There are many reasons why a person could find it difficult to learn how to program a computer. I hope I in the paragraphs following this one I can investigate some of the reasons that this is may be true.

There are many scientific papers about the difference between the thought processes of men versus women (1) or left brain versus right brain (2) – in both these areas of study there is a confirmation of a difference between the way individual humans think. Examples of these differences could be due to their sex, brain, environment or education.

There are low level and high level programming languages. A low level one is Assembler or Machine code which consists of processor instructions and meta-statements in either Binary or Hexadecimal. Binary is base 2 so all date is in a 0 or a 1, Hexadecimal is in base 16 so numbers 0-9 and letters A-F. Learning a low level computing language is very difficult and many people who study computer science related courses only do simple levels of low level languages to understand the concept only. An example of this low level language can be found here (3)

A high level programming language is a mixture of syntax and semantics (4) for example Cobol, C, C++ and in the case of this course Python. If we accept that a programming language is a mixture of syntax and semantics then it can be a reasonable conclusion that in order to learn a programming language a human needs to learn both the syntax and semantics used to write a computer program.

I can see that it could potentially be compared to learning another physical language but there are several issues that we encounter when using a new language. The first is that some people are more talented at learning a new language to others. Then there needs to be practice which can be provided by conversations or watching TV for physical languages, then reading books but there is no direct equivalent for a programming language – reading code is very dry in comparison.

There can also be differences in learning style. There are many different ways of expressing a learning style (5) but for now I will focus on the VARK model – Visual, Auditory, Reading and Tactile. The course tries to provide for these methods by having the lecture video to watch and hear, the text book to read, and the exercises to perform. However if any of us learns better with visual tools like the lecture video that limits the opportunities for the individual to learn.

Age may also play a part in the different abilities of humans to learn a programming language. Someone young may handle the different skills needed to learn to program better than an older person.

If we add together all these differences there are a lot of variables that affect the ability to learn a programming language and therefore a lot of reason why each individual could find it harder to learn than another. For my own part I have an honours degree in Information Technology but I still find learning programming languages hard. It's a necessary evil but I would prefer to design interfaces, analyse data and map that data between systems as that excites me - programming is boring in my mind so I've never had the Eureka moment Dr Chuck describes. I'm hoping with his help I might have that this time.

1. <http://www.brainfitnessforlife.com/9-differences-between-the-male-and-female-brain/>

2. <http://www.livescience.com/32935-whats-the-difference-between-the-right-brain-and-left-brain.html>

3. http://en.wikipedia.org/wiki/Assembly\_language

4. <http://en.wikipedia.org/wiki/Programming_language>

5. <http://en.wikipedia.org/wiki/Learning_styles>