1- Write a program to check if a given number is even or odd using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان رقم معين زوجيًا أم فرديًا باستخدام boolean logic.

Input

```
Enter a number: 5
```

Output

```
5 is odd.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isEven = (num % 2 == 0);

    if (isEven) {
        printf("%d is even.\n", num);
    } else {
        printf("%d is odd.\n", num);
    }

    return 0;
}
```

2- Write a program to check if a given number is positive or negative using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان الرقم موجبًا أم سالبًا باستخدام boolean logic.

Input

```
Enter a number: 6
```

Output

```
6 is positive.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isPositive = (num > 0);

    if (isPositive) {
        printf("%d is positive.\n", num);
    } else {
        printf("%d is negative.\n", num);
    }

    return 0;
}
```

3- Write a program to check if a given number is equal to 10 using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان رقم معين يساوي 10 باستخدام boolean logic.

Input

```
Enter a number: 10
```

Output

```
10 is equal to 10.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isEqualTo10 = (num == 10);

    if (isEqualTo10) {
        printf("%d is equal to 10.\n", num);
    } else {
        printf("%d is not equal to 10.\n", num);
    }

    return 0;
}
```

4- Write a program to check if two given numbers are equal using boolean logic.

اكتب برنامجًا للتحقق من تساوي رقمين محددين باستخدام boolean logic.

Input

```
Enter two numbers separated by a space: 5 7
```

Output

```
5 and 7 are not equal.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num1, num2;
    printf("Enter two numbers separated by a space: ");
    scanf("%d %d", &num1, &num2);

    bool areEqual = (num1 == num2);

    if (areEqual) {
        printf("%d and %d are equal.\n", num1, num2);
    } else {
        printf("%d and %d are not equal.\n", num1, num2);
    }

    return 0;
}
```

5- Write a program to check if a given number is greater than 100 using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان الرقم أكبر من 100 باستخدام boolean logic.

Input

```
Enter a number: 150
```

Output

```
150 is greater than 100.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isGreaterThan100 = (num > 100);

    if (isGreaterThan100) {
        printf("%d is greater than 100.\n", num);
    } else {
        printf("%d is not greater than 100.\n", num);
    }

    return 0;
}
```

6- Write a program to check if a given number is divisible by 5 using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان رقم معين يقبل القسمة على 5 باستخدام boolean logic.

Input

```
Enter a number: 15
```

Output

```
15 is divisible by 5.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isDivisibleBy5 = (num % 5 == 0);

    if (isDivisibleBy5) {
        printf("%d is divisible by 5.\n", num);
    } else {
        printf("%d is not divisible by 5.\n", num);
    }

    return 0;
}
```

7- Write a program to check if a given number is between 10 and 20 (inclusive) using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان رقم معين يقع بين 10 و20 (inclusive) باستخدام boolean logic.

Input

```
Enter a number: 17
```

Output

```
17 is between 10 and 20 (inclusive).
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isBetween10And20 = (num >= 10 && num <= 20);

    if (isBetween10And20) {
        printf("%d is between 10 and 20 (inclusive).\n", num);
    } else {
        printf("%d is not between 10 and 20 (inclusive).\n", num);
    }

    return 0;
}
```

8- Write a program to check if a given number is a multiple of both 3 and 5 using boolean logic.

اكتب برنامجًا للتحقق مما إذا كان الرقم المعطى هو أحد مضاعفات الرقمين 3 و5 باستخدام boolean logic.

Input

```
Enter a number: 15
```

Output

```
15 is a multiple of both 3 and 5.
```

Solution

```c
// www.gammal.tech

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

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    bool isMultipleOf3And5 = (num % 3 == 0 && num % 5 == 0);

    if (isMultipleOf3And5) {
        printf("%d is a multiple of both 3 and 5.\n", num);
    } else {
        printf("%d is not a multiple of both 3 and 5.\n", num);
    }

    return 0;
}
```

9- Write a program that initializes a boolean variable x with the value 5. Check if the value of x is equal to true and print "yes" if true, otherwise print "no".

اكتب برنامجًا يقوم بتهيئة المتغير المنطقي x بالقيمة 5. تحقق مما إذا كانت قيمة x تساوي true واطبع "yes" إذا كان صحيحًا، وإلا فاطبع "no".

Output

```
yes
```

Solution

```c
// www.gammal.tech

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

int main() {
    bool x = 5;

    if (x == true)
        printf("yes\n");
    else
        printf("no\n");

    return 0;
}
```

10- Write a program that initializes a boolean variable x with the value -50. Check if the value of x is equal to true and print "yes" if true, otherwise print "no".

اكتب برنامجًا يقوم بتهيئة المتغير المنطقي x بالقيمة -50. تحقق مما إذا كانت قيمة x تساوي صحيحًا واطبع "نعم" إذا كان صحيحًا، وإلا فاطبع "لا".

Output

```
yes
```

Solution

```c
// www.gammal.tech

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

int main() {
    bool x = -50;

    if (x == true)
        printf("yes\n");
    else
        printf("no\n");

    return 0;
}
```