

```

#include <stdio.h>

#include <stdlib.h>

#include <string.h>


// implicit declaration of methods
void parseKeywords(int argc, char *argv[]);
void printKeywordOccurrences(int count);
void walkthroughFile(int argc);
void tokenizeLine(char *line, int argc);
void checkIfTokenIsAKeyword(int argc, char *token);


/**
 * @brief
 * structure to store the keywords and their occurrences
 */
struct keywordpair
{
    char *keyword;
    int count;
};


/**
 * @brief
 * declaration of the array of keywordpairs
 */
struct keywordpair *res;


/**
 * @brief

```

```

*

* @param argc number of command line arguments
* @param argv array of command line arguments
* @return int method return code
*/

int main(int argc, char *argv[])
{
    parseKeywords(argc, argv);

    // FILE *fp = readFile();
    // walkthroughFile(fp, argc);

    walkthroughFile(argc);

    printKeywordOccurrences(argc);

    // fclose(fp);
    if (res)
        free(res);

    return 0;
}

/**
* @brief
* parses command line input and stores it in an array of keywordpairs which is declared globally
*/
void parseKeywords(int argc, char *argv[])
{

```

```

// dynamic memory allocation based on the number of arguments passed
// argc-1 because the first argument is the name of the program
res = (struct keywordpair *)malloc((argc - 1) * sizeof(struct keywordpair));
int i;
for (i = 0; i < argc - 1; ++i)
{
    (res + i)->keyword = argv[i + 1];
    // initialize the count of each keyword to 0
    (res + i)->count = 0;
}
}

/**
 * @brief
 *
 * @param count keywords count
 */
void printKeywordOccurences(int count)
{
    printf("Displaying Information:\n");
    printf("Keyword\tOccurences\n");
    int i;
    for (i = 0; i < count - 1; ++i)
    {
        printf("%s\t%d\n", (res + i)->keyword, (res + i)->count);
    }
}

```

```

// FILE *readFile()

// {
// // FILE *fp = fopen("tintTale.txt", "r");
// if (fp == NULL)
//     exit(EXIT_FAILURE);
// return fp;
// }

/**
 * @brief
 *
 * @param argc arguments count
 * This will read the file(passed from command line via stdin) line by line and tokenize each
 * line and check if the token is a keyword
 *
 * at the end, it will free the memory allocated for the char pointer [line]
 */
void walkthroughFile(int argc)
{
    char *line = NULL;

    size_t len = 0;
    ssize_t read;
    long i = 0;

    while ((read = getline(&line, &len, stdin)) != -1)
    {
        tokenizeLine(line, argc);
    }
}

```

```

    if (line)
        free(line);
}

/**
 * @brief
 *
 * @param line char pointer to the line read from the file
 * @param argc arguments count
 *
 * This will tokenize the line and calls checkIfTokenIsAKeyword method
 *
 * stores the tokenized words in an array of char pointers
 * at the end, it will free the memory allocated for the char pointer [inputLine]
 */
void tokenizeLine(char *line, int argc)
{
    char *inputFile[2000];
    int i = 0;
    char *token = strtok(line, " ");
    while (token != NULL)
    {
        int len = strlen(token);
        inputFile[i] = malloc(sizeof(char) * len);
        strcpy(inputFile[i], token);
        i++;

        checkIfTokenIsAKeyword(argc, token);
    }
}

```

```

    token = strtok(NULL, " ");
}

int l;
for (l = 0; l < i; l++)
{
    free(inputFile[l]);
}
}

/**
 * @brief
 *
 * @param argc arguments count
 * @param token tokenized word
 *
 * check if the token is a keyword
 * if keyword is found, it will increment the count of the keyword
 *
 */
void checkIfTokenIsAKeyword(int argc, char *token)
{
    int i;
    for (i = 0; i < argc - 1; i++)
    {
        char *right = ((res + i)->keyword);
        int result = strcmp(token, right);
        if (result == 0)
        {
            (res + i)->count = (res + i)->count + 1;

```

}

}

}