Poster: MobiTemplate: A Template-based Rapid Cross-Platform Mobile Application Development Environment

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1. INTRODUCTION

Customizable mobile services are usually expressed with complex services composed of different atomic services. Fine-grained atomic mobile services are not so convenient for end users to reuse. Considering that in identical or similar service domains, a great deal of the business logics and functions are reusable within the scope. So we present a template-based framework to allow reuse of services and to achieve rapid mobile application development. The reusable fine-grained service logics and functions are encapsulated into comparatively coarse-grained templates, from which the designers can create the personalized composite services and edit the templates efficiently.

2. TEMPLATE FRAMEWORK

MobiTemplate = <TemplateInfo, UI, Local Interface, Remote Interface, Logic>. TemplateInfo is a set of the basic information of the templates, including its name, description and related domain. UI includes a set of bars, including buttons, icons and diagrams, which allows users to interact with computers. Local Interface calls internal services of devices, including camera, wifi and location. Remote Interface connects to services of the third party, such as video analyzing service, phone call service and short message service. Logic expresses the order of atomic services, such as sequential logic and combinational logic.

At (a) part of the Figure, it describes the process from extracting identical or similar services into templates. Templates are divided by different domain and the templates can be reused in identical or similar domain. The (b) part of the Figure shows the process of creating a template. The five red circle are the components of MobiTemplate. Also this environment can generate cross-platform mobile applications, which refers to our previous work: EasyApp.[1] Buttons in the blue circle can create mobile device installation packages. EasyApp allows end-users to develop mobile applications by native APIs. While, MobiTemplate separates

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MobiSys'17 June 19-23, 2017, Niagara Falls, NY, USA

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ACM ISBN 978-1-4503-4928-4/17/06.

DOI: http://dx.doi.org/10.1145/3081333.3089294

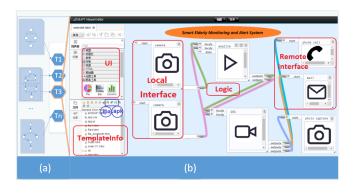


Figure 1: A template framework

similar and identical domains of services into templates. Using templates instead of using native APIs can reduce time of mobile application development.

Smart devices at home can help us live comfortably and it consists of many scenarios. As shown in the (b) part of the figure, we implement a template named Smart Elderly Monitoring and Alert System (SEMAS) as an example. Firstly, two cameras at home monitor the safety of the elderly. Secondly, the video analyzing service is called. Thirdly, an emergency program is invoked if the analyzing service reports anomaly. Fourthly, three services (a call, a short message, and a screenshot service from cameras) are used to inform caregivers. Cameras are invoked through local Interface, phone call service and short message service are invoked from the third party (Remote Interface). The combination of each service names the logic in MobiTemplate.

3. ACKNOWLEDGEMENTS

The research reported in this paper is supported by National High-tech R&D Program of China (863 Program) under Grant No. 2013AA102301; National Grand Fundamental Research 973 Program of China under Grant No. 2013CB329102 (Corresponding author: Bo Cheng)

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