

# Chess Bot

## Team Name: Code-Techers

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### Introduction:

Human Vs Bot play. Movement of magnetic chess pieces through an electromagnet slider under the chess board .

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### Components Used:

- Electromagnet
- Arduino Board
- Magnetic chess pieces and a board(Big and thin).
- Two long enough rods for slider.
- Two stepper motors.
- Wires,Screws,Tape,..etc.
- Microphone for voice recognition(Will ask mentor which one will be best suited depending on how much accurate our recognition should be).

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## **Description:**

The project has been divided into three parts:

- Mechanical Structure
- Electronics
- Coding

Our main aim is to make a bot which can move chess pieces on the board according to the instructions given. First of all the (best possible) moves are calculated and then conveyed to the arduino.

The arduino instructs the motor accordingly which in turn results in the motion of the electromagnetic slider.

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## **Plan Of Action:**

### **Week 1 (May 18th - May 24th) :-**

Procuring the components required for the final version of the bot.  
Will discuss our design with the mentor.

### **Week 2 (May 25th - May 31st) :-**

Get used to arduino coding.

Will start implementing the mechanical design.

**Week 3 (June 1st - 7th) :-**

Will have learnt to link our C++ program with arduino, and receive and transfer data between the two using timeouts.

Will have finished the proposed design.

**Week 4 (June 8th - 14th) :-**

Will integrate the hardware and software parts of the bot.

Work on voice recognition, and also debug as much as possible.

**Week 5 (June 15th - 21st) :-**

Integrate voice and bot movement.

Will make minor changes to the bot, to suit the above.

Work on improving the chess engine enough to beat a comparatively good player.

**Week 6 (June 22nd - 29th):-**

Final testing and debugging.

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**Idea:**

We are first going to make it such that, the user will be interacting with a graphical interface on the laptop to decide what move he wishes. According to that, the computer will play its move.

For that, we are working on a program, which will see the available moves, and correspondingly make the best possible move, looking some steps ahead.

We will be controlling the movement of the pieces using a

electromagnet and movement is done keeping in mind how a 2D sketcher works. What we will be doing is basically, we will move the piece from the center of the square to the right, by half its length, and move it along those lines. So the coding becomes easier, and no problems arise because of movement of knights.

Then, when we have the above working, we were planning to work on speech recognition, where the person says what move he wants to play, and the bot moves his piece.

Our final bot will be able to play for a human, when he sits behind and tells what move he wants to play, and the bot will play that.

Then it will play its own move.

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### **Expenses:**

Maybe Around Rs.4000

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### **Learning:**

Will learn how to build a good enough chess engine.

Will have learnt basic arduino coding to help us if we take up any further project.

Will have learnt how to build a mechanical design and implement it accordingly.

Will have learnt how to integrate hardware with software.

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### **Team Members:**

- Krishna Harsha
- Rawal Khirodkar
- Vaibhav Bhosale
- Soham Ganatra