Thinking Like a Programmer

The biggest issue new students run into is how to adjust their thinking to a style that is necessary for creating applications. Even as computers become more advanced, they continue to be very good at doing exactly what you tell them to do — even if it makes no sense at all. This means that you must become very good at saying precisely what you want the computer to do. This seems easy enough at first – after all, you communicate with other people all the time – but it is notoriously difficult to get right early on. Other people are capable of understanding your intent, adding context, and asking for clarification when they do not understand. Computers do none of this. At best, computers give an error when they do not understand and at worst they will carry out an instruction that you did not intend. This leads to problems with your program, crashes, or even data loss. The process of learning to think like a programmer is part learning to be very specific and part learning how to deal with seemingly impossibly-large problems. You'll go into both of these throughout this lesson.

How To Eat An Elephant

There's an old joke, `"How do you eat an elephant?"` which seems absurd at first. Eating an elephant is not something that any human is going to be able to do. The punchline: `one bite at a time` while corny, does have an element of truth to it. Given enough time and small enough bites, you probably *could* eat an elephant. So it is with large problems, both in programming and elsewhere. Doing a large report, cooking a three course meal for 20 guests, and building a web app are all impossible to do in one step. They must be broken down into smaller pieces until you are left with a pile of achievable tasks.