

Hammie  
Hamster™

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# Basics of Programming for Kids



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# Coding with Hammie

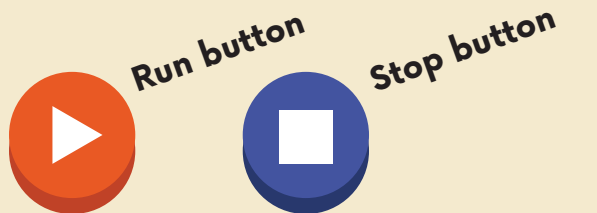
If you are totally new to computer programming, it is hard to know where to start. However, there is nothing to be afraid of. Computers are everywhere!

## Lines of code and Run button

A code makes a computer perform some kind of action.

In brief, programming is composed of two things: lines of code and run button.

After writing few lines of code, we can see how they work by pressing run button.



**1 Move 1 step foward**

**2 Move 1 step left**

**3 Move 1 step foward**

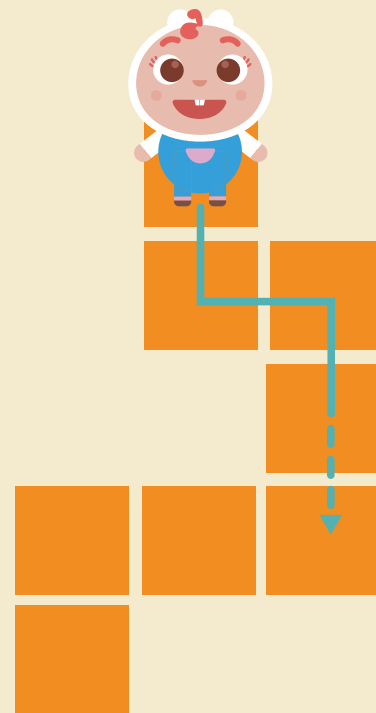


**58 Move 1 step right**

The program will stop after running all lines of code.

After 1st code,  
run 2nd code

After 2nd code,  
run 3rd code



## Sequence

A sequence is a series of commands. A computer will execute instructions by following the sequence(steps) that we had written. Therefore, it is important to write logical instructions.

### Sequence of Taking bath



Fill the bathtub  
with hot water

Soak yourself  
in a bathtub

Wash your body



Get out of the bathtub  
and rub your body  
with clean towel



Rinse off the soap

If we switch any of this steps, Hammie might take a bath without water or get out the bathtub with soap bubbles.

## Loops

Loops are repetitions of certain lines of code with certain times of repeating. Although we can write code in a sequence structure, Using loops enable us to program with an efficient way. Remember, efficiency is very important in coding!

### Tamia's lemonade stand



Tamia sells homemade lemonade in every weekend. It's getting so popular. This week, she took 100 orders for the lemonade.

I guess she cannot do that all by herself. Let's help her to make 100 lemonades by the concept of Loops.



## if / if-else

Specific commands that are executed only when the condition fits in.

### Today's Weather

Since Bambi likes gardening very much, Watching weather channel became her daily routine. We can help her to pick her dress by setting **if** and **if-else** structures.



Go out  
to garden



If the value is not fit into  
the condition that had set  
in the if statement,  
the code in the if statement  
will be ignored.

If we set else statement  
with if statement,  
else statement will  
executed when the value is not  
fit into the condition  
in if statement.



## Variable

A container that holds something inside. We can give a name to each variable. It is okay to change the name of the variable(container) and the values of the variable as well.

### Containers of Balls




## Random

Numbers that computer picks randomly.


Random makes programming interesting. We can use random when making a dice game or a random colors. We can also limit the random number.

### Picking a ball in the box



First : 

Second : 

Third : 

## Function

Function is a set of command that can be executed whenever programmer needs it. If we use variables in function, we can execute different actions by changing variables only.

### Drinking X in the Fridge



X can be replaced with apple juice, water, milk and anything to drink.