Creating Interactive Content in Android Devices: The Mokap Hackaton

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Abstract. We propose the organization of a Mokap hackathon. In this activity participants will have the opportunity to develop interactive content using the Mokap Android app, either individually or in groups. Mokap is a new authoring tool for creating interactive content, developed by the e-UCM research group. It allows composing scenes by combining text, hand drawings, pictures and elements imported from an online repository. Mokap also supports basic animation and interaction. Users can take advantage of this functionality to create presentations, training materials, simulations, postcards and even simple games. We will start the activity with an introduction to Mokap, followed by a quick demo. Then we will help participants design their own mokaps and implement them. At the end of the activity participants will be given the possibility to share their mokaps with the rest of the audience. Participants will vote online to choose the best mokap developed during the session, which will be awarded a symbolic prize.

Keywords: Mokap, Serious Games, Authoring, Educational Games, Mobile Learning, Interactive Content

1 Description of the Activity

1.1 Topics Covered and Relevance to the EUD Community

This activity will cover how users from all backgrounds can create simple games and other interactive and playful pieces of content with Mokap. Digital games are a very popular type of content, especially in mobile devices which are a platform on the rise for casual gaming. However, their creation is usually limited to highly motivated authors with a certain background in programming. Some tools allow users with little technical background create their own digital games, but they are still complex to use for the great public. Besides, most game creation tools are oriented to the PC, a declining platform for personal computing. Game creation environments should start considering smartphones and tablets, as these are becoming predominant for all types of users.

adfa, p. 1, 2011.

In fact, mobile devices are still rather unexplored in terms of supporting interactive content authoring, an activity only available in desktop platforms.

We believe this hackathon is of great relevance for the End-User Development community, as the creation of games and interactive content is an extraordinary rewarding and creative activity that, unfortunately, has been out of reach for most end-users.

1.2 Goals and Detailed Description of the Planned Hands-on Activity

In this activity, we will cover the next goals: (1) Introduce the Mokap authoring tool; (2) Introduce basic game design concepts and game authoring; (3) Game authoring as a creative and social experience. During the activity, organizers will collect usage data and participants' feedback on the Mokap authoring tool to improve its usability and functionality.

This is the detailed outline for the activity:

- Welcome and introduction to the activity, leaded by the organizers [10 min].
- Basic introduction to game design and authoring (organizers) [30 min].
- Introduction to the Mokap authoring tool (organizers) [15 min].
- Brainstorming about projects that could be developed with Mokap. Examples: "directions to reach the coffee break room", "happy birthday card", "shoot'em up game with organizers' faces" (participants and organizers). [10 min].
- Initial feedback and discussion (audience and organizers) [10 min].
- Supervised project development [2 hours].
- Towards the end of the event, participants will be invited to share their finished (or work-in-progress) mokaps with the rest of participants [5 min].
- Participants will be given the opportunity to campaign for their mokaps before both participants and organizers vote for the best mokap of the session [20 min].
- Online voting is set up (audience, organizers) and voting starts [5 min].
- Voting poll is closed, winners are announced (organizers) [5 min].
- Final remarks and farewell (organizers) [10 min].

1.3 Logistics and organizational aspects

Cost of Material and Hardware. Organizers cannot supply smartphones and tablets to all participants, and thus they are expected to bring their own Android devices. However, organizers will make available for borrowing a small number of Android devices (5-6) with Mokap pre-installed for participants that may lack access to an Android device. Mokap is available for free and it runs on any modern Android tablet or smartphone (requirements: Android 2.3.3 and above, although 4.0.0 and above is preferable). Large screens (5" and above) are recommended for a better user experience.

Logistics Requirements. The room should be powered with a projector. WiFi connection is also necessary, as Mokap integrates a repository of graphical assets that requires Internet access and may consume considerable bandwidth. Power sockets should be available in the room so participants can recharge their devices if needed. USB chargers will be supplied by organizers.

Selection Criteria and Expected Number of Participants. Up to 20 participants from all backgrounds are welcome to participate in this session. No previous technical knowledge is required. However, participants are encouraged to bring their own Android devices (see above).

Expected Length. This activity is expected to last no more than 4 hours.

2 Project Description and Website

Mokap is a novel authoring tool for creating animated and interactive content like presentations, postcards, simulations and simple games. A first version of Mokap was just released in March 2015. Among its current features, it supports scene composition, text edition (Figure 1), hand drawing, image edition (through the Pixlr external app), integration of photos and elements from an online repository, basic animation and scene transitioning. With its current functionality, it cannot be expected to be used for the creation of very complex pieces of content, like full-featured games. Nonetheless, the project has set an ambitious long-term roadmap in the aim of making Mokap a real alternative for creating high-quality interactive content in general, and games in particular, that is affordable to the general public.

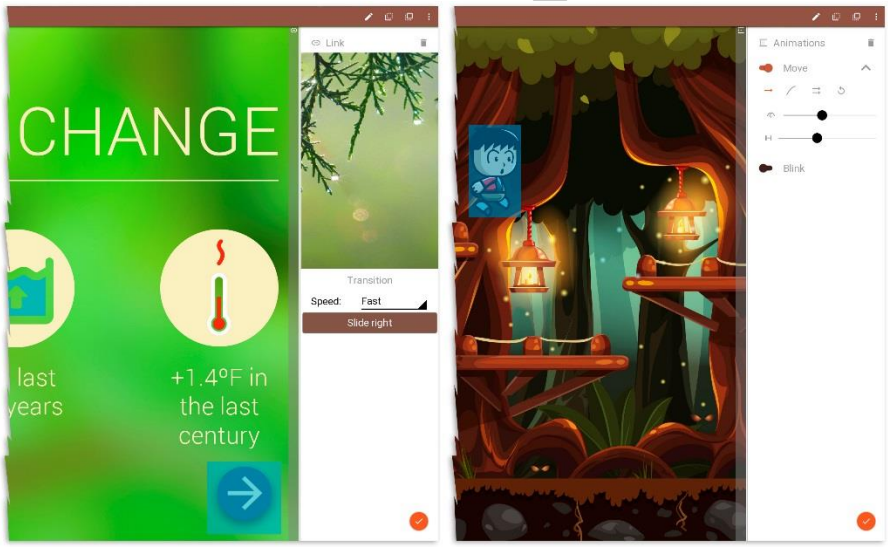

Fig. 1. Two snapshot fragments from the Mokap tool. Left fragment shows scene transition configuration, right fragment shows element animation.

We are also very interested in exploring how Mokap can be used to support serious game development (that is, games applied for a purpose beyond recreation, like education or health). Serious games usually require gathering to work together both technical experts (usually people with a strong background in game programming) and domain experts (people with valuable knowledge of the field the game has to capture and/or

transmit) like teachers, doctors, etc. Technical and domain experts usually have diverse backgrounds and approach serious game development from different perspectives, which hinders communication. As a result, knowledge elicitation and requisite capturing are hard to accomplish in serious game development. We believe that a tool like Mokap can facilitate collaboration between technical and domain experts and speed up serious game development, especially in early design stages where flexibility, creativity, agile prototyping and ability to rapidly adapt to design changes is more important than having full functionality. Since Mokap is designed for mobile devices, it can be used in co-design meetings to make sketches, mockups and prototypes. Second, as Mokap values agility and simplicity over full functionality, those prototypes can be created on the spot, so they can be rapidly verified and discussed among technical and domain experts. Once a basic consensus on the game design is agreed, game experts can take it from there and further integrate and develop the prototypes created using Mokap Builder, a programming framework compatible with the Mokap authoring tool.

Mokap is an open source project, licensed under the LGPLv3 license. Developers interested in the project can join our small but vibrant community at GitHub: https://github.com/e-ucm/ead/. More information can also be found on the official website: http:/www.mokap.es. The app can be downloaded for free from Google Play following the next link: https://play.google.com/store/apps/details?id=es.eucm.mokap.

3 Organizers' Biographical Statement

Ángel Serrano Laguna works for the e-UCM e-learning group at the Complutense University, while he finishes his PhD. His research focuses in the design and implementation of Serious Games and tools to ease their introduction in the classroom, as well as the application of Learning Analytics techniques for assessment in Serious Games.

Dan Cristian Rotaru and Antonio Calvo Morata work as contract researchers for the e-UCM group at the Complutense University of Madrid, where they got their BSc in Computer Science in 2014.

Javier Torrente got his PhD in Computer Science from Complutense University of Madrid in 2014. Currently he works as a post-doc researcher at University College London. Formerly he worked as a contract researcher for e-UCM. He is coauthor of more than 70 academic papers published in international conferences and journals in the field of Serious Games.

Baltasar Fernández-Manjón, PhD, IEEE Senior Member, got his PhD in Physics from the Complutense University. He is currently Full Professor at the ISIA Dpt., UCM. He is director of the e-UCM research group and his main research interests include e-learning technologies, e-learning standards and serious games on which he has published more than 120 research papers.

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