CS2263 Assignment 2

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- Feb 16th 2024
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Question 1

For my **htags1** program, I used a while loop to read in 1 character from stdin with `getchar()`. From this character, I would determine if I was inside a tag or not by keeping track of a boolean variable that told me so. If I was in the proper opening tag (and not a comment) I would keep reading and printing to the terminal with `putchar()` until the closing bracket was met. I would also keep track if I was in a comment or not with a boolean variable & only printed characters if the condition of being in the tag & not in a comment was met.

Question 2

```c
#include <stdio.h>
#include <stdbool.h>

int main()
{
    int c, d;
    int opener = '<';
    bool inTag = false;
    bool in_comment = false;
    while ((c = getchar()) != EOF)
    {
        // inside tag
        if (c == '<')
        {
            d = getchar();
            // we know it is a comment
            if (d == '!')
            {
                in_comment = true;
            }
            else
            {
                // not in comment, add in the extra characters back
                inTag = true;
                putchar(opener);
                putchar(d);
                continue;
            }
        }
        // outside tag
        else if (c == '>')
        {
            // check if we are still in the comment
            if (in_comment)
            {
                in_comment = false;
                continue;
            }
            else
```

```
            {
                putchar(c);
                putchar('\n');
                inTag = false;
            }
        }
        // keep printing chars until either condition is false
        if (inTag && !in_comment)
        {
            putchar(c);
        }
    }
}
```

Question 3

A similar approach was used for **htext1**, however, the character that would determine starting & stopping points was switched. So instead, I was looking for > for my start & < for my end.

I used the same iterative approach by reading and printing characters out one-by-one.

Question 4

```
#include <stdio.h>
#include <stdbool.h>

int main()
{
    int c;
    bool inTag = false;
    bool outTag = false;
    while ((c = getchar()) != EOF)
    {
        // outside of the tag, also the start position
        if (c == '>')
        {
            outTag = true;
            continue;
        }
        // inside of a tag, also the stop position
        else if (c == '<')
        {
            inTag = true;
            outTag = false;
        }
        // keep printing until we reach another opening tag
        if (outTag)
        {
            putchar(c);
```

```
            }
        }
        putchar('\n');
    }
```

Question 5

htags1 Output 1

```
rinor@rinors-mac Assgn2 % ./htags1_3 < another_test.html
<html>
<b>
</b>
</html>
rinor@rinors-mac Assgn2 %
```

htext1 Output 1

```
rinor@rinors-mac Assgn2 % ./htext1_2 < another_test.html
  TEST
rinor@rinors-mac Assgn2 %
```

Question 6

htags1 Output 2

```
rinor@rinors-mac Assgn2 % ./htags1_3 < A2W2024.html
<html>
<head>
<meta http-equiv=Content-Type content="text/html; charset=unicode">
<meta name=Generator content="Microsoft Word 15 (filtered)">
<style>
</style>
</head>
<body lang=EN-CA link=blue vlink=purple style='word-wrap:break-word'>
<div class=WordSection1>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
</b>
</p>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
</b>
</p>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
</b>
</p>
<p class=MsoNormal style='text-align:justify'>
<span lang=EN-US
style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoNormal>
<u>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<b>
</b>
</span>
</u>
</p>
<p class=MsoNormal>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
```

```
</p>
<p class=MsoNormal>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<a href="https://www.educba.com/types-of-tags-in-html/">
<span
style='text-decoration:none'>
</span>
</a>
</span>
</p>
<p class=MsoNormal>
<span style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:0cm;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<i>
<span
style='font-family:"Times New Roman",serif'>
</span>
</i>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-family:"Courier New"'>
</span>
<span lang=EN-US
style='font-family:"Times New Roman",serif'>
<b>
</b>
</span>
<span lang=EN-US style='font-family:"Courier New"'>
</span>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
<a
href="https://linuxcommand.org/lc3_lts0070.php">
</a>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
```

```
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:25.1pt;margin-bottom:.0001pt;text-indent:18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<br>
<br>
<br>
<br>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:25.1pt;margin-bottom:.0001pt;text-indent:18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<br>
<br>
<br>
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<br>
<br>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
<br>
<br>
<br>
</span>
<b>
<span lang=EN-US
```

```
style='font-family:"Courier New"'>
</span>
</b>
<span lang=EN-US
style='font-family:"Times New Roman",serif'>
</span>
<b>
<span lang=EN-US style='font-family:"Courier New"'>
</span>
</b>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<b>
<span lang=EN-US style='font-family:"Courier New"'>
</span>
</b>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span lang=EN-US style='font-family:"Courier New"'>
</span>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span style='font-family:"Times New Roman",serif'>
<u>
</u>
</span>
</p>
```

```
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
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0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
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12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span style='font-family:"Times New Roman",serif'>
<u>
</u>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
12.0pt;margin-left:43.1pt;text-indent:-18.0pt;line-height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span style='font-family:"Times New Roman",serif'>
<br>
<br>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span style='font-family:"Times New Roman",serif'>
</span>
```

```
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<span style='font-family:"Times New Roman",serif'>
</span>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;text-indent:0cm;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;text-indent:0cm;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoNormal>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
</div>
</body>
</html>
rinor@rinors-mac Assgn2 %
```

htext1 Output 2

```
rinor@rinors-mac Assgn2 % ./htext1_2 < A2W2024.html









CS 2263

Assignment 2

Due: Feb. 21, 2024 (before midnight)

_____________________________________________________

Assignments
are to be completed individually (not as a group work).

 

Sample
reference: https://www.educba.com/types-of-tags-in-html/


 

Processing strings

Develop and test two
utility programs called  htags1  and  htext1  to process an HTML file. The
htags1 program should  print all
HTML tags, except the HTML comment tags &lt;!-- --&gt;, one per line of
output. The htext1 program should print
all plain text extracted from the source HTML file, i.e. just the text, no
tags. The utility programs should read form standard input and may use the
input redirection to access
a file. (This means that your program code should read from standard
input, and
NOT perform any file operations, like fopen() etc. You may capture the
output
from your program using output redirection, or you may just output to the
```

```
terminal window and print the screen, your choice.)

Assume an
HTML tag is any text enclosed between &lt; and &gt;, including these
delimiter
characters. The end tags, like &lt;/p&gt;, are valid tags. For example, in
a
sample input HTML file containing:


&lt;body lang=EN-CA link=blue vlink=&quot;#954F72&quot;&gt;
&lt;div class=WordSection1&gt;
&lt;p class=MsoNormal&gt;&lt;b&gt;&lt;span lang=EN-US
style='font-size:14.0pt;font-family: &quot;Times New
Roman&quot;,serif'&gt;CS
2263&lt;/span&gt;&lt;/b&gt;&lt;/p&gt;
&lt;p class=MsoNormal&gt;&lt;b&gt;&lt;span lang=EN-US
style='font-size:14.0pt;font-family: &quot;Times New
Roman&quot;,serif'&gt;Assignment 2&lt;/span&gt;&lt;/b&gt;&lt;/p&gt;


we find the following tags:

&lt;body lang=EN-CA link=blue vlink=&quot;#954F72&quot;&gt;
&lt;div class=WordSection1&gt;
&lt;p class=MsoNormal&gt;
&lt;b&gt;
&lt;span lang=EN-US style='font-size:14.0pt;font-family: &quot;Times New
Roman&quot;,serif'&gt;
&lt;/span&gt;
&lt;/b&gt;
&lt;/p&gt;
&lt;p class=MsoNormal&gt;
&lt;b&gt;
&lt;span lang=EN-US style='font-size:14.0pt;font-family: &quot;Times New
Roman&quot;,serif'&gt;
&lt;/span&gt;
&lt;/b&gt;
&lt;/p&gt;

and the plain text in this sample input is:

CS 2263 Assignment 2


When outputting the plain text you may keep new line characters present in
the
input, or you may replace them with space characters.

The data to your program should be read from standard input (use the input
redirection to read from the HTML file) using the getchar() function. The
output should be
done using the putchar() function and/or using
the printArr() function from Assignment
```

```
1. You must use the printArr() function at least once in
each utility program developed for this assignment. The Assignment Report
should consist of the following parts/exercises:

1.     
In a few
sentences describe the design of the htags1 program. Focus on the
description of
the algorithm used and of any data structures needed to complete the task.

2.     
Show the complete
source code for htags1.

3.     
In a few
sentences describe the design of the htext1 program. Focus on the
description of
the algorithm used and of any data structures needed to complete the task.

4.     
Show the complete
source code for htext1.

5.     
Show the output from
running htags1 and htext1 programs on the following input HTML code (store
it
in a file and use input redirection to read):

&lt;html&gt; &lt;b&gt; TEST &lt;/b&gt; &lt;/html&gt;

6.     
Show the output from
running htags1 and htext1 program on this HTML file, i.e. the very file
describing this assignment: you need to download this file separately from
D2L
to your computer
(do not download the entire D2L web page!). The file name is
A2W2024.html.    
 

7.     
Show the output from
running htags1 and htext1 program on another HTML file, of your
choice.    
 

 

Submit a
SINGLE PDF FILE with your Assignment Report and it should include: a
heading
for each exercise 1 to 7, including the source code of each completed
```

```
program
and the screenshots of the terminal window (or the contents of the file
with the
redirected program output) showing the test runs. In case of multiple
submission the most recent item in your Dropbox will be graded.

 




rinor@rinors-mac Assgn2 %
```

Question 7

This HTML file is from the Assignment 1 D2L page for CS2263.

htags1 Output 3

```
rinor@rinors-mac Assgn2 % ./htags1_3 < A1W2024.html
<html>
<head>
<meta http-equiv=Content-Type content="text/html; charset=unicode">
<meta name=Generator content="Microsoft Word 15 (filtered)">
<style>
</style>
</head>
<body lang=EN-CA style='word-wrap:break-word'>
<div class=WordSection1>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
</b>
</p>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
</b>
</p>
<p class=MsoNormal>
<b>
<span lang=EN-US style='font-size:14.0pt;font-family:
"Times New Roman",serif'>
</span>
```

```
</b>
</p>
<p class=MsoNormal style='text-align:justify'>
<span lang=EN-US
style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:0cm;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
<u>
<b>
</b>
</u>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
<br>
</span>
<i>
<span style='font-family:"Times New Roman",serif'>
</span>
</i>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
style='font-family:"Times New Roman",serif'>
<i>
</i>
<i>
</i>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:7.1pt;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
```

```
12.0pt;margin-left:43.1pt;text-indent:-18.0pt;line-height:12.0pt'>
<span
style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
<br>
<br>
<br>
<span style='font-family:"Courier New"'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
<span style='font-family:"Courier New"'>
</span>
<i>
</i>
<i>
</i>
<br>
<u>
</u>
<br>
<br>
<span style='font-family:"Courier New"'>
</span>
<span
style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
<br>
```

```
<span
style='font-family:"Courier New"'>
</span>
<span
style='font-family:"Courier New"'>
</span>
<strong>
<span style='font-family:Times'>
</span>
</strong>
<span style='font-family:"Courier New"'>
</span>
<br>
<br>
<span style='font-family:"Courier New"'>
</span>
<span
style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
12.0pt;margin-left:43.1pt;text-indent:-18.0pt;line-height:12.0pt'>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
<br>
<span
style='font-family:"Courier New"'>
</span>
<span style='font-family:"Courier New"'>
</span>
<span
style='font-family:"Times New Roman",serif'>
</span>
<span style='font-family:
"Courier New"'>
</span>
<strong>
<span
style='font-family:Times'>
</span>
</strong>
<span
style='font-family:"Courier New"'>
</span>
<span style='font-family:"Courier New"'>
```

```
</span>
<span style='font-family:"Courier New"'>
</span>
<span style='font-family:"Courier New"'>
</span>
<br>
<br>
<span style='font-family:"Courier New"'>
</span>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
12.0pt;margin-left:43.1pt;text-indent:-18.0pt;line-height:12.0pt'>
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<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
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0cm;margin-left:43.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
<br>
<i>
<u>
</u>
</i>
<i>
<u>
</u>
</i>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:79.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:79.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
<i>
</i>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
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right:0cm;margin-bottom:
0cm;margin-left:79.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
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<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:79.1pt;margin-bottom:.0001pt;text-indent:-18.0pt;line-
height:
12.0pt'>
<span style='font-size:7.0pt;font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;margin-
right:0cm;margin-bottom:
0cm;margin-left:0cm;margin-bottom:.0001pt;text-indent:0cm;line-
height:12.0pt'>
<span
lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;text-indent:0cm;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<i>
</i>
</span>
</p>
<p class=MsoBodyTextIndent style='margin-top:6.0pt;text-indent:0cm;line-
height:
12.0pt'>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
<b>
<u>
<span style='color:red'>
</span>
</u>
</b>
</span>
</p>
<p class=MsoNormal>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</span>
</p>
</div>
</body>
</html>
rinor@rinors-mac Assgn2 %
```

htext1 Output 3

```
rinor@rinors-mac Assgn2 % ./htext1_2 < A1W2024.html
```

```
CS 2263

Assignment 1

Due: January 29, 2024 (before midnight)

_____________________________________________________________

 Assignments are
to be completed individually (not as a group work).


getchar(),
putchar(), functions

On this assignment you are asked to
use the character input/output operations (getchar(), putchar()) rather
than formatted input output (please do not use scanf, printf).

 

1.    
Exercise 1 (display a prompt using putchar())
Write a function that accepts a character array of length n and prints all
n
characters form this array one character at a time using putchar() to the
console. Then use this function in a program that prints the Hello World
message.

void printArr(char a[], int n)

2.    
Exercise 2 (print an int
 with all digits reversed using putchar() )
```

```
Write a function that accepts an unsigned integer and prints this value
one
character at a time, and in the reversed order, to the console. Then use
this function in a program to print an integer value 2263 in the reversed
order
as 3622.

void printReversed(int n) &amp;nbsp;&amp;nbsp;

&amp;nbsp;

3.&amp;nbsp;&amp;nbsp;&amp;nbsp;&amp;nbsp;
Exercise 3 (convert char digits into int )
Write a function that accepts a character array representing digits of an
unsigned integer with its digits stored in the reversed order and returns
the
integer value represented by these characters. For example, the function
convertInt when called on the array char a[]={'3','2','1'} would return
integer value 123.
Parameter n holds the number of
digits stored in the array.

int convertInt(char a[], int n) &amp;nbsp;&amp;nbsp;&amp;nbsp;

&amp;nbsp;

4.&amp;nbsp;&amp;nbsp;&amp;nbsp;&amp;nbsp;
Exercise 4 (add two numbers represented as reversed strings)
Write a function that accepts two character arrays representing digits of
two unsigned
integer with their digits stored in the reversed order, and returns the
integer
value representing the sum of these two integers. For example, the
function addReversedInt when called on the
array char a[]={'3','2','1'} and char b[]={'6','5','4'} would return
integer value 579. Parameters n and m
hold the number of digits stored in arrays a[]
and b[] respectively. Use the
function form Exercise 3 to performs string to integer conversions.

int addReversedInt(char a[], int n,
char b[], int m) &amp;nbsp;&amp;nbsp;&amp;nbsp;


&amp;nbsp;

5.&amp;nbsp;&amp;nbsp;&amp;nbsp;&amp;nbsp;
Exercise 5 (simple calculator working on integer numbers entered with
digits reversed)
Write a program that prompts the user for two unsigned integer numbers and
prints the sum of these two numbers. The numbers are to be entered with
their
digits reversed and the result should be printed with the digits reversed
as
```

```
well. So, for example, if the user wanted to add twenty five to one
hundred twenty three, they would enter 321 for the first number, 52 for
the second and get the result 841 representing 123+25=148. Use the
functions
developed for exercises 1, 2, 3 and 4. You program should:

a.    
Display a prompt (use the function from Exercise 1),

b.    
Read characters form the console (one at a time, using getchar())
representing the two integers to be added (assume maximum of 10 digits for
each
number, no spaces, each number on the input is terminated by the  \n
character), and store them in two arrays,

c.    
Add the two numbers using the function developed for Exercise 4,

d.    
Print the result of adding the two numbers entered by the user, with the
digits printed in the reversed order (use the function from Exercise 2 for
printing).

      
 

Reminder:
use only the getchar(), putchar() functions for input/output. Include
minimal comments in your programs (use Section 11.4 and the programming
examples in the textbook as a guide).

Submit a
SINGLE PDF FILE with your Assignment Report and it should include:  cover
page , headings for each exercise, the source code of each completed
program
and the screenshots showing couple test runs for
each exercise. When testing functions in exercises 1, 2, 3 and 4
you may need to write a driver program.

 




rinor@rinors-mac Assgn2 %
```