Learn to Code:
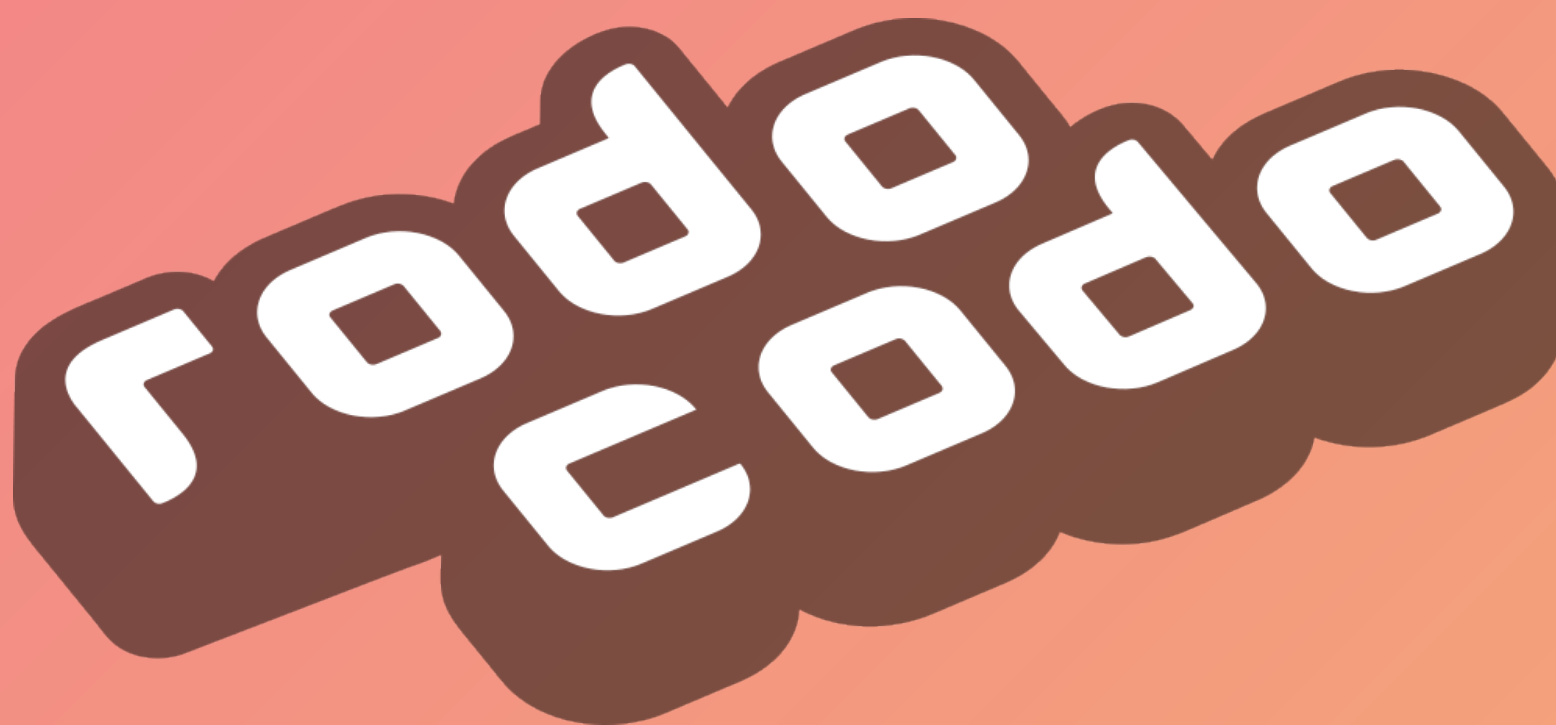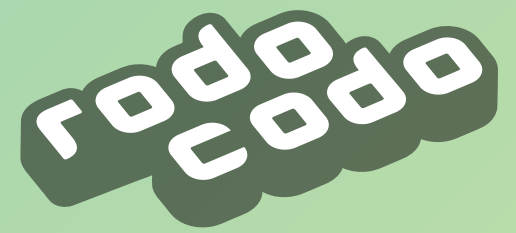# Posters

Learn to Code:
Algorithms

A recipe is a set of steps you follow in order to bake a birthday cake:

Weigh Flour → **Crack Eggs** → **Stir** → **Bake** → **Decorate**
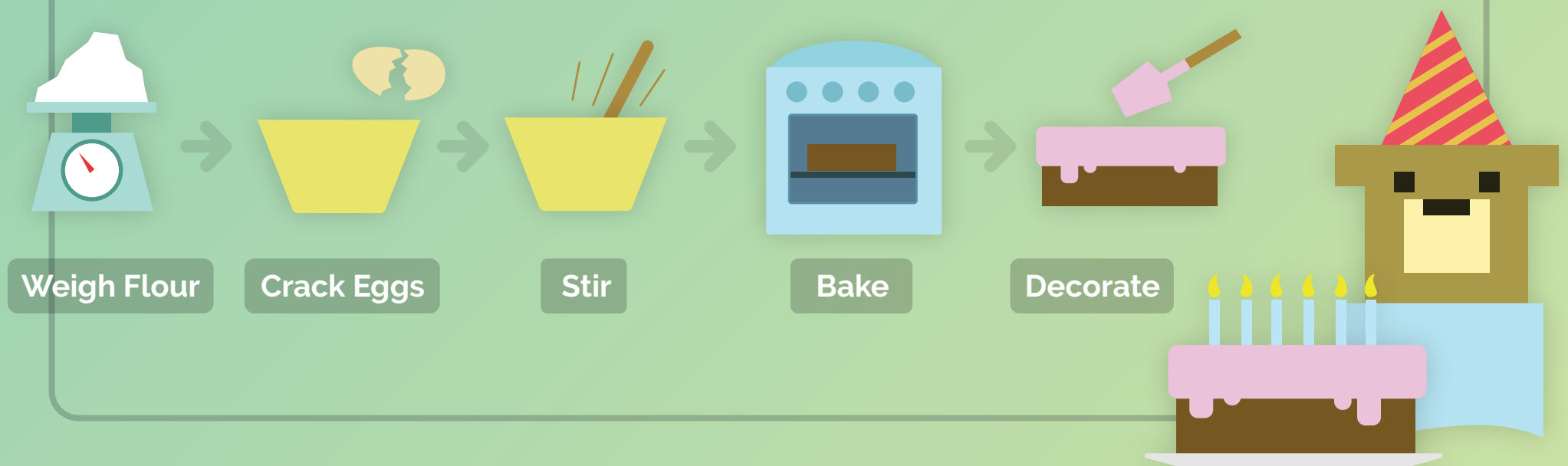
An algorithm is like a recipe: A set of steps followed by a computer to complete a specific task. It can be a simple step by step process:

Do This → **Then This** → **Then This** = ✔ **Success!**

A more interesting algorithm can make decisions based on conditions and can do something different based on the result:

Do This → **Then This** → **Has a Certain Condition Been Met?**
👍 → **Do This** = ✔ **Success!**
👎 → **Do This** = ✔ **Success!**

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Learn to Code:
Sequencing

To get dressed in the morning you have to put on each item of clothing in the correct order...
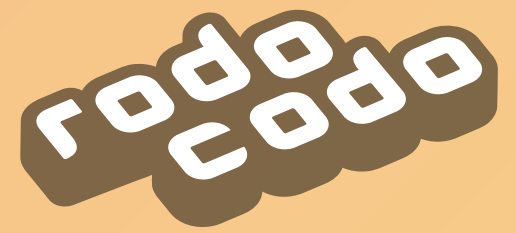
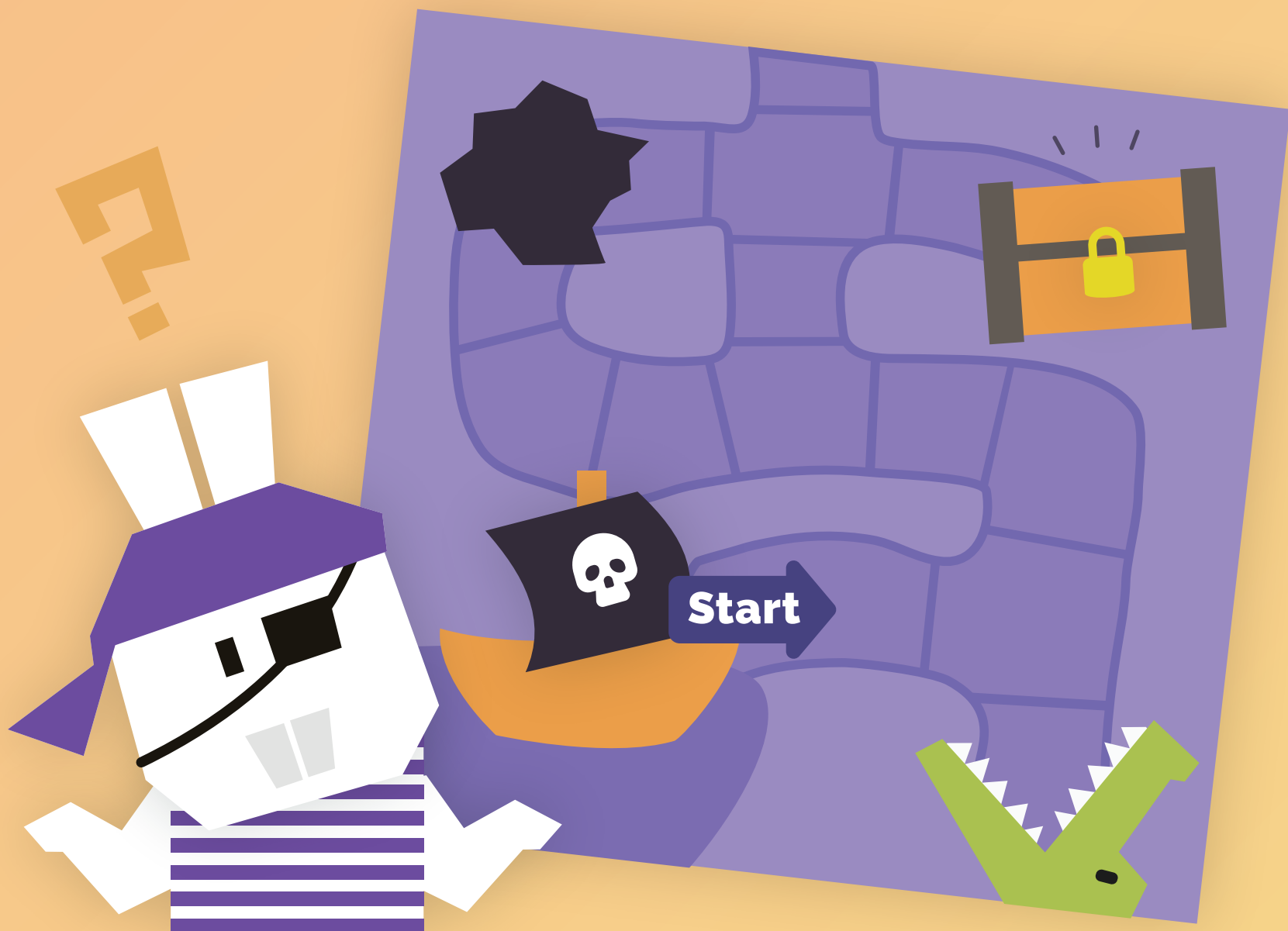If you get the order wrong the result won't be what you intended...

A sequence is a set of actions performed in the correct order to achieve something.
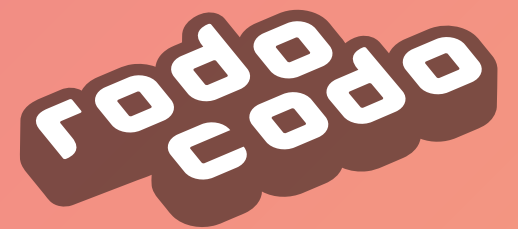
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Learn to Code: Debugging

The commands below should lead Pirate Rabbit safely from the ship to the treasure chest but they don't! See if you can find the mistake...

Mistakes in code that prevent it doing what it's supposed to do are called 'Bugs'. Finding and fixing them is called 'Debugging'.
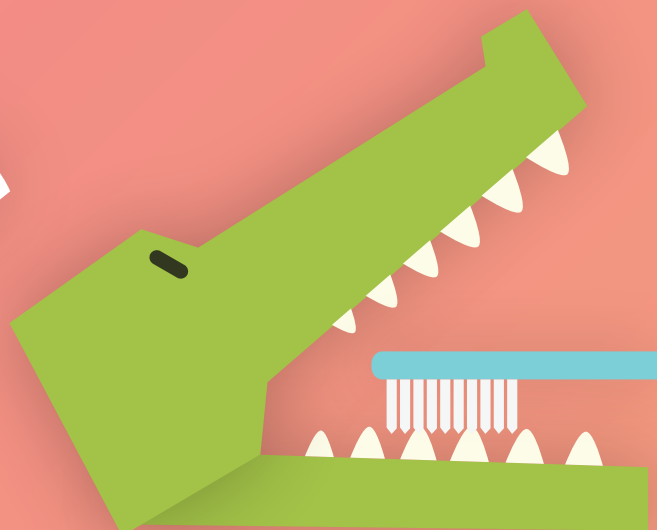
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Learn to Code:
Functions

rodo codo

To brush your teeth in the morning you perform three actions:

Squeeze → **Brush** → **Rinse**

A function is a named group of commands that complete a specific task:

Brush Your Teeth = **Squeeze** → **Brush** → **Rinse**

Once you've defined a function you can re-use it wherever you need to perform the actions it contains.

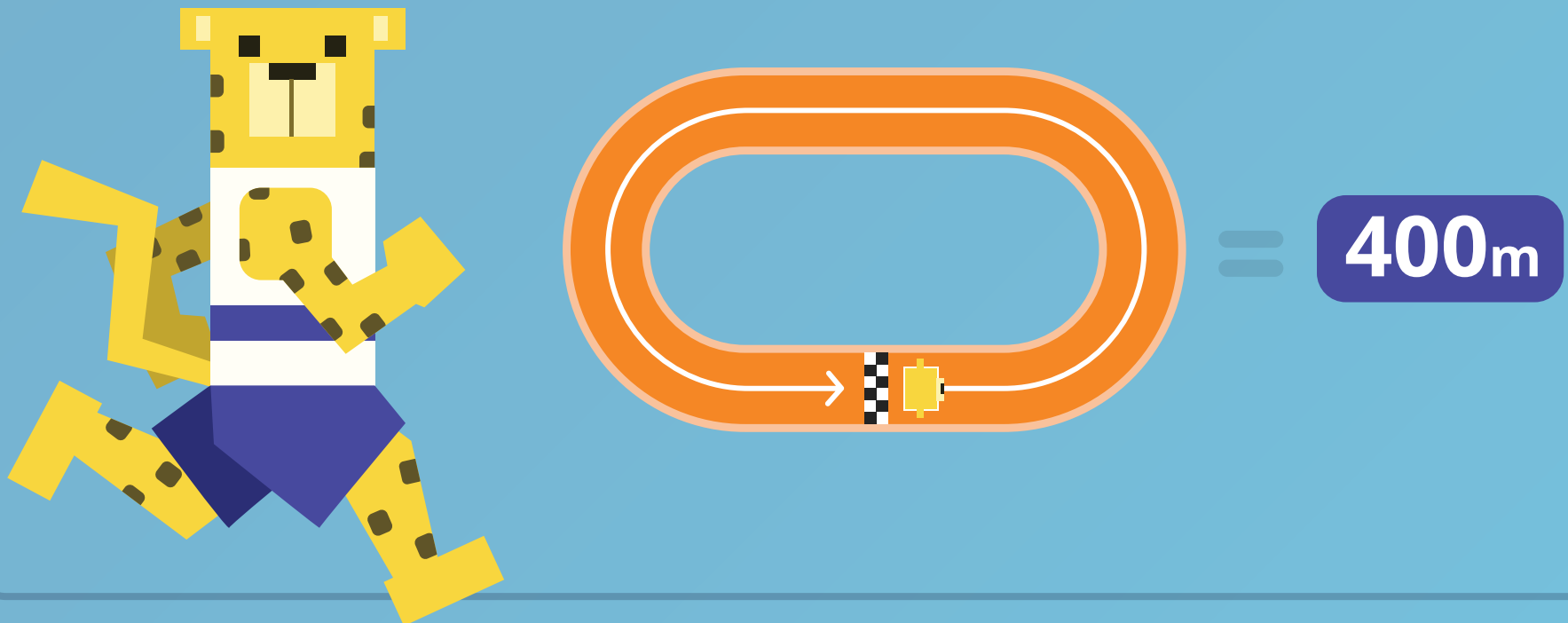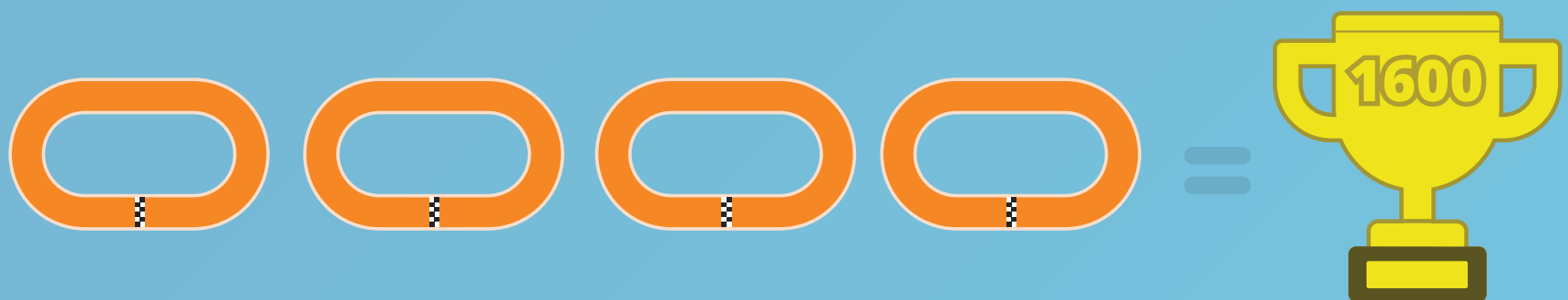| Monday	Tuesday	Wednesday
Brush Your Teeth	**Brush Your Teeth**	**Brush Your Teeth**

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Learn to Code: Counting Loops

Cheetah is running in the big 1600m race. One lap of the running track is 400m. How many laps will Cheetah run in the big race?

= **400m**

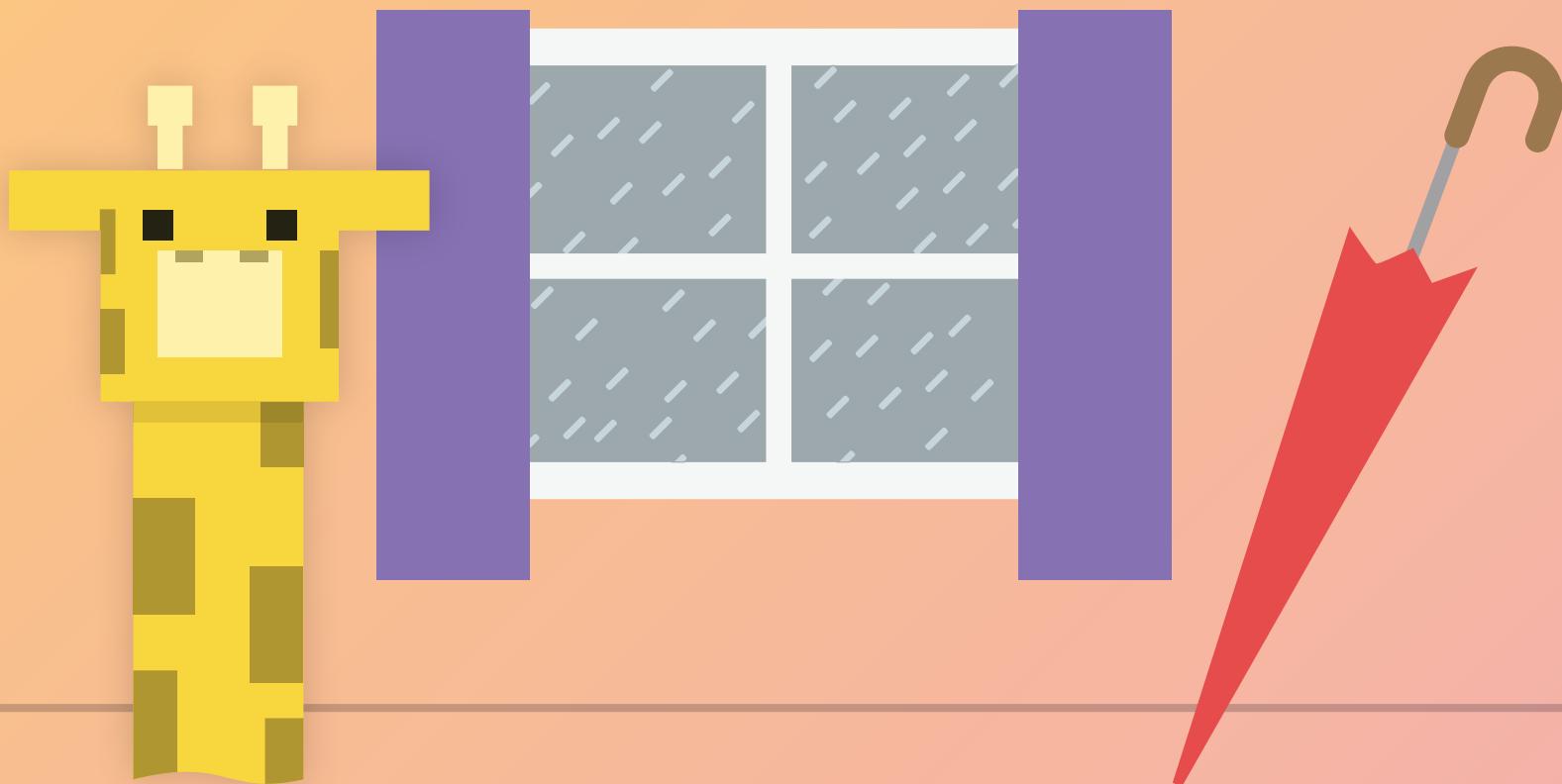Cheetah has to run 4 laps to complete the race - 400m x 4 = 1600m

= 1600

You can use a counting loop when you want to repeat something an exact number of times.

→ **4** = 1600
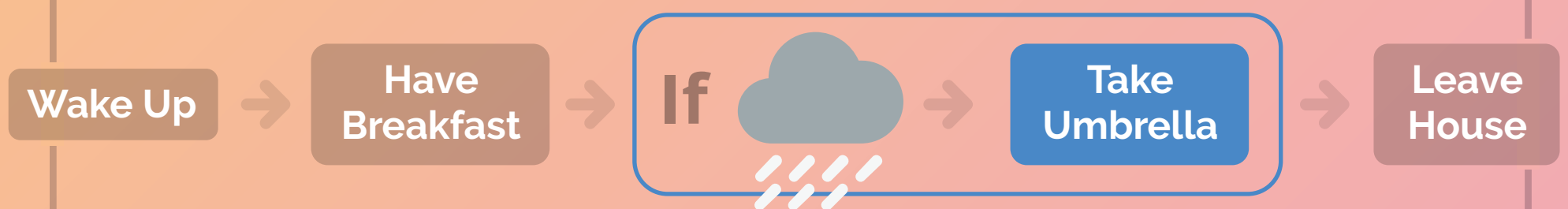
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Learn to Code: Selection

Before leaving home in the morning Giraffe peers out the window to check the weather. If it is raining then she takes her umbrella:

Giraffe's morning routine changes if it's raining outside:

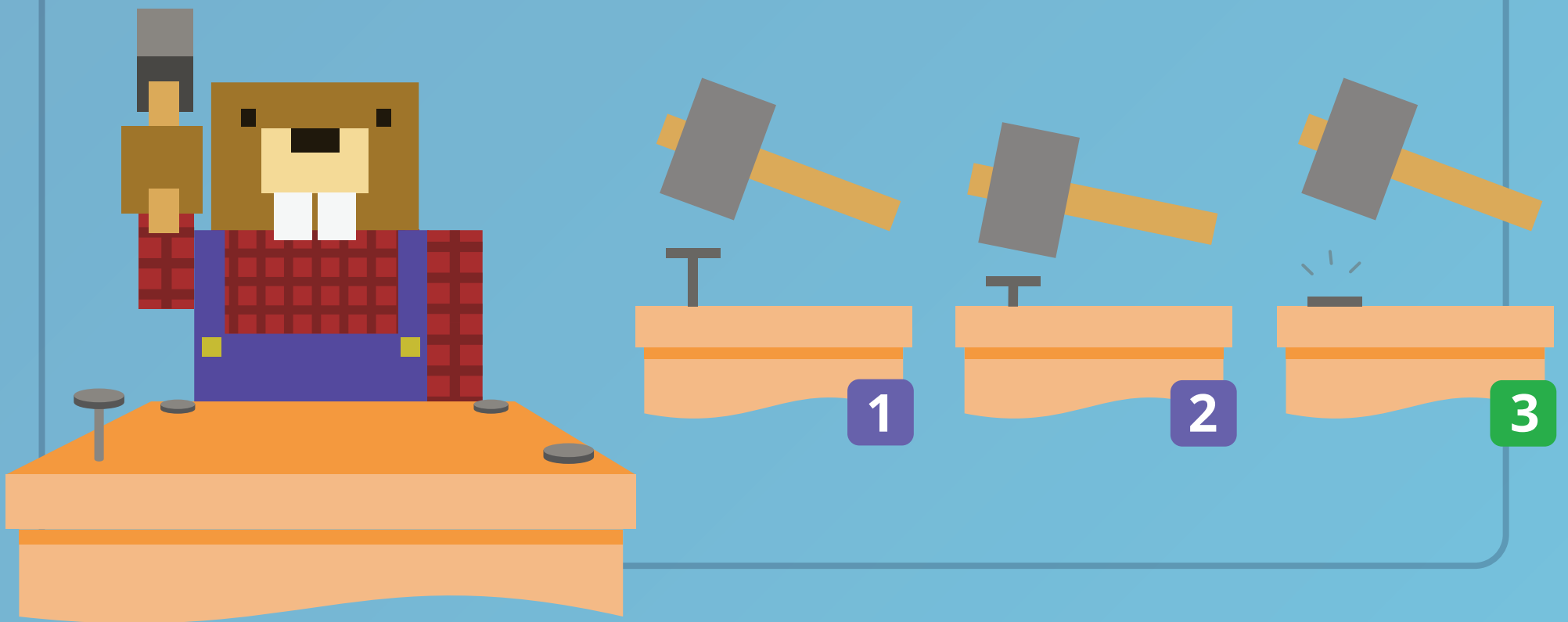Wake Up → Have Breakfast → If 🌧 → **Take Umbrella** → Leave House

Selection is how a computer program makes decisions. Those decisions are based on conditions. In this case the condition is whether or not it is raining.
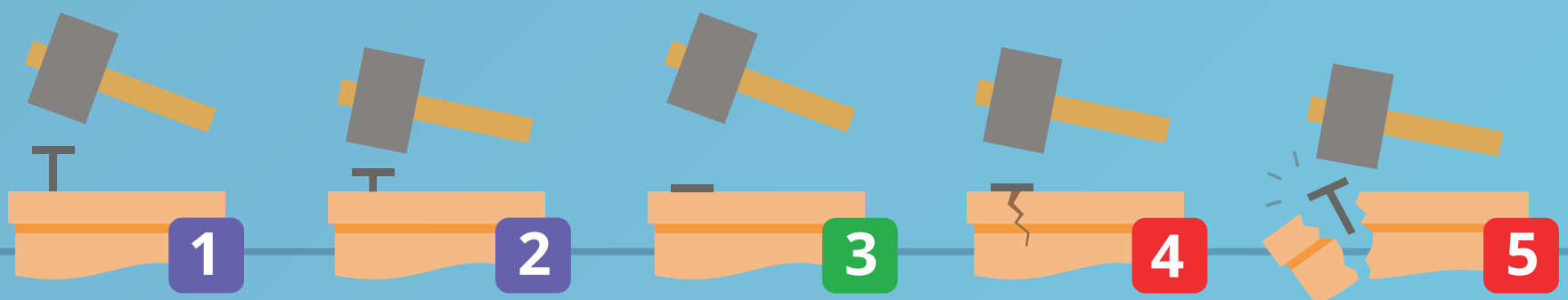
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Learn to Code:
Conditional Loops

While the nail below is still raised Beaver must hammer it until it is all the way in.

1 **2** **3**

If Beaver continued to hit the nail after it was in there could be trouble...
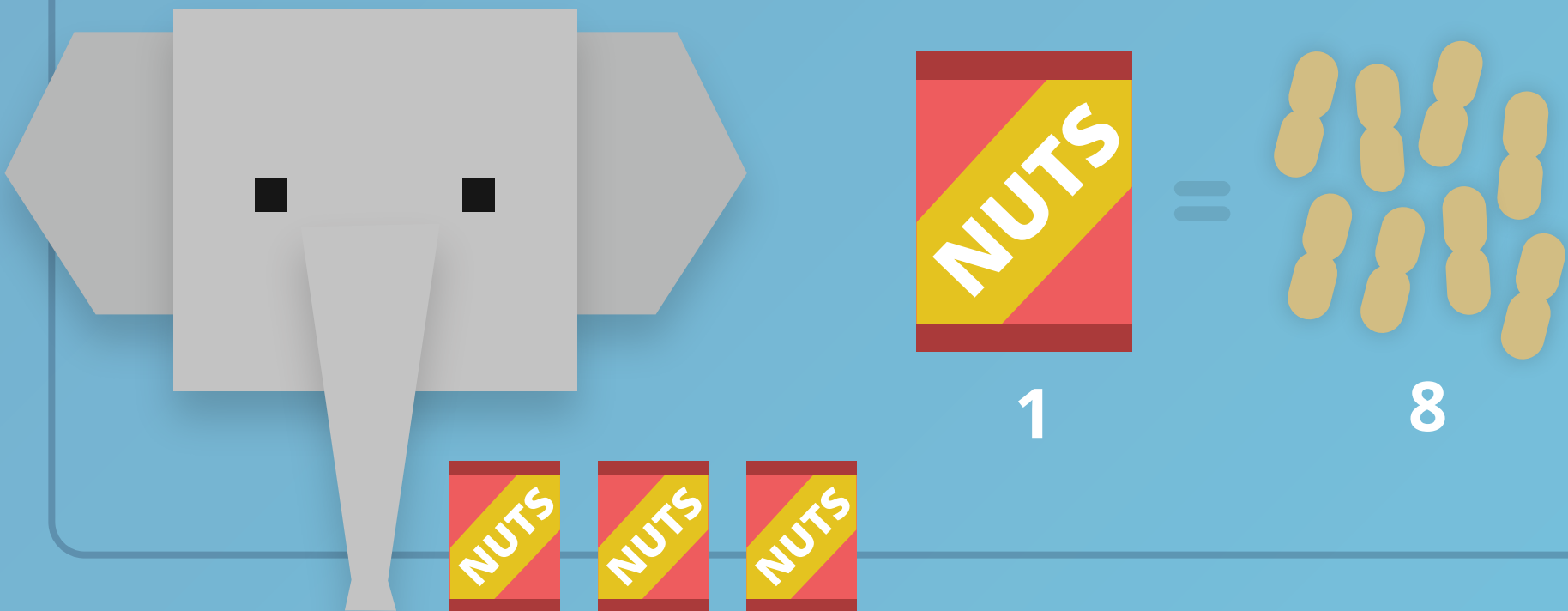
1 **2** **3** **4** **5**

Conditional Loops repeat until a certain condition is met. Here the condition is until the nail is in. So for Beaver's nail problem our loop is:

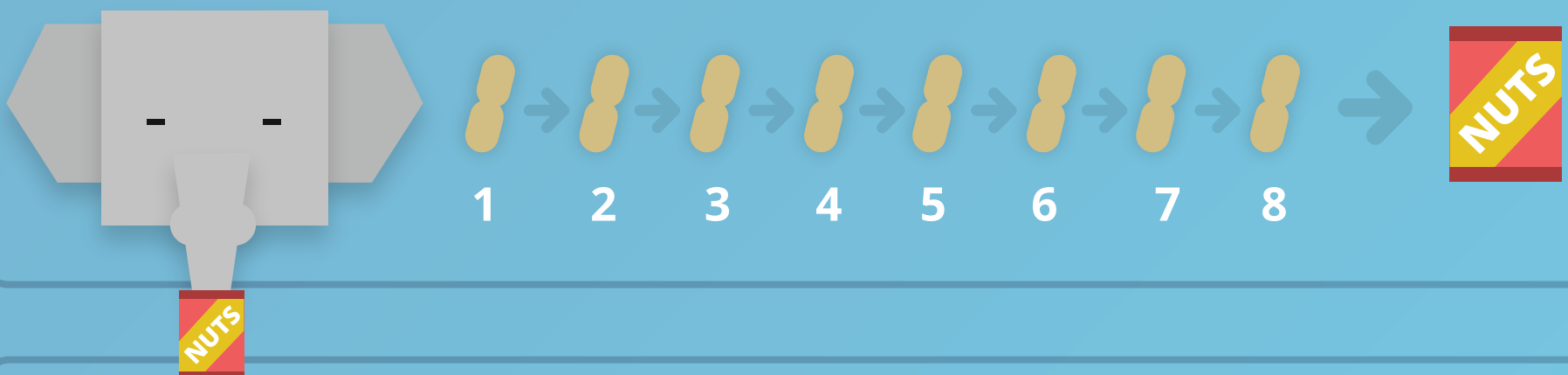**Until**

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Learn to Code: Nested Loops

Elephant is nuts about nuts. Every lunchtime she gobbles down 3 whole bags. Each bag contains 8 tasty nuts...

1 NUTS = 8

She eats 1 nut at a time until the bag is empty then moves on to the next bag. She repeats this process until all 3 bags are finished.

1 2 3 4 5 6 7 8
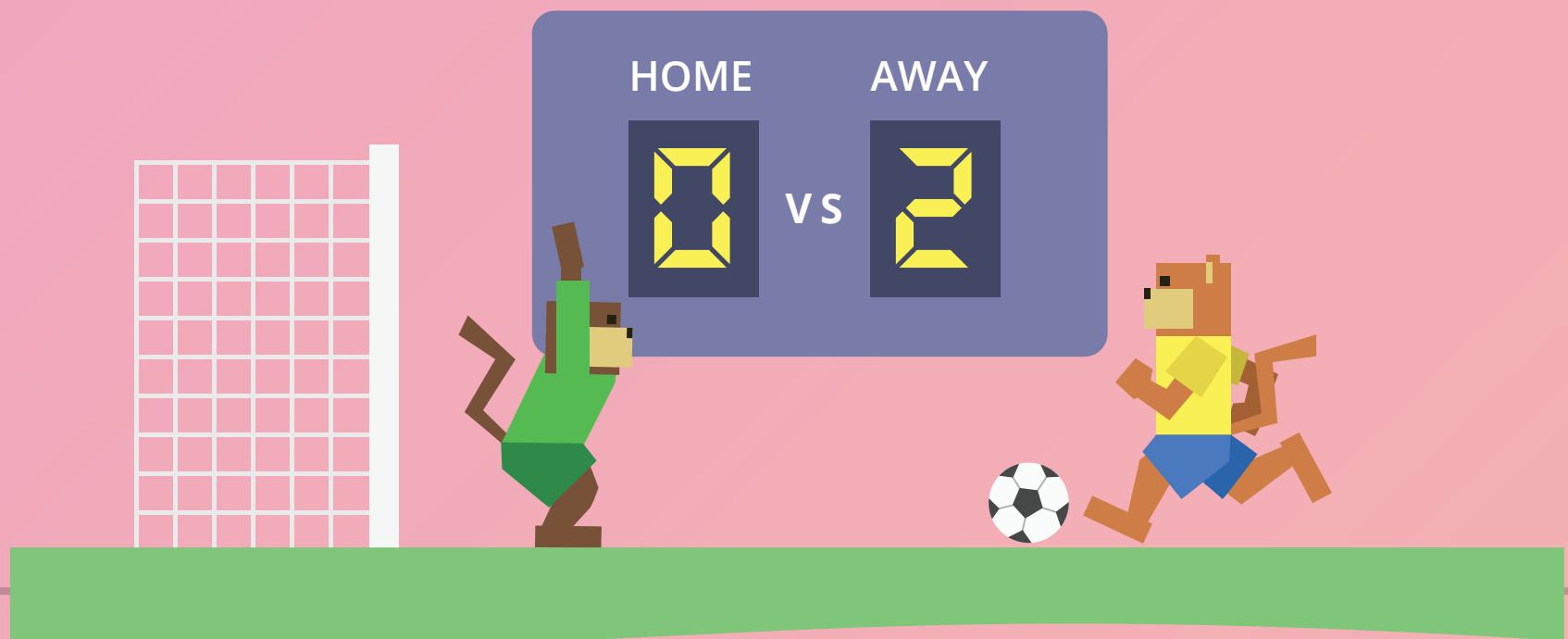
A nested loop is a loop inside another loop. In this example, the outer loop is opening each bag, and the inner loop is eating each nut.
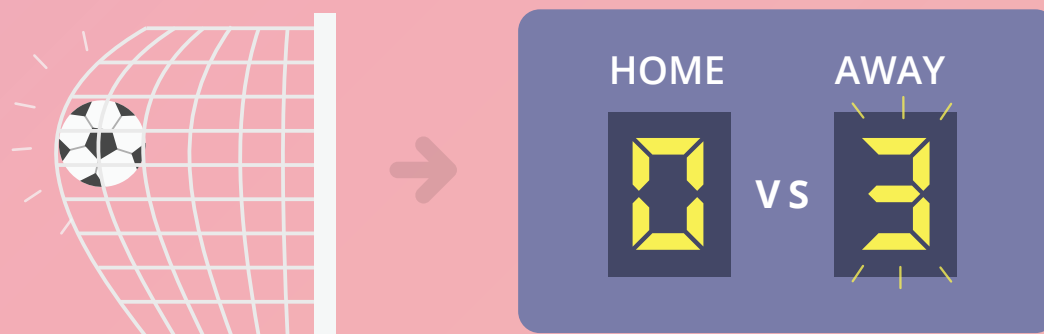
Open Bag → Eat a Nut 8 ↺ 3 ↺ =

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Learn to Code: Variables

To know which team is winning the Monkey Cup Final we need to keep the score...

HOME 0 VS **AWAY** 2

When either team bags a goal their score increases by 1:

HOME 0 VS **AWAY** 3

A variable helps a computer remember values that can change. Score is a variable. Each time a team scores, we add 1 to that team's score.

Variable Score = **Value** 0

Variable Score +1 → **Value** 1

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