

Shopping animation

This program presents an animation of shopping activity.

The main screen shows a shop with items on display along with their prices. Customers walk in one after the other. Each customer first announces how much money he/she has. He/she can then buy items by clicking and then specifying the quantity. If at any time the total goes beyond the budget, the shop manager intervenes and rewards the customer with a punishment! If everything goes well, the customer can click on "Done" and leave with the goodies.

Explore the program:

If you want to play with my final program to get a feel for this animation, click the link given at the end of the article. Try not to peek at the scripts yet, since we want to design them ourselves below.

1. Click the "Green flag".
2. Follow the instructions.
3. Click Done if done shopping
4. Click STOP to stop the program

Scratch and CS Concepts Used

When we design this program, we will make use of the following Scratch and CS concepts. Learn these concepts if you don't know them before proceeding further.

Main concepts:

- Animation using costumes (Scratch and Snap)
- Arithmetic
 - o Expressions
 - o Basic operators (+, -, *, /)
- Concurrency
 - o Synchronization using broadcasting (Scratch and Snap)
- Conditional statements:
 - o Conditions: YES/NO questions
 - o Relational operators (=, <, >)
 - o Conditionals (IF)
 - o Conditionals (If-Else)
- Data types – basic

- Integers
- Events
- Looping (iteration)
 - Looping - simple (repeat, forever)
- Motion (Scratch and Snap)
 - Motion - absolute
- Program output
 - Text
- Random numbers
- Sequence
- STAMP - creating images (Scratch and Snap)
- User input
 - Text
 - Click buttons
- Variables
 - Simple
- XY Geometry (Scratch and Snap)

High Level Design

Once you get the overall animation working for one product (shop item) it would be easy to add more items.

In my version 1, I take care of the basic operations for a single product. In the final version, I add more shopping items and niceties such as penalty for budget overrun.

Version 1: [shopping-1.sb2](#)

Final version: shopping-final.sb2

<https://scratch.mit.edu/projects/358943637/>

Author: Abhay B. Joshi (abjoshi@yahoo.com)

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