Lesson Plan

Lesson 3.3 Autonomous system

Warm-up   (05 mins)

Main Activity   (10 mins)

Wrap up   (10 mins)

Extras   (10 mins)

Prerequisites: In our previous chapters we have discussed concept of Neural Networks (page 3), Programming concepts (page 8), Training a Neural Network (page 18), AI Inferencing and Image recognition (page 20). If you haven't already read, please go back.

Lesson Overview: In this chapter students will understand what are autonomous systems in AI and how they've proven to be a boon for developers.

Lesson objective:

To make students understand automated systems and their real life examples.

Requirements:
1. CoderMindz game board
2. Decks of Coder Mindz Code cards

Getting started:

1. Instructors will explain the rule book and students will do the exercise.
2. After the rule book is explained, arrange the cards and the board. After the initial setup, explain cards, movements of the bot, choose starting position and get ready to start the game.

Autonomous:

Autonomous section clearly explains how our neural networks adjust their parameters in order to get to the desired outputs. Autonomous systems reduce the amount of human intervention required and thus are better at solving problems by trying multiple approaches to solve a problem using different algorithms available. These approaches involve the use of algorithms and data manipulation techniques.

For example:

Consider a mathematical equation given below:

$X + Y = 10$

How many possible values of X and Y do you think are possible?

X can be 4 and Y can be 6, the total gives 10. Or, X can be 7 and Y can be 3. As we see, multiple values of X and Y are possible and thus, in similar ways, neural networks will find all the best possible values of X and Y by changing their parameters and it will create a rule to get the output 10.

Board Activity:

1. We'll be playing section 3.1 and 3.2 Basic and Advanced Autonomous Systems from our rule book. The aim should be to teach students about autonomous systems.
2. Each player reviews their code cards. The sequence of our programming code. The player who reaches the destination first wins.
3. Follow the rules mentioned in the rule book for this chapter.
4. Write the algorithm of the game played on a sheet.