



Keywords

Flowchart—Graphical representation of an algorithms

Algorithm—A precise set of instructions

Decomposition—Breaking a task into smaller, more manageable tasks

Abstraction—Removing any un-necessary information or data

Pattern Recognition—Looking for similar patterns to avoid repetition

Action—When you require the algorithm to do something

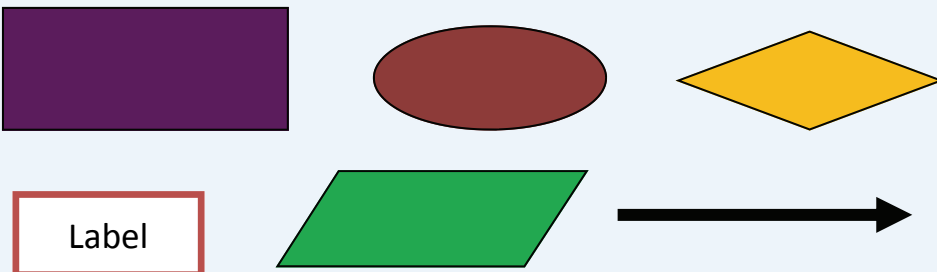
Condition—When you check if something is true or false

Selection—When you allow a decision to be made in your algorithm

Iteration—When some part of your algorithm repeats

Flow Lines—Lines that connect the flowchart shapes

Terminators—Starts and stops the algorithm



High Level Skills you should think about to take your work to the next level:

- Use a pencil & ruler to draw flowcharts—it is easier to correct any mistakes
- Test your own algorithms with sample data
- Be prepared to start over again —the whole point about design is to make mistakes before you build it for real
- Don't be afraid to ask others for their help or opinions—a fresh set of eyes is usually wise

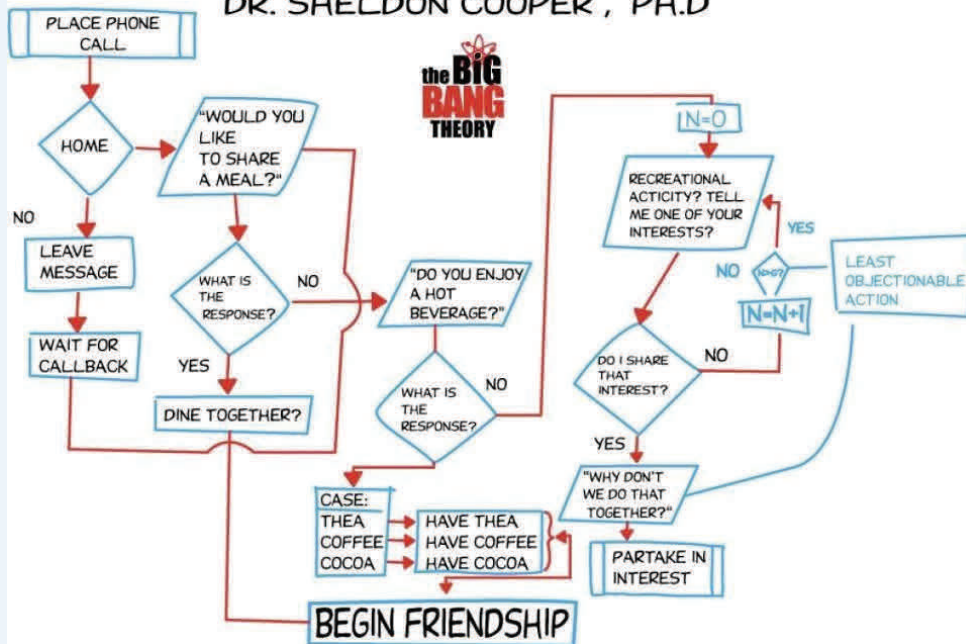
Top Tips

Good Design, Saves Time! In business this also means money! A typical project with 4 developers will lose £400 per day if it is delayed!



THE FRIENDSHIP ALGORITHM

DR. SHELDON COOPER, PH.D



Extra Challenge

Passwords are used almost every day and you will find them all over the Internet, from websites to social media and games platforms. As you know, it can be difficult to make new passwords for each site, never mind keeping track of them all.

Design an algorithm that asks a person a series of questions, and based on their answers, it generates a secure password.

Extension

You might want to design your algorithm so that it stores the website name, along with a username, and the newly generated password.

This could also be an activity that you choose to build in either Scratch or Python



The Friendship Algorithm from the Big Bang

Theory

- ◇ Can you follow the logic?
- ◇ Can you identify any of the shapes?
- ◇ Why is this a good algorithm?