**Unit 3: Mental Models and Accessibility Issues**

Welcome to Week 3. This Unit introduces mental models and contextual design approaches to designing usable security solutions. The Unit further discusses how users’ and designers’ mental models can be combined to achieve optimal design solution. The accessibility issues and their implications within the context of usable security design are also discussed.

**In this unit we shall:**

* Explore the use of mental models in identifying user perceptions and security preferences.
* Cover the use of mental models as an approach to designing usable security.
* Review the contextual design process and how they are applied to usable security.
* Discuss the concept of accessibility and their implications.

**On completion of this unit you will be able to:**

* Understand the concept of mental models and their use.
* Develop the ability to apply mental models to usable security design.
* Develop the awareness and the legal basis for accessibility in the context of usable security.

This week builds on the knowledge gained in weeks one and two by discussing the methods and techniques to developing a usable security solution. This includes data collection methods, the design process including evaluation of artefacts developed in the process.

**Reflection:**

**Mental models** help us figure out what's going on in the world. They affect not only what we think and how we understand the world, but also how we see connections and opportunities. Simply put, a mental model is a mental picture of how something works. Because our brains can't hold all the information there is to know about the world, we use models to break the information down into smaller, easier-to-understand pieces. Mental models can change the way a person thinks about or understands how something, or someone works in the world. You can use mental models to think about how something or someone works, could work, or should work in the real world. (Carsten Hels, Knauff and Gottfried Vosgerau, 2006).

The mental models you use also affect how you think and what you do. They are the mental tools you use to understand life, make decisions, and figure out how to deal with problems. Learning a new mental model can help you see the world in a new way, like how Richard Feynman grew as a mathematician by adding to his toolkit. (James Clear, n.d.).

"**Contextual Design**" is a step-by-step process that can be used to gather information from the field and use it to design any kind of product with a technical part (Holtzblatt and Beyer, 2017).

**Accessibility** is the idea that everyone should be able to use a good or service, no matter how they get in touch with it. Accessibility rules are in place to help people with disabilities, but designers should still try to help as many potential users as they can in as many situations as they can (The Interaction Design Foundation. (2011)). Some of the most common barriers of accessibility are attitudinal, Technology, Architectural or physical, Information or communications and Organizational or systemic.

**References:**

*Carsten Hels, Knauff, M. and Gottfried Vosgerau (2006). Mental models and the mind : Current developments in cognitive psychology, neuroscience, and philosophy of mind. Amsterdam: Elsevier.*

*James Clear. (n.d.). Mental Models: Learn How to Think Better and Gain a Mental Edge. [online] Available at: https://jamesclear.com/mental-models#:~:text=Mental%20models%20also%20guide%20your.*

*Holtzblatt, K. and Beyer, H. (2017). Introduction. Contextual Design, [online] pp.3–29. doi:10.1016/b978-0-12-800894-2.00001-6.*

The Interaction Design Foundation. (2011). What is Accessibility? Retrieved from The Interaction Design Foundation website: https://www.interaction-design.org/literature/topics/accessibility