

1- Write a program to count the number of characters in a given brand.

اكتب برنامجًا لحساب عدد الأحرف في علامة تجارية معينة.

Input

```
Enter a brand: BMW
```

Output

```
Number of characters in BMW: 3
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brand[100];

    printf("Enter a brand: ");
    scanf("%s", brand);

    int length = strlen(brand);

    printf("Number of characters in %s: %d\n", brand, length);

    return 0;
}
```

2- Write a program to concatenate two given brands.

اكتب برنامجًا لربط علامتين تجاريتين محددتين.

Input

```
Enter the first brand: Ford
Enter the second brand: BMW
```

Output

```
Concatenated brand: FordBMW
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brand1[100], brand2[100];

    printf("Enter the first brand: ");
    scanf("%s", brand1);

    printf("Enter the second brand: ");
    scanf("%s", brand2);

    strcat(brand1, brand2);

    printf("Concatenated brand: %s\n", brand1);

    return 0;
}
```

3- Write a program to display a menu for brand options.

اكتب برنامجًا لعرض قائمة خيارات العلامة التجارية.

Input

```
Brand Options:
1. Mercedes
2. BMW
3. Mazda
Enter your choice (1-3): 1
```

Output

```
You selected Mercedes.
```

Solution

```
// www.gammal.tech

#include <stdio.h>

int main() {
    int choice;

    printf("Brand Options:\n");
    printf("1. Mercedes\n");
    printf("2. BMW\n");
    printf("3. Mazda\n");

    printf("Enter your choice (1-3): ");
    scanf("%d", &choice);

    switch (choice) {
        case 1:
            printf("You selected Mercedes.\n");
            break;
        case 2:
            printf("You selected BMW.\n");
            break;
        case 3:
            printf("You selected Mazda.\n");
            break;
        default:
            printf("Invalid choice.\n");
    }

    return 0;
}
```

4- Write a program to count the occurrences of a specific character in a given array of strings.

اكتب برنامجًا لحساب عدد مرات ظهور حرف معين في مصفوفة معينة من السلاسل النصية.

Input

```
Enter the character to count: e
```

Output

```
Occurrences of 'e': 9
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brands[20][100] = {"Mercedes", "BMW", "Mazda", "Mercedes", "BMW", "Mercedes"};
    char searchChar;
    int count = 0;

    printf("Enter the character to count: ");
    scanf(" %c", &searchChar);

    for (int i = 0; i < 6; i++) {
        for (int j = 0; brands[i][j]; j++) {
            if (brands[i][j] == searchChar) {
                count++;
            }
        }
    }

    printf("Occurrences of '%c': %d\n", searchChar, count);
    return 0;
}
```

5- Write a program to concatenate two strings from the given array and display the result.

اكتب برنامجًا لربط سلسلتين من array المحددة وعرض النتيجة.

Input

```
Enter the indices to concatenate (space-separated): 1 3
```

Output

```
Concatenated string: BMWMercedes
```

Solution

```

// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brands[20][100] = {"Mercedes", "BMW", "Mazda", "Mercedes", "BMW", "Mercedes"};
    int index1, index2;

    printf("Enter the indices to concatenate (space-separated): ");
    scanf("%d %d", &index1, &index2);

    strcat(brands[index1], brands[index2]);

    printf("Concatenated string: %s\n", brands[index1]);
    return 0;
}
```

6- Write a program to replace a specific character in all brands.

كتابة برنامج لاستبدال حرف معين في جميع العلامات التجارية.

Input

```
Enter the character to replace: e
```

Output

```
Brands after replacement:
M*rc*d*s
BMW
Mazda
M*rc*d*s
BMW
M*rc*d*s
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brands[20][100] = {"Mercedes", "BMW", "Mazda", "Mercedes", "BMW", "Mercedes"};
    char replaceChar;

    printf("Enter the character to replace: ");
    scanf(" %c", &replaceChar);

    for (int i = 0; i < 6; i++) {
        for (int j = 0; brands[i][j]; j++) {
            if (brands[i][j] == replaceChar) {
                brands[i][j] = '*';
            }
        }
    }

    printf("Brands after replacement:\n");
    for (int i = 0; i < 6; i++) {
        printf("%s\n", brands[i]);
    }

    return 0;
}
```

7- Write a program to display the length of each brand.

اكتب برنامج لعرض طول كل علامة تجارية.

Output

```
Brand lengths:
Length of Mercedes: 8
Length of BMW: 3
Length of Mazda: 5
Length of Mercedes: 8
Length of BMW: 3
Length of Mercedes: 8
```

Solution

```
// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char brands[20][100] = {"Mercedes", "BMW", "Mazda", "Mercedes", "BMW", "Mercedes"};

    printf("Brand lengths:\n");
    for (int i = 0; i < 6; i++) {
        printf("Length of %s: %lu\n", brands[i], strlen(brands[i]));
    }

    return 0;
}
```

8- Write a program to display the ASCII values of characters in a given brand.

اكتب برنامجًا لعرض قيم ASCII للأحرف في علامة تجارية معينة.

Input

Enter a brand: BMW

Output

```
ASCII values of characters in BMW:
B: 66
M: 77
W: 87
```

Solution

```
// www.gammal.tech

#include <stdio.h>

int main() {
    char brand[100];

    printf("Enter a brand: ");
    scanf("%s", brand);

    printf("ASCII values of characters in %s:\n", brand);
    for (int i = 0; brand[i]; i++) {
        printf("%c: %d\n", brand[i], brand[i]);
    }

    return 0;
}
```

9- Write a program to replace all vowels in a given brand with '*'.

اكتب برنامجًا لاستبدال جميع حروف العلة في علامة تجارية معينة بـ '*'.

Input

```
Enter a brand: Mercedes
```

Output

```
Brand after replacing vowels: M*rc*d*s
```

Solution

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

int main() {
    char brand[100];

    printf("Enter a brand: ");
    scanf("%s", brand);

    for (int i = 0; brand[i]; i++) {
        switch (brand[i]) {
            case 'a':
            case 'e':
            case 'i':
            case 'o':
            case 'u':
                brand[i] = '*';
                break;
        }
    }

    printf("Brand after replacing vowels: %s\n", brand);

    return 0;
}
```


10- Write a program that allows users to input a car brand name and counts the occurrences of that brand in a predefined list of car brands. The program should be case-insensitive and convert both user input and stored brand names to lowercase. Use the provided code as a reference.

اكتب برنامجًا يسمح للمستخدمين بإدخال اسم العلامة التجارية للسيارة ويحسب تكرارات تلك العلامة التجارية في قائمة محددة مسبقًا لماركات السيارات. يجب أن يكون البرنامج حساسًا لحالة الحروف ويقوم بتحويل كل من الإدخالات المستخدم وأسماء العلامات التجارية المخزنة إلى أحرف صغيرة.

Input

```
Enter the brand: merCedEs
```

Output

```
num: 3
```

Solution

```

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// www.gammal.tech

#include <stdio.h>
#include <string.h>

int main() {
    char cars[20][100] = {"Mercedes", "BMW", "Mazda", "Mercedes", "BMW", "Mercedes"};
    char input[20];
    int i, j, count = 0;

    printf("Enter the brand: ");
    scanf("%s", input);

    // Convert input to lowercase
    for (i = 0; input[i]; i++) {
        if (input[i] >= 'A' && input[i] <= 'Z') {
            input[i] = input[i] + 32;
        }
    }

    // Convert array elements to lowercase
    for (i = 0; i < 6; i++) {
        for (j = 0; cars[i][j]; j++) {
            if (cars[i][j] >= 'A' && cars[i][j] <= 'Z') {
                cars[i][j] = cars[i][j] + 32;
            }
        }
    }

    // Count occurrences
    for (i = 0; i < 6; i++) {
        count += strcmp(input, cars[i]) == 0;
    }

    printf("num: %d", count);

    return 0;
}
```
