ECE - 270: Computer Methods in ECE

Assignment #3 - HTML Webpage Generator

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1 Statement of the Problem

This document will describe how to write a C program which creates a document containing HTML code containing various images and names of the author's classmates. The results will then print a file that when can be opened in a web browser to display a basic web page. This web page will include a heading with the class name and a table showing images of students who are in the class with their name.

2 Description of Solution

In order for an HTML file to be created using C code, an `fprintf()` argument has to be made instead of the typical `printf()` statement that has been used. This statement will directly write to a file what is in the quotations. In this case, we created a text file that contained various URLs and names of people in the ECE 270 - Computer Methods in ECE I course. This file was then read into a C program that contained the skeleton of HTML code that is needed to create the HTML file. The HTML code is then opened in a web browser to test if the code works completely.

3 Testing and Output

Using Visual Studio 2022, a program was created to write an HTML file using C code. The output that was obtained from creating the code was as follows:

```
E:\Saved Files\Documents\School\U of M-Dearborn\ECE 270 - Computer
    Methods\Visual Studio\Assignment 3\x64\Debug\Assignment 3.exe (process 17888)
    exited with code 0.
```

This created a file that, when clicked on, opened into a web browser and contained everyone who uploaded an image and their name for the ECE 270 - Computer Methods in

ECE I Fall 2022 class. There were several issues that I ran into creating this code. It was quite difficult. Most of the code I was able to obtain from the notes, but once I tried to edit the code and add more to it, I ran into several errors and warnings. After several failed attempts and some further explanation from a classmate that understood the assignment better than I did, I was able to reach the final code. I could certainly edit the HTML code further to edit the background color and format the pictures a little better, but that would be utilizing the HTML and CSS coding knowledge I have, which is not the code we are learning in this class. Instead of editing it further, I left it as is.

4 Code

```
#define _CRT_SECURE_NO_WARNINGS

#define STR_LEN 200

#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <time.h>
/*
<html>
   <head>
      <style>
         td.image {padding-top: 2em; padding - right: 3em;}
         td.name {padding-top: 0em;
               font-family: sans-serif;
               font-size: 10pt;}
         img {border: 2px solid black;}
      </style>
   </head>

   <body>
      <h1> ECE 270 Fall 2022 </h1>
      <table>
         <tr>

         //Start loop here (see images funciton)
            <td class = 'image'>
               <figcaption> %s </figcaption>
```

```
            <img width='200' height='200' src = '%s'>
          </td>

        </tr>
      </table>
   </body>
</html>
*/

void removeNewLine(char str[]) {
   if (str[strlen(str) - 1] == '\n') {
      str[strlen(str) - 1] = 0;
   }
}

int main() {
   FILE* in;
   FILE* out;

   in = fopen("Class.txt", "r");
   if (in == NULL) {
      printf("Something might be here. I'm not quite sure.");
   }

   out = fopen("Images.html", "w");
   if (out == NULL) {
      printf("Check the folder this project is in?");
   }

   char str[STR_LEN];
   int lineIndex = 0;

   fprintf(out, "<html>");
   fprintf(out, "\n\t<head>");
   fprintf(out, "\n\t\t<style>");
   fprintf(out, "\n\t\t\ttd.image {padding-top: 2em; padding-right: 3em;}");
   fprintf(out, "\n\t\t\ttd.name {padding-top: 0em;");
   fprintf(out, "\n\t\t\t\t\tfont-family: sans-serif;");
   fprintf(out, "\n\t\t\t\t\tfont-size: 10pt;");
   fprintf(out, "\n\t\t\timg {border: 2px solid black;}");
   fprintf(out, "\n\t\t</style>");
   fprintf(out, "\n\t</head>");

   fprintf(out, "\n\n\t<body>");
   fprintf(out, "\n\t\t<h1> ECE 270 - Fall 2022 </h1>");
   fprintf(out, "\n\t\t<table>");
```

```
   while (fgets(str, STR_LEN, in) != NULL) {
      removeNewLine(str);
      lineIndex++;

      if (lineIndex >= 8) {
         if ((lineIndex % 4) == 0) {
            fprintf(out, "\n\t\t\t<tr>");
            fprintf(out, "\n\t\t\t\t<td class = 'image'>");
            fprintf(out, "\n\t\t\t\t\t<figcaption>%s ", str);
         }

         if (((lineIndex - 1) % 4) == 0) {
            fprintf(out, "%s</figcaption>", str);
         }

         if (((lineIndex - 2) % 4) == 0) {
            fprintf(out, "\n\t\t\t\t\t<img width = '200' height = '200'
               src='%s'>", str);
            fprintf(out, "\n\t\t\t\t<td>\n");
         }
      }
   }

   fprintf(out, "\n\t\t</table>");
   fprintf(out, "\n\t</body>");
   fprintf(out, "\n</html>");

   fclose(in);
   fclose(out);
}
```