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Hw1 cs2303

Calendar assignment

To start off the assignment I began by using the class sides as a guideline to the formate. First I wrote the main function to print out a statement asking the user for a year. Then under that I use scanf to take that value and store it in year. I have an if statement that returns an error if the input is a number less than 0 (so any negative year). Then I started by making the void printCalendar that passes in year and starting day, as said in the directions. Inside that function printMonthName is initiated and printMonth set to the startingDay. Then above printCalendar is printMonthName where I use a switch statement to print out the names of the month with the year after and set each month equal to the number of days it has. (Used a switch statement instead of an array because the assignment wouldn’t let us use an array). Then printMonth where I put the code that was given in the slides. It has a loop that prints out each day of the week and goes to the next line after a week if filled up. At the top I print out blank space at the beginning of each month to align the days of the month to go under the correct day of the week. Then to find the starting date at the top I have a startingDay function where it assumed the first day of the year is a sunday and then depending on if its a leap year will shift it over the number of days it needs to be correct.

At first I had a big problem with the days of the week, then I realized to put it after the switch statement and everytime it looks and prints the month name it prints Sun-Sat under. It also took me a bit to figure out how to get the spacing correct with the \n, I had to guess and check a bit until it was formatted correctly. Then a big problem I had, which was the most difficult part of the task was figuring out an algorithm for a leap year and the starting day. I initially wanted them separate but then found that the two could work together. I looked up leap year algorithms into google and found a description of how it works and tried out different combinations of the code until one worked properly. I used this website: <http://www.dispersiondesign.com/articles/time/determining_leap_years> I made a case for each leap year calculation, so 1. That a leap year happens every 4 years, 2. That if it’s the 100th year in the loop that it isn’t a leap year (so i subtract it at the end), and 3. That every 400th year is is a leap year. Then in the return statement I have mod 7 because there are 7 days a week and it changes where that week starts. To make sure my calendar works I went on timeanddate.com and compared the starting dates with my terminals output. Also at first I had all my variables global variables, once I had made them local I had a lot of issues with the program printing out a never ending list of numbers and I freaked out. I realized that I had to change some things to be passed in as a parameter because when making them local variables it would initialize them back to zero and that would make the program never stop (the int days was a huge problem for a while).