

# Algorithms

A set of steps to accomplish a task

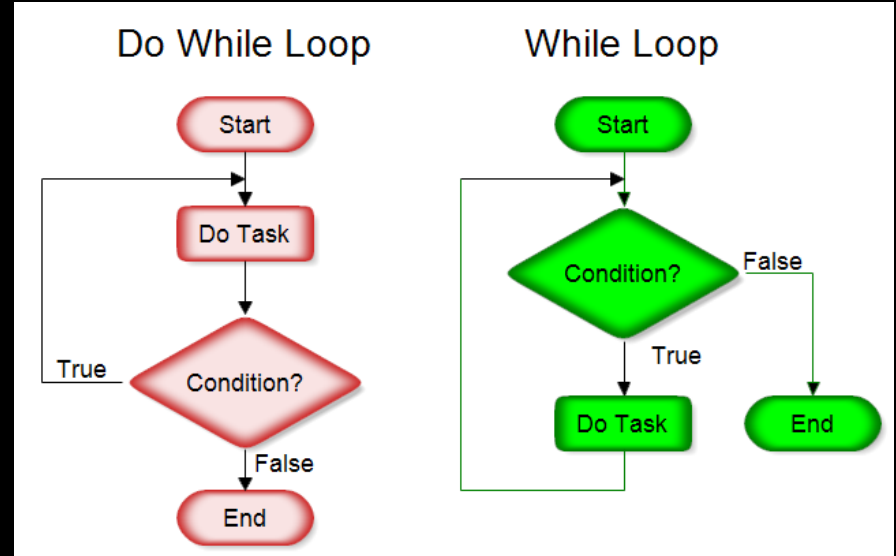
# Algorithms

- Describes the step by step action to solve a problem
- It is a well defined sequence of steps
- It gives you an output
- It will eventually terminate

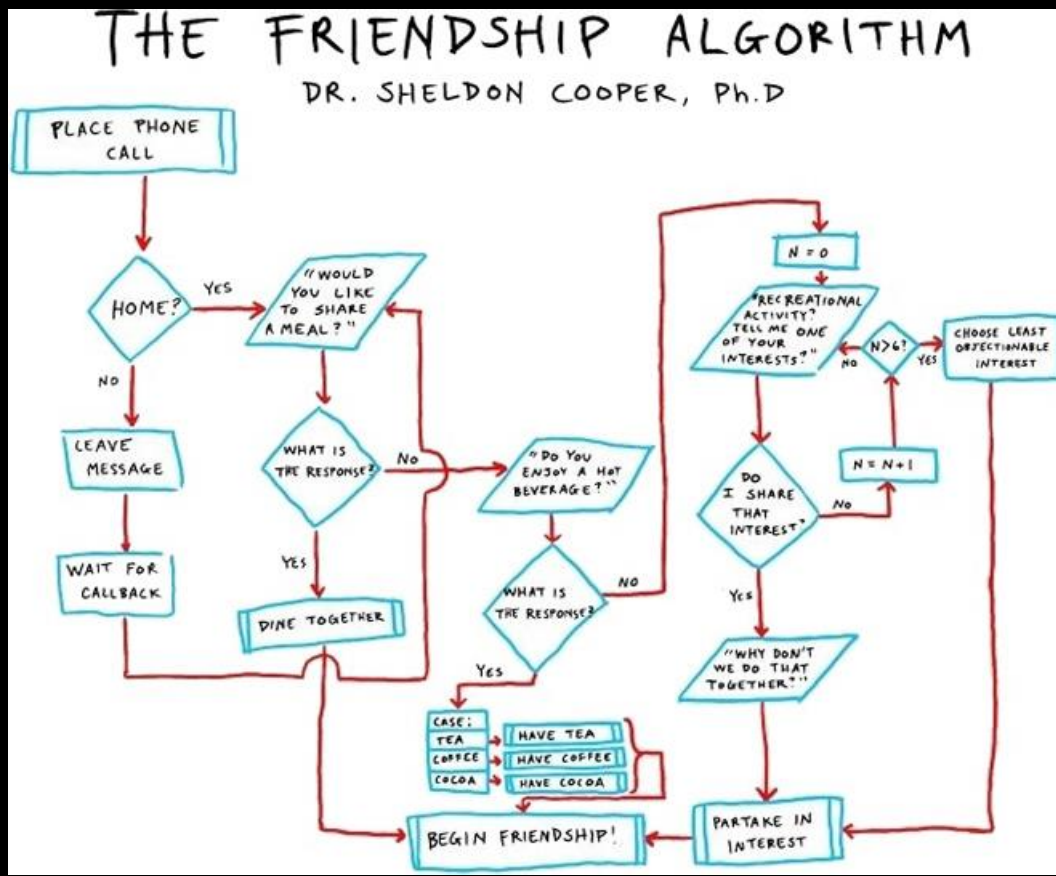
```
19  temp = ...
20  unsigned int len1 = s1.size(), len2 = s2.size();
21  const size_t len1 = s1.size(), len2 = s2.size();
22  vector<unsigned int> col(len2+1), prevCol(len2+1);
23  for (unsigned int i = 0; i < prevCol.size(); i++)
24      prevCol[i] = i;
25  for (unsigned int i = 0; i < len1; i++) {
26      col[0] = i+1;
27      for (unsigned int j = 0; j < len2; j++)
28          col[j+1] = std::min( prevCol[j+1] + 1, col[j] +
                               prevCol[j] + (s1[i]==s2[j] ? 0 : 1) );
29      col.swap(prevCol);
30  }
31  return prevCol[len2];
32
33  ... static void ...
    ... table ...
    ... size_t i, size_t j ...
```

# Algorithmic Loops

- A Loop is a programming structure that repeats a sequence of instructions until a specific condition is met.
- It continues to cycle through until an exit condition is reached.
- Makes coding easier and shorter to complete.



# The Friendship Algorithm



# The Friendship Algorithm



# Conditional Programming - If, Then, Else

- A set of computations or actions that controls executions of lines of code.
- If a block of code is true, then something happens.

