A REFERENCE ARCHITECTURE FOR PERSONALIZATION OF USER INTERFACES IN MOBILE APPS

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Approval Sheet

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I am thankful to Allah Subhanahu Wa Ta'ala for giving me the strength to complete my research work.

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MS (Software Engineering)

Abstract

The smartphone users are increasing on large scale day by day and companies are developing mobile apps with the aim to enhance user experience. Personalisation is an important factor for enhancing user experience. There are two aspects of personalisation: content personalisation and user interface personalisation. A considerable amount of work has been done related to content personalisation in mobile apps, but personalisation of user interface still needs attention due to its significant importance. User experience can be enhanced significantly if user interface elements are personalised based on the user's interaction behaviour. To address this challenge, a reference architecture is proposed which consists of a model and a system architecture to personalise user interfaces in mobile apps. A Mobile User Interface Personalisation model is presented that incorporates various factors like Frequently Accessed Items, Frequent Sequence of Interactions/Navigation and Frequently Searched Items which can enhance user experience of mobile users. Our work also proposes architectural components that can deal with the personalisation of UI. We have extended the concept of designing explicitly navigational nodes in Web applications, to menu items in Mobile apps, so that based on the user's usage behaviour in terms of frequently used items, pattern of usage and frequently searched items, the location/position of these menus and buttons is personalised. A sample Mobile app has been build based on our proposed model and architecture to validate our model. User evaluation carried out by a sample set of users also validates relevance and significance of our model.

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