

PROJECT DIARY

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Wednesday, 1st October 2014 – 1:00 p.m.

My teammate Manan and I formed our group and deliberated on our project topic. Following earlier discussions with our T.A.s Shudhatma Jain and Ravi Chandra, we finally chose to make a one-player version of Chess, where the user would play chess against the computer. We discussed the potential hurdles, and conceptualized a vague idea of the final program. We will be researching the game and come up with basic ideas for the game in the five-day vacation we have i.e. 2nd – 6th October.

Wednesday, 8th October 2014 – 2:00 p.m.

Manan and I met in our room to begin formal work on the project, and discussed how to begin the game. We decided to create a two-player console implementation of the game (i.e. two users against each other, no graphics), following which we would design an AI on top to let the computer play. We settled on using OOPS, since many of the features would come in handy. Manan began work on the data structures while I created the functions essential to the game, for e.g. `check()`, `attack()`, `getMove()` etc.

Friday, 10th October 2014 – 10:30 p.m.

After our CS lab tonight, Manan and I discussed our current progress on the project. Over the course of the last two days, I had created the functions required for the game, while Manan had more or less completed work on the classes (including the internal member functions). He told me that he would send me his code, and I would integrate his code with mine. I would have to debug the combined code (which will surely have many errors) and get it working.

Tuesday, 14th October 2014 – 8:00 p.m.

Today we met in the H15 mess after my NSO. I had spent considerable time over the weekend debugging the code. As expected, combining two different codes had thrown up several errors. Manan helped me in the debugging, and I saw a few logical errors I had made in my functions. Our two-player version is now working. Adding an AI and graphics are our next goals, and both pose several challenges since we have never worked on either. Manan has some previous experience with OpenSDL, so we will be using that library for our graphics. Manan will start working on graphics, while I will work on the chess engine powering the AI. Additionally, I will create the Draft User Manual for the Stage I submission and compile the Project Diaries, while Manan will work on the SRS and the Project Report.

Friday, 17th October 2014 – 9:30 p.m.

Today's CS lab was reserved for project discussions. The meeting centered around Stage I of the project submissions. We asked our TA about what all need to be included in the various documents. We broadly discussed the various documents, and got an idea of how to complete the documentation. Overall, this was a productive lab session, and hopefully we will complete the documentation well before the deadline.

Monday, 27th October 2014 – 5:00 p.m.

We spent a considerable amount of time during the Diwali vacations working on our respective project responsibilities. I started work on the AI. I also started writing member functions for each piece to find a list of all the possible moves possible by a piece. Manan has started work on the graphics, and said that OpenSDL will provide a more fluid and smoother interface as compared to other graphics libraries.

Friday, 31st October 2014 - 9:30 p.m

After tonight's CS lab, Manan and I discussed where the program currently stood, what remained to be done and the challenges we

faced. We decided to discontinue work on the project for the time project, since the End Semester Examinations are almost upon us. The remaining work on the project should get completed comfortably before the deadline.

Tuesday, 18th November 2014 – 6:30 p.m.

Most of our End Semester papers are over, so Manan and I are going to resume work on the project. We will be coding together in Manan's room, because we can help each other with problems and discuss features more easily, and additionally my LAN isn't working. I am continuing work on the back-end of the program.

Wednesday, 19th November 2014

After an intense half an hour where we came up with our own MiniMax algorithm, we decided to not implement a tree structure, instead opting for a dynamic linked list where nodes keep replacing each other, thus being memory efficient. Writing code for this structure is a challenge, as well as a function to evaluate a particular board position.

Thursday, 20th November 2014

After writing the code for the MiniMax algorithm as well as the evaluation function, the AI is now functional. However, some of its moves don't make sense. We will need to investigate the code to find the bug. All that remains to be done apart from that is to implement a function to properly evaluate the board to let the AI decide which is the best move to play.

Friday, 21st November 2014

Eureka ! We found the bug, and now the AI is working (almost) perfectly. The computer is defeating me on a consistent basis, but then again I'm not a very good player. However, the AI plays at Manan's level, who is quite a good player. Apart from a few finishing touches here and there, the project is more or less complete. Only the documentation remains, which we will comfortably complete before the deadline.