

Collaborative Learning

Course: Artificial Intelligence

Class: T.Y. B.Tech (IT)

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Introduction

As part of the Artificial Intelligence (AI) course for Third Year B.Tech IT students, a hands-on activity session on Cryptarithmic problems was conducted. The objective of the session was to help students understand the concept of constraint satisfaction problems (CSPs) in AI through an engaging and collaborative approach.

Cryptarithmic puzzles are a classic example of CSPs where digits are assigned to letters such that a mathematical equation holds true. Solving these puzzles requires logical reasoning, backtracking, and systematic exploration of possibilities – all of which align with fundamental AI problem-solving techniques.

Objectives of the Activity

- To introduce students to the concept of cryptarithmic problems in AI.
- To encourage logical thinking and problem-solving through a fun and interactive approach.
- To promote collaborative learning by engaging students in group-based tasks.
- To apply AI concepts of search and constraints in a real problem-solving context.

Methodology

1. The session began with a short explanation of cryptarithmic puzzles along with a worked-out example.
2. Students were then divided into small groups.
3. Each group was assigned a set of cryptarithmic problems to solve within the given time.
4. The group that solved the maximum number of puzzles correctly was declared the winner.
5. The activity was conducted in a game-based format to ensure active participation and enthusiasm.

Student Engagement

- Students actively participated and discussed strategies within their groups.
- The competitive element of the activity motivated them to attempt as many problems as possible.
- Collaborative learning helped students who initially found the concept difficult to gain confidence.

- The session created an environment of fun, challenge, and teamwork while reinforcing the AI concept.

Impact Analysis

- Students gained a clearer understanding of cryptarithmic puzzles and their significance as AI problems.
- They were able to apply constraint satisfaction and problem-solving strategies effectively.
- The activity enhanced teamwork, communication, and logical reasoning skills.
- Students reported enjoying the session and requested more game-based learning activities in future AI classes.

6. Conclusion

The Cryptarithmic Activity was successful in achieving its objectives of enhancing conceptual clarity through an interactive and engaging format. The combination of learning and gaming ensured active student participation and collaborative knowledge building. Such activities will continue to be integrated into the AI course to strengthen student learning outcomes.





Student Feedback:

1) What was the most interesting part of the session for you?

I enjoyed the fact that we learnt this topic through a game. This made it very interesting.

The most interesting or fun part was to group with our friends and solve the problem together!

Brain storming with team

N/A

Solving in group

2) What challenges did you face while solving the problems?

Sometime I got stuck at some point and didn't know what to do next. But Mam helped us through it.

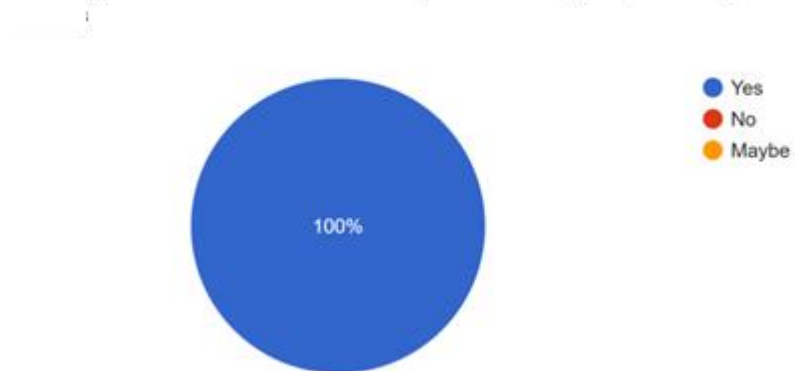
One of the challenges was understanding the concept at first because it was quite new for us but later on with the group solving we could understand the concepts better.

Team sitting arrangement

N/A

For finding solution (Try and error)

Would you like to have more such game-based/group learning activities in AI?



Any suggestions to improve future sessions?

More questions would be fun to solve

NA

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N/A