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Basic Python, correcting Tutor: Felix Hammer

Programming journey for our project: NBA-Cards

First, we thought about the type of project we wanted to do. We decided on data visualization because none of us did this in an earlier project and it seemed appropriate. Our plan was to find datasets about NBA players and create cards out of the data in which the user can see all the important skills of one player at once. Here we faced the first problem because it was not as easy as we thought to find fitting datasets. We still have no dataset with all the player IDs of this season but this problem will be explained later.

After finding the data, we merged it. Here we had some problems as well because some players were written differently in the different datasets, for example with a special letter (like á) or just “a” instead. To avoid that and other problems, we did some data preprocessing. We simplified special letters. As an example: ”Luka Dončić" was changed to "Luka Doncic”. We also filtered the data to get only the information we needed. While merging the data we figured out that there are different types of merging and it is important which kind of merge is performed. (In our case we needed an inner and a left merge.)

Now we had our final dataset. We stored it as a csv-file, so that we could have a look at our data anytime. After that we started creating the cards. We designed the background of each card per hand and added the information we filtered out in the data preprocessing. Here we differentiated between general information like team, position and height and information about the stats like assists, points per game and so on. Moreover we printed the name of the player on the bottom of the card. Later on (while trying different player names) the problem occured that very long player names did not fit onto our card. We needed to change our code so that names longer than 14 characters are written smaller. The next problem occured at the same time because not all the cards had an image. That is because of the problem we mentioned earlier, some missing player IDs. Originally we wanted to print an image from the URL via the player ID. To solve this problem for the missing values we searched and downloaded images from “bing”.

The final touch of the card is the overall score. We created it ourselves and added it in the preprocessing-step so that the column is in the final data as well. It was a little tricky to find a formula for the overall score because in the end the best player should be able to reach a maximal score of 100. That worked out nicely since the official MVP

(Most Valuable Player) Nikola Jokic got 99 Points in our rating. Nevertheless we know that our thoughts might be quite subjective and might not be what a professional would tell you. But we also faced some problems in this step because the program did not calculate the score if there were empty cells in the data. That is why we needed to add zeros in every empty cell in our data set.

Finally, all the information with name and picture was on the card and we were quite satisfied with it. Nevertheless there is a lot one could expand. For example beside the card could be graphics showing how good the stats are in relation to all other players/ to other players from the same position. Or one could make a game out of the cards, for example an online quartett. An add-on we ourselves included is a function that stores all cards in a file so that one can look at the cards anytime. (This function was quite hard to program, because the program has to run for every player - so there can’t be exceptions.)

All in all: the project was great to recap all the different features we learned during the course. Additionally, we learned how to work with a few new libraries, how to search for and implement images and how to work on a coding project from scratch. We are really happy with the end product - we hope you will be happy too :)