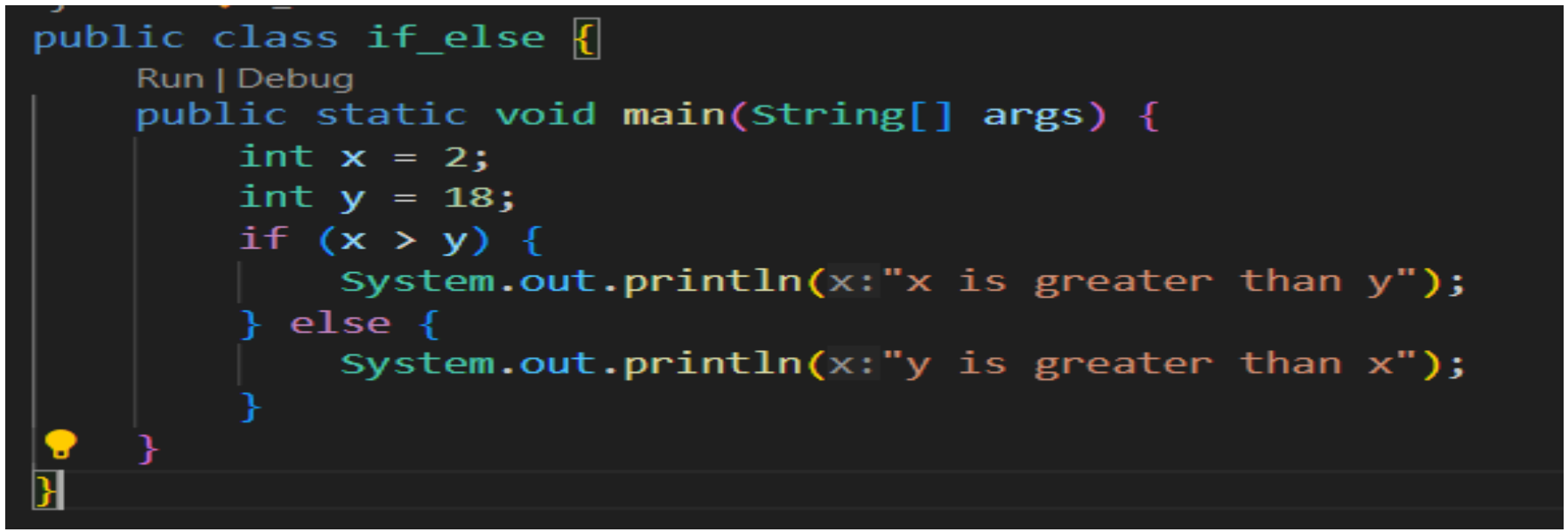
IF ELSE Statements

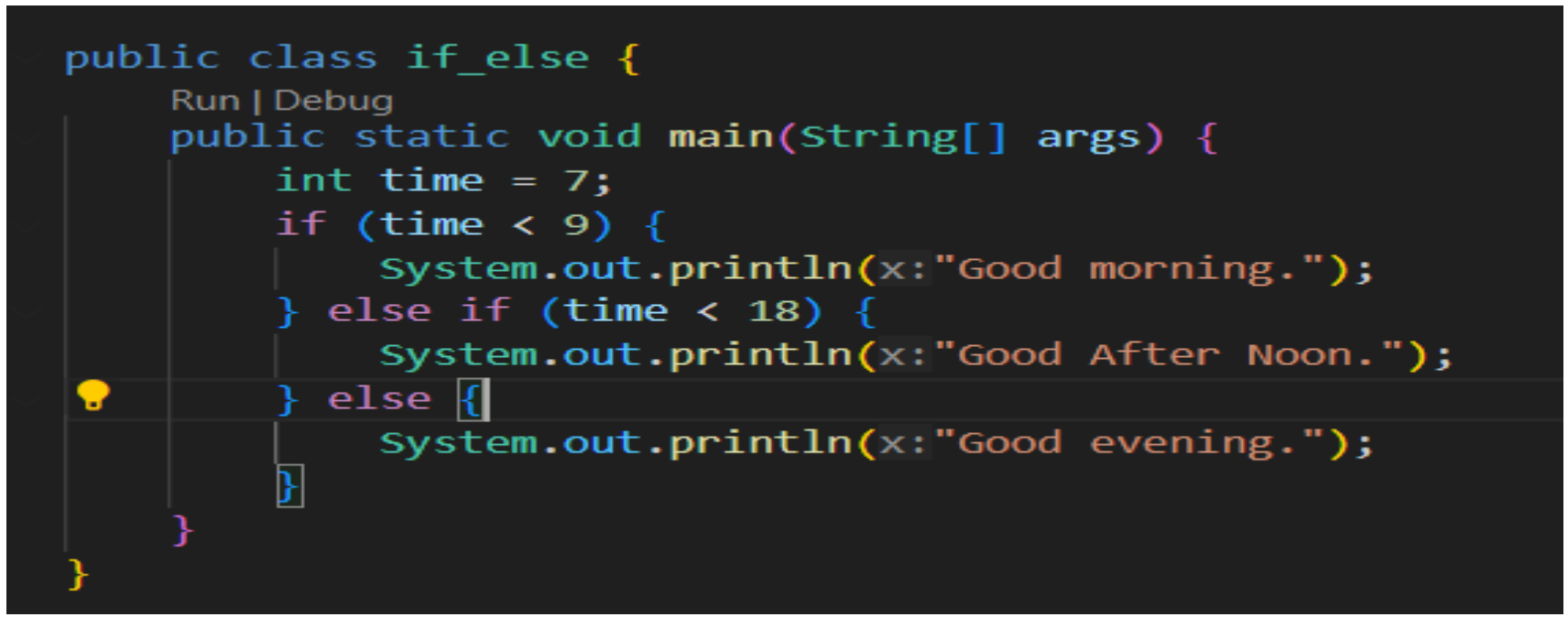
Logical conditions from mathematics

- Less than: a < b
- Less than or equal to: a <= b
- Greater than: a > b
- Greater than or equal to: a >= b
- Equal to a == b
- Not Equal to: a != b

Java has the following conditional statements:

- Use if to specify a block of code to be executed, if a specified condition is true
- Use else to specify a block of code to be executed, if the same condition is false
- Use else if to specify a new condition to test, if the first condition is false.


public class if_else {
Run | Debug
public static void main(String[] args) {
int x = 2;
int y = 18;
if (x > y) {
System.out.println(x:"x is greater than y");
} else {
System.out.println(x:"y is greater than x");
}
}
}


public class if_else {
Run | Debug
public static void main(String[] args) {
int time = 7;
if (time < 9) {
System.out.println(x:"Good morning.");
} else if (time < 18) {
System.out.println(x:"Good After Noon.");
} else {
System.out.println(x:"Good evening.");
}
}
}

Python has the following conditional statements:

- Use if to specify a block of code to be executed, if a specified condition is true
- Use else to specify a block of code to be executed, if the same condition is false
- Use **elif** to specify a new condition to test, if the first condition is false.

```
x = 2
y = 18

if x > y:
    print("x is greater than y")
else:
    print("y is greater than x")
```

```
time = 7

if time < 9:
     print("Good morning.")
elif time < 18:
     print("Good After Noon.")
else:
     print("Good evening.")
```

C++ has the following conditional statements:

- Use if to specify a block of code to be executed, if a specified condition is true
- Use else to specify a block of code to be executed, if the same condition is false
- Use else if to specify a new condition to test, if the first condition is false.

```cpp
#include <iostream>
using namespace std;

int main() {
    int x = 2;
    int y = 18;

    if (x > y) {
        cout << "x is greater than y" << endl;
    } else {
        cout << "y is greater than x" << endl;
    }

    return 0;
}
```

```cpp
int main() {
    int time = 7;

    if (time < 9) {
        cout << "Good morning." << endl;
    } else if (time < 18) {
        cout << "Good After Noon." << endl;
    } else {
        cout << "Good evening." << endl;
    }

    return 0;
}
```

Task.....

1. Write a program that takes an integer as input from the user and prints whether it is positive, negative, or zero.
2. Write a program that takes two integers as input from the user and prints which one is greater.
3. Write a program that takes a character as input from the user and prints whether it is a vowel or a consonant.
4. Write a program that takes a number as input from the user and prints whether it is even or odd.
5. Write a program that takes a year as input from the user and prints whether it is a leap year or not.
6. Write a program that takes a percentage as input from the user and prints the grade as A, B, C, D, or F based on the following criteria:
   - A: 90-100%
   - B: 80-89%
   - C: 70-79%
   - D: 60-69%
   - F: Below 60%