Requirements Specification for the Facilitator Tool

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Contents

1 Introduction

This document contains the requirements which have to be implemented in the facilitator tool.

2 Data types and scales

The system needs to support different ways in which as question can be asked. This section will describe the various ways we have identified. We also note which measurement scale belongs to such a data source, to explain what statistical operations can be performed on resulting datasets.

2.1 Question types

2.1.1 Free response

This is a question for which the respondent can answer anything, given certain restrictions. It can be a specific datatype (like integer or text) and have specific restrictions (like $0 \leq x \leq 100$, or text length ≤ 100).

Figure 1: An example of a free response question.

1. What is your age?

2.1.2 Multiple choice, single answer

This is a multiple choice question with mutually exclusive answers. The resulting data type can differ per question.

Figure 2: An example of a multiple choice, single answer question

2. What is your age?
- 0-10
- 11-20
- 21-30
- 31-40
- 40 <=

2.1.3 Multiple choice, multiple answer

This is a multiple choice question with non-mutual exclusive answers. The resulting data type can differ per question.

2.1.4 Boolean questions

Boolean questions can be used to ask simple questions in the form of Yes/No, Agree/Disagree, True/False, etcetera. This is a more specific version of the multiple choice, single answer question. It gets its own category because it belongs to a different scale.

Figure 3: An example of a multiple choice, multiple answer question

3. Indicate what levels of education you have followed.

- ☐ Primary school
- ☐ Middle school
- ☐ High school
- ☐ Bachelor
- ☐ Master
- ☐ PhD

Figure 4: An example of a boolean question.

4. Is this correct?

- ○ Yes
- ○ No

2.1.5 Choice grids, single answer

Choice grids are used to answer questions or grade statements based on a custom-made scale. This scale also determines the measurement type scale. This type is defined by the attribute that each row is similar to a multiple choice, single answer question.

Figure 5: An example of a choice grid, single answer

5. Rate each of the statements. 1 = Strongly disagree, 5 = Strongly agree

	1	2	3	4	5
I find this survey fun.	○	○	○	○	○
I find this survey difficult.	○	○	○	○	○
I enjoy pancakes.	○	○	○	○	○

2.1.6 Choice grids, multiple answer

Choice grids are used to answer questions or grade statements based on a custom-made scale. This scale also determines the measurement type scale. This type is defined by the attribute that each row is similar to a multiple choice, multiple answer question.

Figure 6: An example of a choice grid, multiple answer

6. Indicate which words describe your experience when reading the statement.

	Difficult	Fun	Engaging	Motivating
My job	☐	☐	☐	☐
My personal life	☐	☐	☐	☐
My homework	☐	☐	☐	☐
My dog	☐	☐	☐	☐

2.2 Game Data

Game data will obviously differ greatly depending on the game that will be played. This is why this has to be specified on a per-game basis.

2.3 Measurement scales

Different levels of measurement allow for different types of permissible operations on a dataset. Seeing as the questions and game results can be seen as statistical data, we will have to differ between them based on their scale type.

Information about scale types can be found on Wikipedia[1] or in figure 2.3.

Figure 7: The differences between levels of measurement.

Scale Type	Permissible Statistics	Admissible Scale Transformation	Mathematical structure
nominal (also denoted as categorical)	mode, Chi-squared	One to One (equality (=))	standard set structure (unordered)
ordinal	median, percentile	Monotonic increasing (order (<))	totally ordered set
interval	mean, standard deviation, correlation, regression, analysis of variance	Positive linear (affine)	affine line
ratio	All statistics permitted for interval scales plus the following: geometric mean, harmonic mean, coefficient of variation, logarithms	Positive similarities (multiplication)	one-dimensional vector space

Every type of question and every type of game data belongs to one of these four scales, which have to be specified by the Survey's creator. By adding the information of measurement scale, we can support the various statistical computations that are allowed on every data type.

3 Server

¡Section about all functionality on the server side of thigns¿

4 Client

¡Section about all functionality on the client side of things¿

5 Glossary

¡Glossary¿

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[1]http://en.wikipedia.org/wiki/Level_of_measurement