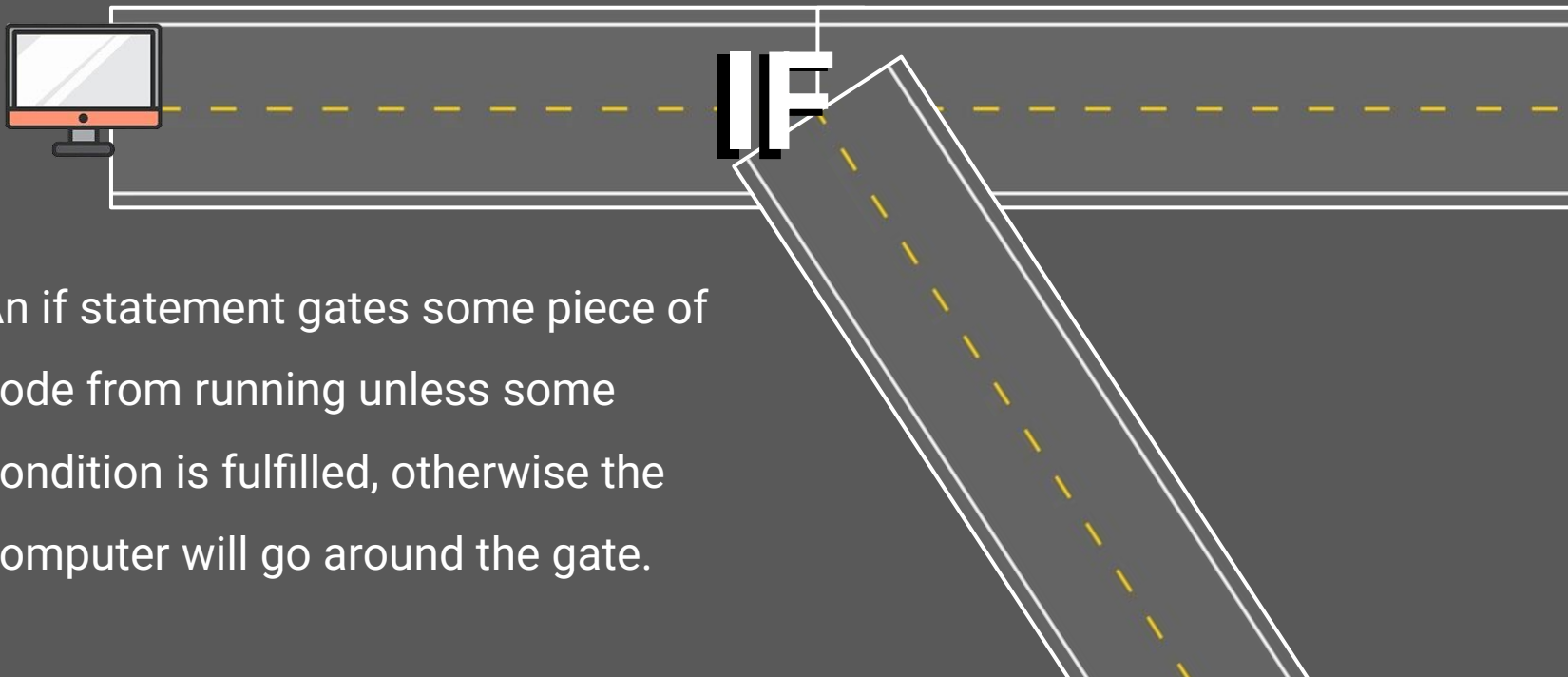# If Statements

# Conditional Gates

**IF**

An if statement gates some piece of code from running unless some condition is fulfilled, otherwise the computer will go around the gate.

# If Statement Syntax

```
1    num1 = 20
2
3    if 4 == 4:
4        num1 = 10
5
6    print(num1)
```

INDENT

Syntax

if [conditional statement] :

    [gated code]

INDENT

```
num1 = 20
```

```
if 4 == 4:
```

```
False
```

```
True
```

```
print(num1)
```

```
num1 = 10
```

```
print(num1)
```

# If Example 1

**Memory**

num1

~~20~~ 10

```
num1 = 20

if 4 == 4:
    num1 = 10
```

Pay attention

to the syntax

We have one variable that is assigned a value at the start. Under some condition it is then re-assigned a new value.

# If Example 2

**Memory**

num1

20

```python
num1 = 20

if 4 == 5:
    num1 = 10
```

Pay attention

to the syntax

We have one variable that is assigned a value at the start. Under some condition it is then re-assigned a new value.

# **Math Grader**

Using the code we had for the math calculations, we will add a new input prompting the user for their solution to the formula. Then we will use an if statement to check whether it is correct.

Code Techniques Used
- if statements
  - math conditional statements