Establishing Design Principles for Diagrammatic VPLs

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Abstract: This poster describes research which resulted in a checklist and design principles for diagrammatic visual programming languages (VPLs) based on empirical data collected through a series of controlled experiments and a qualitative-naturalistic inquiry.

Keywords: VPLs, guidelines, usability evaluation, experiment, immersion, diary study

1 Introduction
Applying a user-centred design approach to VPL design is challenging because of a lack (or scarcity) of empirically grounded design principles for programming languages. Usability studies of such complex applications are difficult to conduct holistically. At best, there is a set of design principles, based upon the heuristic evaluation method, available online for textual programming languages (Myers, n.d.). Nonetheless, a published set of empirically grounded design principles for VPLs is still non-existent.

2 The Research
This PhD research investigates usability issues of programming languages and of diagrammatic notations to recommend design principles and a checklist for diagrammatic VPL design. Six empirical studies were conducted, employing both quantitative and qualitative methodologies. Five of the studies were controlled experiments and one was a holistic usability evaluation of a commercial VPL utilising Immersion and diary study techniques.

3 Poster Description
This poster describes the research and the process by which findings from the empirical work were synthesised to produce a checklist and design principles for diagrammatic VPLs.

3.1 Poster outline
• Introduction to the research and its objectives.

References