Challenge: Fix the Code

This lesson explains the usage of logical expressions with the help of a coding challenge.

WE'LL COVER THE FOLLOWING

- “is between” operator
- Problem statement
- Sample input
- Sample output
- Challenge

“is between” operator

We’ve seen above that the `<` and the `>` operators are used to determine whether a value is less than or greater than another value, but there is no operator that answers the question “is between?” to determine whether a value is between two other values.

Let’s assume that a programmer has written the following code to determine whether a value is between 10 and 20. *Observe how the program throws a compilation error*:

```
import std.stdio;

void main() {
    int value = 15;

    writeln("Is between: ",10 < value < 20); // ← compilation ERROR
}
```

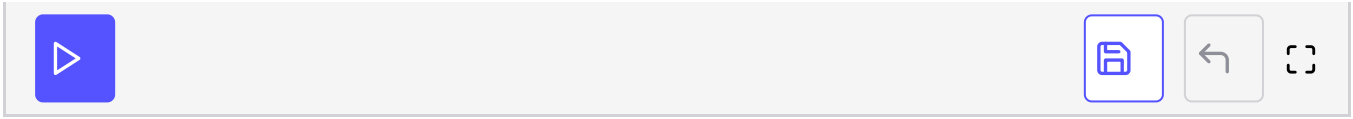
Compilation error while using logical expressions

Let's try using parentheses around the whole expression. Observe that it still cannot be compiled.

```
import std.stdio;

void main() {
    int value = 15;

    writeln("Is between: ",(10 < value < 20); // ← compilation ERROR
}
```



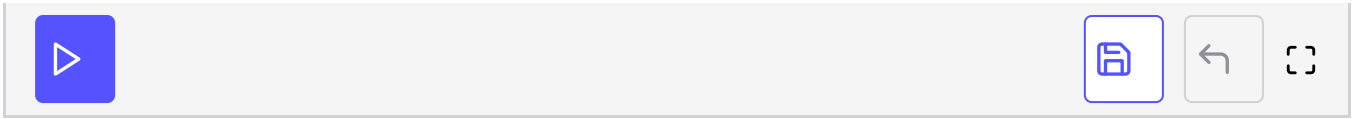
Compilation error while using logical expressions

While searching for a solution to this problem, the same programmer discovers that the following use of parentheses now enables the code to be compiled:

```
import std.stdio;

void main() {
    int value = 15;

    writeln("Is between: ",(10 < value) < 20); // ← compiles but WRONG\
}
```



Code compiled but has a bug

Observe that the program now works as expected and prints "true" as we have added the missing parenthesis.

Unfortunately, that output is misleading because the program has a bug. To see the result, we try replacing 15 with a number greater than the upper limit i.e, 20:

```
import std.stdio;

void main() {
    int value = 21;

    writeln("Is between: ",(10 < value) < 20);
}
```

Wrong output

The program displays the expected output “true”. However, this output could be misleading because it has a bug.

Remember that the type of a logical expression is `bool`. The reason that the above code compiles is due to the compiler converting the boolean expression to a 1 or 0 and then evaluating that against 20 to see if it is less.

Problem statement

Change the expression in the code widget below so that it prints the correct value.

Sample input

```
Value = 21;
```

Sample output

```
is between: false
```

Show Hint

Challenge

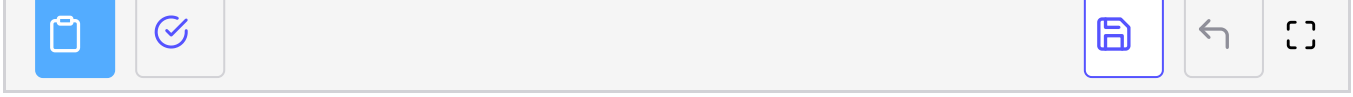
This problem is designed for you to practice, so try to solve it on your own first. If you get stuck, you can always refer to the explanation and solution provided in the next lesson. Good luck!

```
import std.stdio;

void isBetween() {
    int value = 21;

    write("Is between: ",(10 < value) < 20);

}
```



Fix this code

In the next lesson, you will find a solution to this problem.