User Evaluation 1 Questionnaire

Background

The purpose of this evaluation is to **evaluate the basic functionalities** of my software architecture design tool. This questionnaire will firstly introduce basic tool instructions for participants, and then provide a case study with a series of questions.

Participants need to build an architecture containing two simple configurations based on different viewpoints, then answer some questions. The whole evaluation process for one participant will take about 10-15 minutes.

Participation in the evaluation is voluntary and **participants can decide not to take part at any point during the process**. **No personal information will be required or recorded** during the evaluation process.

Instruction

In the beginning, each participant is given 2 rectangular blocks at the 'example' architecture page called '**view**'. Each view is a way to '**represent your software structure towards a different type of people**'. The participant can enter a view through double-clicking, edit the view information or build a connection between views through right-clicking.

Inside a view, the participant can build two types of architectural elements: **component** & **connector**.

A component is **a processing or data element**. It can be either atomic (single-level) or composite (multi-levels). A connector is a link between two components which needs to be built on the **interfaces** of components. The connector can only be built based on two interfaces of two different components.

In the tool, a component can be created by right-clicking on the blank space, interfaces can be created on a component by right-clicking on that component and a connector can be created by linking two interfaces. Other customisation functions can be accessed by right clicking on these elements.

Case study: video game franchise architecture

Imagine you are a software architect who is working in a video game studio. Your company wants to start a new series of a game franchise (e.g. Call of Duty, HALO) that will be released on multiple platforms (e.g. PC, PlayStation, Xbox). You may assume:

1. This game is required to be an online game (i.e. involving Internet connection).
2. You are also the studio leader. Your team has all types of technical and marketing support, which includes (but is not limited to) artists, audio team, game designers, technical engineers, customer support, and so on. You are also not limited to any technical or financial issues (e.g. hardware support, budget).

You need to design 2 sets of architecture configurations for 2 different stakeholders: one for your project manager (one who manages the team, but is not involved in the development) and one for your technical team (one who is responsible for a particular technical issue).

Please follow the guide questions on the questionnaire page.

1. What type of game do you want to develop? Do you know any architecture style (e.g. client-server, distributed system, etc.) that would suitable for your design?

2. Firstly, you need to demonstrate your design decisions with a project manager. He/she does not need the technical details, but an overview of the system in terms of simple technical terminologies (in terms of architecture, logical view):

a. Component: based on your understanding of system overview, what components are needed in your design for PM? (E.g. a client-server architecture would have a client component & server component)
b. Interface: the components you have built can only communicate through named interfaces, what interfaces are needed for each component in your design for PM? (E.g. client and server would have HTTP interfaces)
c. Connector: the communication between interfaces can be established through a connection link, what connectors are needed in your design for PM? (E.g. the client & server HTTP interfaces can be connected to indicate an HTTP communication)
d. Construct a configuration using the design tool and add connector labels to indicate your choices.

3. Next, you need to demonstrate your design decisions with one of the software engineers:

a. Which perspective would you like to choose to design the architecture? A suggestion would be your most familiar role based on your past programming experience using any programming ontologies (e.g. Object-oriented, Process-oriented).

b. Based on the chosen perspective, what necessary components, interfaces & connectors do you need? Follow the steps from 2(a) - 2(d) to construct a configuration.

4. Now you have designed 2 ‘viewpoints’, which are 2 different perspectives for your game, please answer the following **single-choice** questions and write down any further comments:

a. Between these 2 viewpoints, is there any components or connectors that referencing the same element? If there is, how much?
   [ ] None [ ] 1 [ ] 2 [ ] 3+

b. Does the experience of designing the system overview configuration (1st graph) help you when you are designing the technical-specific configuration (2nd graph)?
   [ ] No, there is nothing related when I design these configurations
   [ ] Yes, I have used some experiences from the 1st one to the 2nd one.

c. In your opinion, are there any conflicts between the views you have designed?
   [ ] No [ ] Yes

5. Also, as a tool user, I would like to hear some feedback from you. Please rate the tools based on your experience and write down any comments:

a. The visualisation is expressive: I can understand the visual representations very easily as a designer or as a project manager / a software engineer.
   [ ] 1 (Very bad) [ ] 2 [ ] 3 [ ] 4 [ ] 5 (Very good)
b. The controlling is very easy and flexible: I can easily create/modify/delete the elements in the ways I want.
   [ ] Bad [ ] Moderate [ ] Good [ ] Very good
c. When I am creating the configuration, some of my ideas cannot be realised by the tool functionalities.
   [ ] Never [ ] Rarely [ ] Sometimes [ ] Always
d. The tool is clearly structured and there are no serious design defects.
   [ ] 1 (No) [ ] 2 [ ] 3 [ ] 4 [ ] 5 (Yes)
e. I would like a specific guide for how to use the tool.
   [ ] No, the current tool is OK [ ] It would be helpful. [ ] Yes, that is necessary.

If you have encountered any bugs during the evaluation, or want to provide some usability feedback, advice or suggestions, please leave it below:

Thanks for your participation!