Assignment 2

1)
To compile and run the "htags2" program in C, you'll first need to save the provided C code into a file named "htags2.c". Once saved, open a Terminal or Command Prompt and navigate to the directory where "htags2.c" is located. Next, compile the code using the GCC compiler by executing the command "gcc htags2.c -o htags2" in the terminal. This will generate an executable file named "htags2". To run the program, provide an HTML file as a command-line argument by typing "./htags2 Test.html" in the terminal, replacing `input.html` with the path to the HTML file you want to analyze. If the compilation and execution are successful, the program will print each unique HTML tag found in the provided HTML file. Make sure you have GCC installed on your system to compile the C code. Adjust the compilation command if you're using a different compiler.

2)
```
/**
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*/
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define MAX_TAGS 100
#define MAX_TAG_LENGTH 100

char tags[MAX_TAGS][MAX_TAG_LENGTH];
int tagsCount = 0;

int isComment(const char *line) {
    return (line[0] == '<' && line[1] == '!' && line[2] == '-'
&& line[3] == '-');
}

void extractTags(const char *line) {
    const char *start = line;
    while ((start = strchr(start, '<')) != NULL) {
        const char *end = strchr(start, '>');
        if (end == NULL)
            break;
        if (!isComment(start)) {
            int length = end - start + 1;
            if (length < MAX_TAG_LENGTH) {
```

1

```c
                    strncpy(tags[tagsCount++], start, length);
                    tags[tagsCount - 1][length] = '\0';
                }
            }
            start = end + 1;
        }
}

void printUniqueTags() {
    for (int i = 0; i < tagsCount; i++) {
        int j;
        for (j = 0; j < i; j++) {
            if (strcmp(tags[i], tags[j]) == 0)
                break;
        }
        if (i == j)
            printf("%s\n", tags[i]);
    }
}

int main(int argc, char *argv[]) {
    if (argc != 2) {
        printf("Usage: %s <filename>\n", argv[0]);
        return 1;
    }

    FILE *file = fopen(argv[1], "r");
    if (file == NULL) {
        printf("Error opening file %s\n", argv[1]);
        return 1;
    }

    char line[BUFSIZ];
    while (fgets(line, sizeof(line), file)) {
        extractTags(line);
    }
    fclose(file);

    printUniqueTags();

    return 0;
}
```
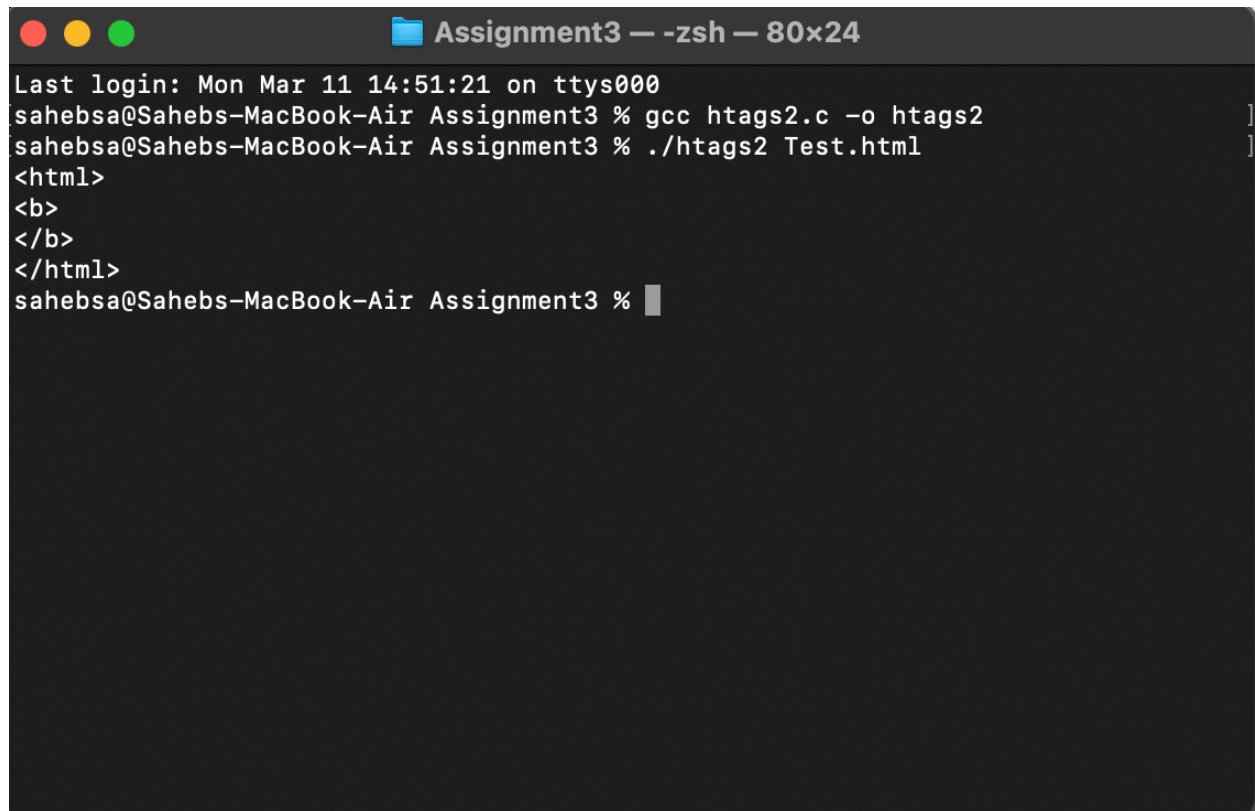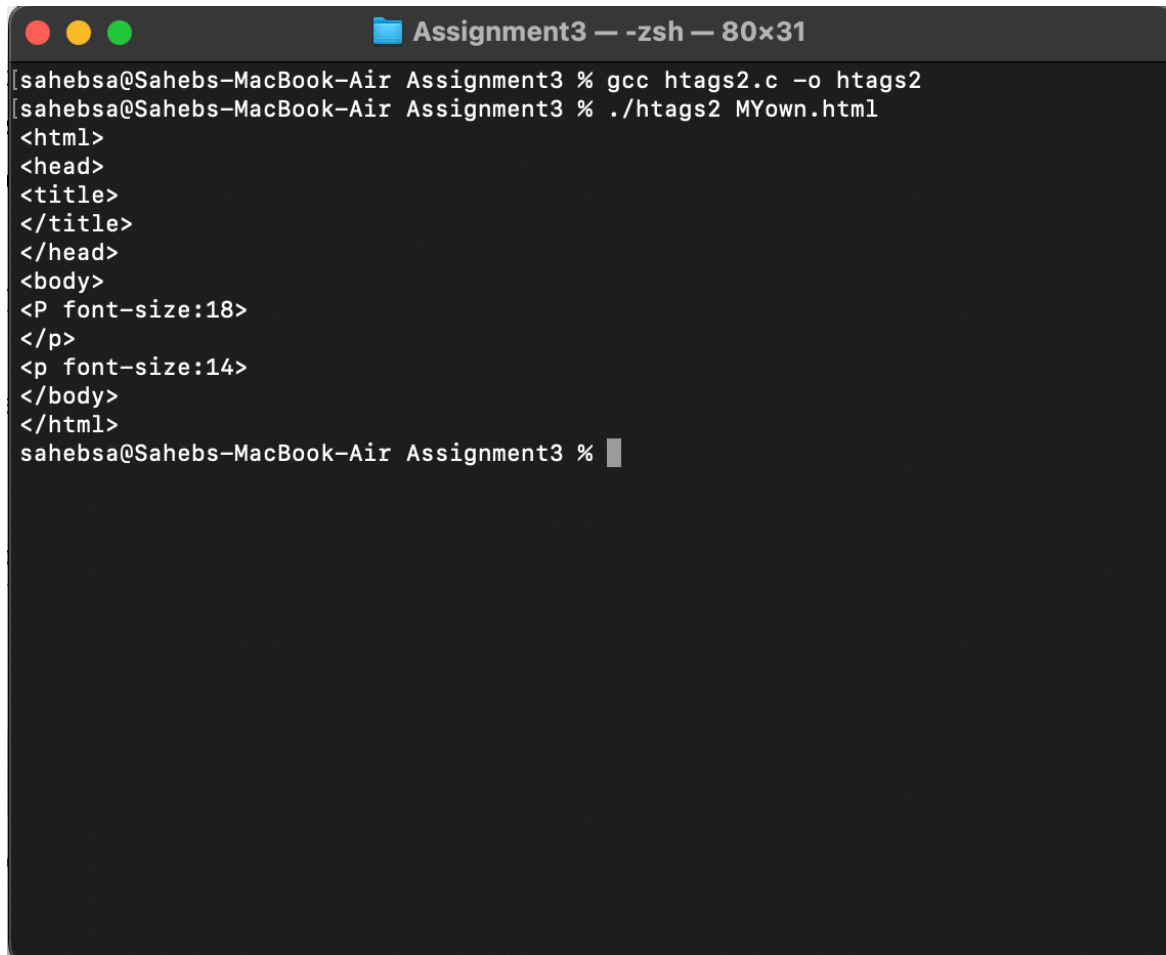
2

3)

```
Last login: Mon Mar 11 14:51:21 on ttys000
[sahebsa@Sahebs-MacBook-Air Assignment3 % gcc htags2.c -o htags2
[sahebsa@Sahebs-MacBook-Air Assignment3 % ./htags2 Test.html
<html>
<b>
</b>
</html>
sahebsa@Sahebs-MacBook-Air Assignment3 % 
```

3

Q4)

```
[sahebsa@Sahebs-MacBook-Air Assignment3 % gcc htags2.c -o htags2
[sahebsa@Sahebs-MacBook-Air Assignment3 % ./htags2 A3W2024.html
<html>
<head>
<meta http-equiv=Content-Type content="text/html; charset=windows-1252">
<meta name=Generator content="Microsoft Word 15 (filtered)">
<style>
</style>
</head>
<body lang=EN-CA link=blue vlink="#954F72" style='word-wrap:break-word'>
<div class=WordSection1>
<p class=MsoNormal>
<b>
</span>
</b>
</p>
<p class=MsoNormal style='text-align:justify'>
<u>
<span lang=EN-US style='font-family:"Times New Roman",serif'>
</u>
<a href="https://www.educba.com/types-of-tags-in-html/">
</a>
<span style='font-family:"Times New Roman",serif'>
<i>
</i>
<span lang=EN-US style='font-family:"Courier New"'>
<br>
</div>
</body>
</html>
sahebsa@Sahebs-MacBook-Air Assignment3 %
```

Q5)

```
[sahebsa@Sahebs-MacBook-Air Assignment3 % gcc htags2.c -o htags2
[sahebsa@Sahebs-MacBook-Air Assignment3 % ./htags2 MYown.html
<html>
<head>
<title>
</title>
</head>
<body>
<P font-size:18>
</p>
<p font-size:14>
</body>
</html>
sahebsa@Sahebs-MacBook-Air Assignment3 %
```