1- Create a program to read and count the number of characters in the file "message.txt" and print the count.

قم بإنشاء برنامج لقراءة وحساب عدد الأحرف في الملف "message.txt" وطباعة العدد.

Input

message.txt

```
1  Hello world
```

Output

```
Number of characters: 13
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("message.txt", "r");
    char character;
    int count = 0;

    while (fscanf(file, "%c", &character) != EOF) {
        count++;
    }

    printf("Number of characters: %d\n", count);

    return 0;
}
```

2- Develop a program to read and display the contents of the file "numbers.txt" which contains numbers separated by spaces:

تطوير برنامج لقراءة وعرض محتويات الملف "numbers.txt" الذي يحتوي على أرقام مفصولة بمسافات:

Input

numbers.txt

```
1   25 10 7 15 30
```

Output

```
25 10 7 15 30
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("numbers.txt", "r");
    int number;

    while (fscanf(file, "%d", &number) != EOF) {
        printf("%d ", number);
    }

    return 0;
}
```

3- Write a program to find and print the sum of numbers stored in the file "data.txt," where each line contains a single integer:

اكتب برنامجًا للعثور على مجموع الأرقام المخزنة في الملف "data.txt" وطباعته، حيث يحتوي كل سطر على عدد صحيح واحد:

Input

data.txt

```
1   25
2   10
3   7
4   15
5   30
```

Output

```
Sum of numbers: 87
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("data.txt", "r");
    int number, sum = 0;

    while (fscanf(file, "%d", &number) != EOF) {
        sum += number;
    }

    printf("Sum of numbers: %d\n", sum);

    return 0;
}
```

4- Develop a program to read and print the first word from each line of the file "sentences.txt"

تطوير برنامج لقراءة وطباعة الكلمة الأولى من كل سطر من الملف "sentences.txt"

Input

sentences.txt

```
1  The quick brown fox
2  jumps over the lazy dog.
```

Output

```
The
quick
brown
fox
jumps
over
the
lazy
dog.
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("sentences.txt", "r");
    char word[20];

    while (fscanf(file, "%s", word) != EOF) {
        printf("%s\n", word);
    }

    return 0;
}
```

5- Create a program to read and find the average of numbers stored in the file "grades.txt," where each line contains a student's grade:

قم بإنشاء برنامج لقراءة والعثور على متوسط الأرقام المخزنة في الملف "grades.txt"، حيث يحتوي كل سطر على درجة الطالب:

Input

grades.txt

```
1   85
2   92
3   78
4   94
```

Output

```
Average grade: 87.25
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("grades.txt", "r");
    int grade, count = 0, sum = 0;

    while (fscanf(file, "%d", &grade) != EOF) {
        sum += grade;
        count++;
    }

    if (count > 0) {
        double average = (double)sum / count;
        printf("Average grade: %.2lf\n", average);
    }

    return 0;
}
```

6- Create a program to find and print the maximum number from the file "numbers.txt" where each line contains an integer:

قم بإنشاء برنامج للعثور على الرقم الأكبر وطباعته من الملف "numbers.txt" حيث يحتوي كل سطر على عدد صحيح:

Input

numbers.txt

```
1   48
2   32
3   75
4   91
```

Output

```
Maximum number: 91
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("numbers.txt", "r");
    int number, max = 0;

    while (fscanf(file, "%d", &number) != EOF) {
        if (number > max) {
            max = number;
        }
    }

    printf("Maximum number: %d\n", max);

    return 0;
}
```

7- Create a program to read integers from the file "data.txt" and print the sum of positive integers and the product of negative integers.

قم بإنشاء برنامج لقراءة الأعداد الصحيحة من الملف "data.txt" وطباعة مجموع الأعداد الصحيحة الموجبة وحاصل ضرب الأعداد الصحيحة السالبة.

Input

data.txt

```
1
-2
-3
2
-4
```

Output

```
Sum of positives: 3
Product of negatives: -24
```

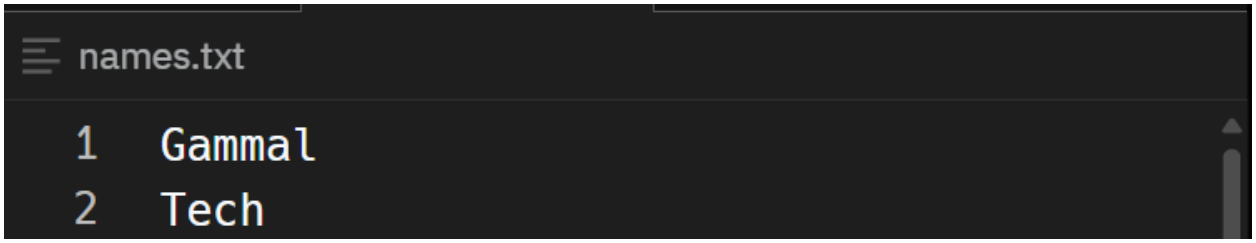
Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("data.txt", "r");
    int number, sumPositives = 0, productNegatives = 1;

    while (fscanf(file, "%d", &number) != EOF) {
        if (number > 0) {
            sumPositives += number;
        } else if (number < 0) {
            productNegatives *= number;
        }
    }

    printf("Sum of positives: %d\n", sumPositives);
    printf("Product of negatives: %d\n", productNegatives);

    return 0;
}
```

8- Develop a program to read a list of names from the file "names.txt" and print them in reverse order.

تطوير برنامج لقراءة قائمة الأسماء من الملف "names.txt" وطباعتها بترتيب عكسي.

Input



Output

```
Names in reverse order:
Tech
Gammal
```

Solution

```c
// www.gammal.tech

#include<stdio.h>

int main() {
    FILE *file = fopen("names.txt", "r");
    char name[50][100];
    int count = 0;

    while (fscanf(file, "%s", name[count]) != EOF) {
        count++;
    }

    printf("Names in reverse order:\n");
    for (int i = count - 1; i >= 0; i--) {
        printf("%s\n", name[i]);
    }

    return 0;
}
```

9- Create a program to read a series of floating-point numbers from "floatdata.txt" and calculate their average.

قم بإنشاء برنامج لقراءة سلسلة من أرقام floating-point من "floatdata.txt" و حساب متوسطها.

Input

floatdata.txt

```
1   1.6
2   1.5
3   6.6
```

Output

```
Average: 3.23
```

Solution

```c
// www.gammal.tech
#include<stdio.h>

int main() {
    FILE *file = fopen("floatdata.txt", "r");
    double sum = 0, num;
    int count = 0;

    while (fscanf(file, "%lf", &num) != EOF) {
        sum += num;
        count++;
    }

    if (count > 0) {
        double average = sum / count;
        printf("Average: %.2f\n", average);
    } else {
        printf("No data found in the file.\n");
    }

    return 0;
}
```

10- Write a program to find and print the longest word from the file "input.txt":

اكتب برنامجًا للعثور على أطول كلمة من الملف "input.txt" وطباعتها:

Input

input.txt

```
1  This program reads a file and finds the
   longest word in it.
```

Output

```
Longest word: program
```

Solution

```c
// www.gammal.tech
#include<stdio.h>
#include<string.h>

int main() {
    FILE *file = fopen("input.txt", "r");
    char word[100], longestWord[100];

    while (fscanf(file, "%s", word) != EOF) {
        if (strlen(word) > strlen(longestWord)) {
            strcpy(longestWord, word);
        }
    }

    printf("Longest word: %s\n", longestWord);

    return 0;
}
```
