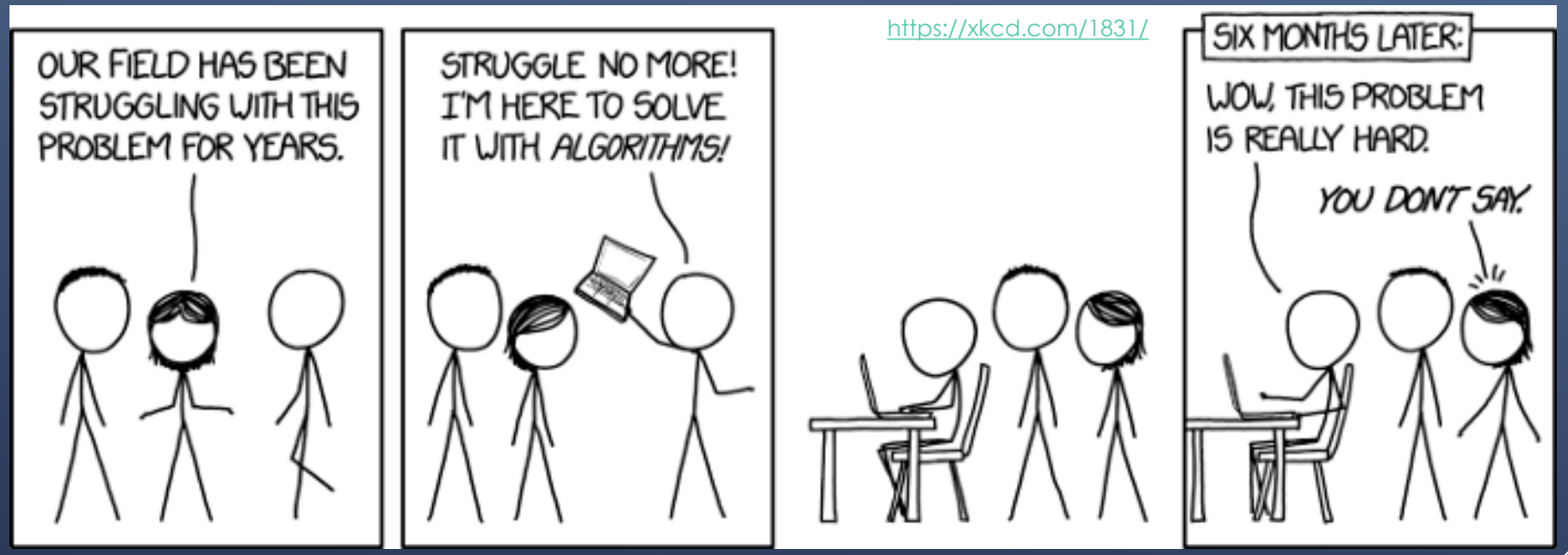
```
procedure linear_search (list, value)

   for each item in the list
      if match item == value
         return the item's location
      end if
   end for

end procedure
```

ALGORITHMS

Fariha Tabassum islam



https://xkcd.com/1831/

WHY STUDY ALGORITHMS?

- Essential for doing serious work in any branch of computer science. For example,
  - Routing and communication networks utilizes classical shortest path algorithms.
  - Public key cryptography relies on number-theoretic algorithms
  - Database indices rely on balanced search tree data structures
  - Computational biology uses dynamic programming algorithms to measure genome similarity
  - …

source: https://www.coursera.org/lecture/algorithms-divide-conquer/why-study-algorithms-jSwWo

WHY STUDY ALGORITHMS?

- Algorithms play a key role in modern technological innovation. For example,
  - Progress in Algorithms Beats Moore's Law
- Challenging and fun

source: https://www.coursera.org/lecture/algorithms-divide-conquer/why-study-algorithms-jSwWo

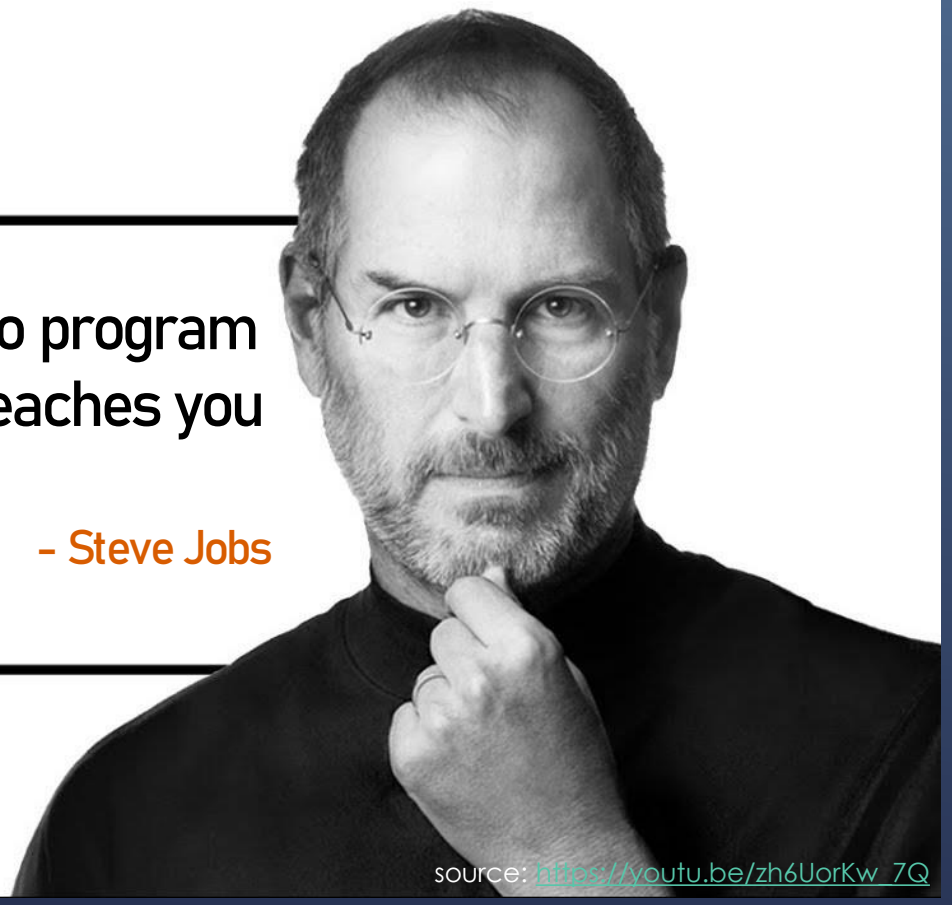
WHY STUDY ALGORITHMS?

- Algorithms help to find the most effective solution to a problem. For example,
  - "You learned to write code, and now you are a Ruby Wizard but you know nothing about algorithms. You have created a video hosting site (you hope the next YouTube). Your project is super successful but now you've got 10,000 people signed-in at the same time and everything is starting to break down. Your servers can't handle so many requests at the same time and start failing. Users are complaining that videos are taking forever to upload. Well, now you have to think of a solution and implement the most effective compression algorithm you can find. To do this you need to know how algorithms work." - https://medium.com/geekculture/why-do-you-need-to-learn-algorithms-cf749d341321

WHY STUDY ALGORITHMS?

"Everyone should learn to program a computer, because it teaches you how to think."

– Steve Jobs



source: https://youtu.be/zh6UorKw_7Q

SOME GOOD RESOURCES

- https://www.coursera.org/lecture/algorithms-divide-conquer/why-study-algorithms-jSwWo
- https://www.programiz.com/dsa/why-algorithms
- https://medium.com/geekculture/why-do-you-need-to-learn-algorithms-cf749d341321