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HERALD
COLLEGE
KATHMANDU

Introduction to Programming Language

CW2: Coursework 2

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Introduction

- This coursework i.e. the Noughts and Crosses is simply a Tic-Tac-Toe which is a simple two player classic game. The game is played on 3*3 grid, and the main goal of this game is to align three of their marks either (X or O) horizontally, vertically, or diagonally before his/her opponent.

Questions:

1. What are the most challenging aspects of the coursework task?
 - The most challenging aspect of the coursework task was to understand and implement algorithms for optimal play. While developing the game, implementation of all the instructions as provided following the PEP-8 coding standard was also one of the most challenging aspects of this coursework. Maintaining the balance between the technical implementation of algorithms and theoretical implementation of algorithms was also challenging aspects of the given coursework.
2. How did you go about completing the task?
 - At first, I identified the key components i.e. the functions for drawing the board, player moves, computer moves, win/draw case and menu options. The very next step was to implement a welcome function which prints a welcome message to the user. Then all the logic was used for implementing the functions for player moves, computer moves. After that I implemented functions for win/draw case, leaderboard data, save score data and menu options. Then I ensured that each function had a docstring in order to explain the purpose of the code, parameters and return value. I also implemented error handling where necessary. The choice was implemented in the menu function where the user had a choice to play game, save score, load leaderboard or to quit the game. I also implemented the logic for saving the score and showing the leaderboard data and error handling was also done for that. Testing and debugging was done and the coursework was finalized to work.

3. What have you learned over the course of completing this coursework task?

➤ The things that I have learned are mentioned below:

- I learned the understanding of algorithms and the concept of game theory.
- I learned the PEP-8 concept and to use pylint to enforce the coding standards and look for certain types of errors.
- I learned to translate mathematical principles into functional codes.
- I learned to open files which contains content in Json format and trying to convert it to dictionary using Json module, manipulate and again convert them back to file in string.