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Project Description:

I made this app as an attempt at making my own sudoku puzzle game. The purpose of this was to experiment with developing a game and utilizing some different methods we have learned throughout this course. My application is based primarily on hw2 where we used a gridView to make a simple game. The game from homework 2 was something like snake but the gridView and updating functionality was what I needed for this app. I took this project because I was comfortable with it and worked on making the necessary changes for it to run as a sudoku game. My app contains a runnable, threading, a gridview, an adapter, an onClickListener, a user input (editText) among the various components I used. This app is far from perfect and in fact quite frustratingly you’ll see a lot of commented out code for now as I am trying to come to grips with enforcing the rules of sudoku. As of now the user is essentially free to break the rules, and must know how to play to use the app. This isn’t that big of a deal in my view as it’s still playable and a paper equivalent version has the same degree of freedom. I used a toast message as a way to debug and provide myself with some live information about what cells are clicked and what regions, rows and columns they are in. I tried to use this data to implement the rules of Sudoku but so far my implementations have all had problems. I feel the logic is close and will spend the rest of the weekend (5/21) trying to get those working. Fundamentally this is a quite small and simple app. There is only one activity, a couple views (for the buttons and grid).

The use of a ui thread and background thread in this app allows it to function quickly while the user inputs data. This is an extension again of the functions in hw2. While I mentioned the lack of functional rules in the game, I can also cover some other things I’d like to add in the future. As of now the sudoku has only one puzzle which is hard coded into it. I could make a series of puzzles and come up with a much more elegant structure for initializing this. I was thinking clicking reset would cycle through them, possibly have a difficulty toggler somewhere at the bottom.

In implementing this app, I was able to use a lot of the core structure from my submission of hw2. The major changes are a way to pass numbers from the user to the tiles as well as an undo function. To handle this, I used an editText. At first, I had the editText set for numbers but had a glitch that cost me a lot of time trying to figure out, where nothing was happening when I entered a number and clicked a tile. To fix that I finally just went with a generic editText and it turned out my logic was fine. I was hoping for a similar outcome with my rules but so far, no luck. I did implement an undo function which allows the user to go back one step between turns. I could have given it unlimited back steps but I like this way as it keeps it more of a challenge. I hope you see in my commented code that I attempted to setup rules for every sudoku possibility. I know my methods were a bit hacky so I will try to readdress that this weekend.

As for testing the app, every time I made a change I went back and tried to see how it effected things. The toast messages were extremely helpful for seeing what information I was getting which helped me with figuring out where my data was and how the values I had matched my expectation. I believe this may have been an easier app to do with a different View in hindsight. Part of my trip up has been thinking about an array in 2 dimensions and working out how to interpret that into easy to apply rules across the board. Some better math would have likely made the rules implementation go a bit smoother. I do have some calculations in there for finding the “coordinates” (rows and columns) of the various cells, so it would probably be a lot easier if I just used that. Calculate the x and y values of each cell and then compare those cells to the clicked cell and go from there, something like that.   
 Many functions in this app are lacking and it would be great to implement some more. I am very disappointed in myself for not getting the rules to work yet. I am hoping I can figure out what’s going on there this weekend… If you look over my commented code you’ll see a section for each rule in sudoku. All numbers in a sector must be 1-9 no repeats, same for in a row or column. I have checks implemented for all of that and I really feel like those checks should work. A timer tracking the time it takes to complete a sudoku would be cool, and could lend to a leaderboard too, which I could have correlated to difficulty level. Then I would implement some persistent data too if I add a leaderboard. I would have liked to have a completion notification too. I planned to, but in getting slowed down with implementing the rules I was not able to get that far. I also planned on using the rules as a bit of a crutch for that. No need to check the validity of the finished Sudoku if I know you followed the rules every turn. Filled board = won game. Along with that it would have been nice to add some colors and highlight the 9 sectors of the board. A highlight on the cell last clicked too would have been a nice addition. Ultimately if you know how to play sudoku, the app is functional, just without the rules I was hoping to add. I also ended up struggling for a long time on what I wanted to make for this project which ended up hindering me a lot. At first, I wanted to make something to journal car repairs but felt that it was a bit simple, and I couldn’t really think of how to make it nice. My own fault, but I started making about 4 different projects before deciding they were either too simple or too hard or I was lost in what I wanted to do. I found doing the sudoku was useful as it was clear exactly what needed to be done to make it function. I had a nice semester in your class and really enjoyed the content. It’s been a bit of a rough semester for me, and I feel I didn’t really demonstrate my best abilities, but you were a wonderful teacher and I enjoyed your course a lot. If I suggest anything going forward, perhaps more small projects/ homework or like steps? I found myself struggling at various points in implementing certain concepts and just would have probably done better for my own learning with more small assignments. A test may have been useful for my grade too ultimately. I wish I had started this earlier as admittedly I got a bit swamped with end of semester work and waffling on what I wanted to do. This summer I plan to keep working on Android apps though! I enjoyed it and I have a much more ambitious idea next. I like simulation racing (video games) and was hoping to build an app for accessing live game data on my phone. I believe this will be a big challenge, but I have started looking into the meat. It was my initial final project idea, but the logistics were way too much. Would have had to give you some sort of piped in data stream to even attempt, and it is just more appropriate as a pet project/ portfolio item. I may email you this summer with questions regarding this if you do not mind. Hope you have a great summer, all the best! Thankyou for everything this semester!