P2P Mapper: From User Experiences to Pattern-Based Design

User experience is an umbrella term referring to a collection of information that covers the user's behavior and interaction with a system or a service. It is observed when the user is actively using a service or interacting with information, includes expectations and perceptions, and is influenced by user characteristics and application or service characteristics. User characteristics include knowledge, experience, personality and demographics. We propose a process and supporting software tool called Persona to Pattern (P2P) Mapper, which supports designers in modeling user experiences and identifying appropriate design patterns. The proposed process consists of three phases: Persona Creation, resulting in a representative persona set, Pattern Selection, which includes behavioral pattern identification and an ordered list of suggested design patterns for each persona, and finally, Pattern Composition, in which patterns are used to create a conceptual design. The proposed tool supports the first two phases of the process by providing various automation algorithms for user grouping and pattern selection combined with the benefit of rapid pattern and user information access. Persona and pattern formats are augmented with a set of discrete domain variables to facilitate automation and provide an alternative view on the information. Finally, the tool and related process are applied to two different applications: a Bioinformatics website and a Bioinformatics visualization tool. The results of the studies demonstrate a significant improvement in the system usability of both applications.