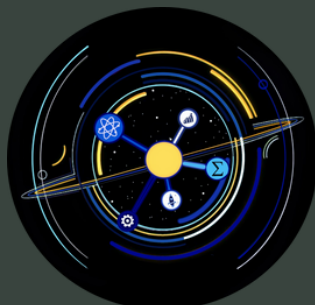




# COLOSSUS' QUEST STUDY GUIDE



From 1943–1945, after entering Germany, British cryptanalysts developed the Colossus, a set of computers designed specifically for the decryption of the Lorenz Cipher. You are a British soldier, who is now on a quest to find clues in order to successfully decrypt the Lorenz Cipher. From simple encryption, to finding your way out of a dark room, this journey is bound to test your limits! So brace yourself, polish your cipher skills, and get ready to face a number of challenges in the midst of disaster.

**General Rules/ Guidelines:** Mobile phones will not be allowed in any round, and any form of cheating will result in immediate disqualification. The mode of communication throughout will be WhatsApp. All rounds are elimination rounds, and briefings of each round will be given by the category heads before they begin. No extra time will be given in any round, and the time durations mentioned in the study guide are final. Teams are not permitted to switch team members during the rounds.

## **Round 1: Encryption and Decryption**

Delegate Limit: 2

Duration: 1 hour 30 minutes

Round Description:

The first round of this category will require delegates of one team to be split into two, so that both are in different rooms. One team member will be provided with a sentence/ paragraph which they'd have to write in cipher-text. The same text would then have to be decrypted by the team member in the other room.

All messages provided will be in the context of World War 2, and all teams will be given different ones. The team members would then be switched so that the ones who were decrypting before would have to encrypt a new message and vice versa. This will be repeated 3 times. Whichever teams are able to successfully encrypt and decrypt the most amount of messages, with accuracy, within the given time limit will qualify for the next round.

**This is an elimination round and only the top 15 teams will qualify for the next round.**

### **Round 2: Online Scavenger Hunt**

\*delegates will be required to bring their own laptops for this round\*

Delegate Limit: 3

Duration: 2 hours

Round Description:

The Colossus machine consisted of a series of computers carrying out different functions ranging from performing Boolean to counting operations, one after the other. Inspired by the functions of this fascinating machine, this round will entail an online scavenger hunt. Participants will be provided with ciphertext, which, upon being decrypted, will reveal a website link, marking the start of a scavenger hunt. The link will lead them to a website containing a question and the link to the next clue. The answers to these questions will have to be added to a Google form, the link to which will be provided beforehand.

The top 5 teams to submit the completed form in the shortest time will qualify for the next round. In-case no team can complete the hunt, the teams with the most questions answered by the time the category ends will proceed forward.

**This is an elimination round and only the top 5 teams will qualify for the next round.**

### **Round 3: Dark Room**

Delegate Limit: 2-3

Duration: 3 hours – 30 minutes/ each team

Round Description:

A recent report has revealed that a photographer has used paper with the Lorenz Cipher to develop his photographs. As a trio of agents, you have been tasked to get those. The pictures are reported to be in the photographer's darkroom, which he only leaves for his half-hour lunch break. With 30 minutes on the clock, you will be required to solve several puzzles and decrypt a series of ciphers leading you to the pictures for them to be decrypted by the Colossus. The team that escapes with the photographs the fastest, wins.

Delegates must be well versed in the following ciphers, languages and puzzles amongst others:

- Number-Letter Cipher
- Caesar Cipher
- Atbash Cipher
- Pigpen Cipher
- Tic-Tac-Toe Cipher
- ROT-13/ ROT-18
- Rail-Fence Cipher

- ADFGX and ADFGVX Cipher
- Vigenere Cipher
- Polybius Square Cipher
- Affine Cipher
- Hill Cipher
- Binary
- Morse
- Braille
- Kenken
- The Rubik's Cube
- Sudoku

Delegates may use the following websites for Round 2 of this category:

<https://www.boxentriq.com/>

<https://dencode.com/en/>

<https://www.dcode.fr/en>

*Disclaimer: All the rules mentioned above are preliminary and may be subject to change at the day of the event. The decision of heads is final.*

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