

The IF-ELSE Life of the King's Turtle

IF-ELSE statements allow programs to branch off and execute one of two different blocks of code. The IF statement starts by evaluating a Boolean (true/false) clause. If this clause evaluates to true, then the block of code conditioned on the IF statement is executed. Otherwise, it is skipped. An ELSE clause can be included to provide an alternate block of code in the cases where the original Boolean clause evaluates to false.



FIDO, KING FREDRICK'S PRIZED pet turtle, lived a charmed life. He spent his days in the garden fountain, swimming and sleeping. He didn't have any magic powers, aside from the ability to amuse himself for an hour by staring at a pebble, but King Fredrick was quite fond of him. Due to his quiet nature and lack of razor-sharp teeth, Fido had always been Ann's favorite pet as well. The castle's servants took good care of him. They made sure that his fountain was always mostly clean—Fido did enjoy the occasional patch of slime.

Fido lived by a series of simple rules. In fact, since his brain was roughly the size of a pebble, they were incredibly simple IF-ELSE-style rules. These rules made up Fido's entire daily routine. For example, he had simple logic to determine when he ate:

IF he was hungry then he ate

This logic worked well for Fido, because he ate when he was

hungry. And, as a natural consequence, he didn't eat when he wasn't hungry. It was quite a good system.

For some aspects of life, the If statement could have two different actions depending on the condition. For example, when he was swimming:

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IF the fountain is on then play in the fountain
ELSE swim around the large rock
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Obviously, Fido enjoyed the fountain more than the rock.

Sometimes the decisions would be complex enough to require a series of chained IF-ELSE statements:

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IF it is sunny then sit in the grass
ELSE IF it is warm then go swimming
ELSE sleep
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On sunny days, Fido would happily sit in the grass. When it was warm but not sunny, Fido would swim in the fountain. And on those rare days when it was neither warm nor sunny, Fido would sleep. He hated those days.

The gardener responsible for taking care of Fido often joked that "All that turtle does is eat, sleep, and swim," which wasn't far from the truth. The logic that ruled Fido's life consisted of about fifty different actions contained within chained and nested IF-ELSE statements.

When Ann was a child, a visiting scholar had once spent a week studying Fido. With Ann's eager assistance, he recorded the entire logic for Fido's routine on a single scroll of parchment. If Fido had been intelligent enough to understand what that meant, he might have been offended. Instead, he sat in the grass—it was sunny.

Then, five days after the start of Ann's quest, the unthinkable happened. The gardener, worried that Fido would be bored without Ann's visits, added a second large rock to the garden. This

addition threw off Fido's IF-ELSE-based routine completely. It took almost a full week for Fido to determine a new routine. In the end, he added another IF-ELSE:

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IF he is closer to the right rock then swim around the  
right rock  
ELSE swim around the left rock
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Thus order was restored to his life.