Do you assign a judge to each team? If not, is there any possibility that a team cannot submit an answer because the judge was not present?

A48. We will assign a judge per team.

Q49. Is there any penalty if we do not use a calculator at all to complete the answer? If so, how do you check whether we used a calculator or not?

A49. No, there is no penalty for not using a calculator.

Q50. Can we adjust the position of a frame as long as it does not go over the table?

A50. Yes, you can.

Q51. What is the maximum number of sides that a "frame" can have?

A51. A maximum of 32 sides.

Q52. Do you release the details of the system spec to other participants? If so, when do you release it?

A52. The participants cannot have access to other teams' system spec until the final round ends. After the competition is over, we may post the spec of teams who won the competition with a high score on our official website.

Q53. Is it allowed to be outside of the competition booth during the equipment setup time before the competition?

A53. During the setup time, you can be outside of your competition booth. Just make sure not to disturb other participants.

Q54. Can we have the QR codes of the samples?

A54. No, we don't provide the QR codes for the samples.

Q55. It seems that the QR code in the guideline contains an error. Are you going to provide the correct one?

A55. No, we are not.

Q56. According to the procedure explained on page 13 of the guideline, the shape information and the location information are printed on the papers and provided for us. Can you tell us the following details? The size of the QR code, the

paper size, the location of the QR code on the paper, and the printing direction. Are the reference sheets fixed on to the competition booth?

A56. We will use Version 20 QR code in the size of about 8cm x 8cm. The QR code will be printed on a 210mm×99mm paper which is 1/3 of an A4 paper. Please note that paper size may not be exactly the same as we will cut A4 papers manually into three pieces by a cutting machine. We do not attach the paper on the booth. We will provide the details as additional info when we mail out the final round guideline.

Q57. Are the origin coordinates (0,0) fixed at a certain location on the top left corner regardless of the assignment? Does the origin of an inner frame start from the center of the outer line of the puzzle?

A57. The grid origin will be fixed at a certain location on the top left corner although there might be a minor misalignment due to the fabrication process. Please note that the vertex of a “frame” is not always at the grid coordinates origin (0,0) as shown in Image 3 of the guideline (p.10). In other words, the top left point of the “frame” is not fixed to a specific point on the top left corner. Also, the inner line of frame is not always located at the center.

Q58. If we want to install a type of puzzle filling assist system above the frame in the air, is there any possibility that the system may interfere with other devices that are installed above the answering board by the organizer?

A58. We are going to install a camera and other equipment on the answering pedestal for filming purposes. Therefore, we do not allow participants to install anything above the answering pedestal. If you need to install a device above the frame in the air, you can move the frame from the answering pedestal and then install it.