Deeksha Juneja

Cpre 308

Lab 11

Introduction

This lab seemed to be an extension of the last lab in terms of using the FAT-12 system. I built up on the code written in the previous lab. In the previous lab, I had analyzed the boot sector for FAT-12. For this lab, extending on that code, I am analyzing the root directory. It started off as a relatively simple lab of reading the name of all the files in the directory, printing out it's attributes, time, date, etc. I made a struct to access all these data values. It was pretty interesting to use the knowledge I gained in Cpre 288 and do bit masking to find out the Attribute, Date and Time. Finding the date and time were rather interesting as well as it required shifting and masking as well.

However, the recursion part was rather difficult. Before attempting to implement the recursion, I was just doing everything in the main. However, while implementing the recursion, I moved my root directory access to another function which then became the recursive function I called on. Moreover, I made another function to do calculation for the offset and sector etc. In my recursion function, what I am trying to do is that I am looping through all the entries in the directory and then print out their information. Then I am checking for my flag value and the value of the first cluster. If the first cluster is not a root directory, then I set the flag to 1 and set hold_cluster. I also check in the attributes if I have a directory. If there is a directory, then I go inside the directory and the recursion occurs. My recursion occurs through a variable called next which checks for the next cluster value which comes in through the calc_func. The first value of next is set to be the value of the first cluster which is 0 for root directory.

I have had a lot of problems with this lab. I have tried for a long time to implement the recursion but have not been extremely successful with it. I somehow end up in an infinite loop which I cant understand where it comes from. I have tried to look at the code in small chunks but everything seems to be working pretty well. However, the main problem was with the way I was trying to do the recursion. I changed the way I was calling my function outside the for loop and everything seemed to be working better. Another change I made for checking of the filename. So I was checking for filenames starting with different things and breaking out of the loop depending on the what the starting value was.

I was also able to successfully incorporate the R flag in the code. So, if you simply put the R flag after the file name, then you will get the recursion, otherwise, if you don't put the R flag, the recursion wont happen.

Even though this lab was really time consuming, I was able to successfully complete it with the help of my TA. A little more guideline would have been helpful in figuring out this lab. The website was pretty helpful but I think a little more information would have made this lab easier.