An Ontology-based Semantic Design of the Survey Questionnaires

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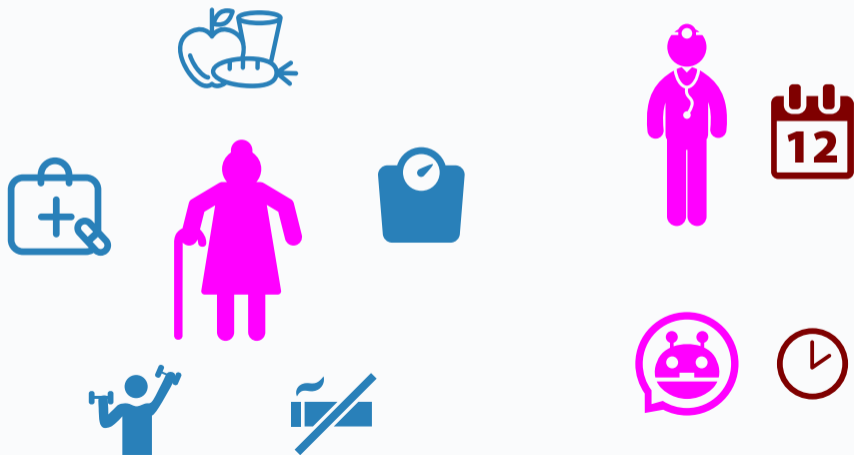Computer Science Department

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Use of personalized digital assistant may increase the adherence to the treatment among remote hypertensive patients

The system is developed on the top of Smart-M3 platform. Therefore, the data should be represented in ontology-based machine-processible form
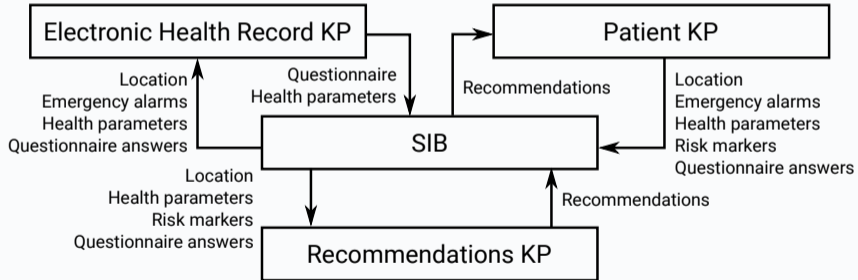
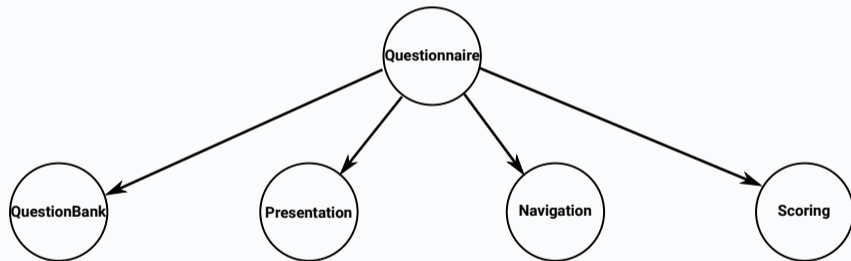A crucial part of the data is obtained from the patient by means of questionnaires...

Goals

Develop the ontological representation of custom questionnaires, taking into account

- the most of the variety of question types and possibilities of combining them;
- different options of visual representation of questions of specified type;
- files can be attached to the answers;
- answer scoring;
- question sequencing and branching.

Benefits of semantic representation of questionnaires and responses

- Possibility of linking of the specified answers with the problem domain ontology entities for further knowledge reasoning.

- Possibility of creating hooks for certain answers be means of notification mechanism provided by the smart space platform.

- Possibility of constructing personalized questionnaires from the questions obtained from different, and even, distributed sources based on the previous knowledge about the responder needs.

- Possibility of reconstructing questionnaires dynamically based on the continuous analysis of the accumulated response.

If the sentence below contains a spelling error, correct the error by writing the word as it should appear; if there is no error, write N.

It is no exageration to say that the students' insights into historical processes and social conditions were impressive.

_____

(a) Open-ended question

Do you have to pay fees for consultation and/or drugs at the facility that you regularly go to for the treatment of your hypertension? (Please mark only one option)
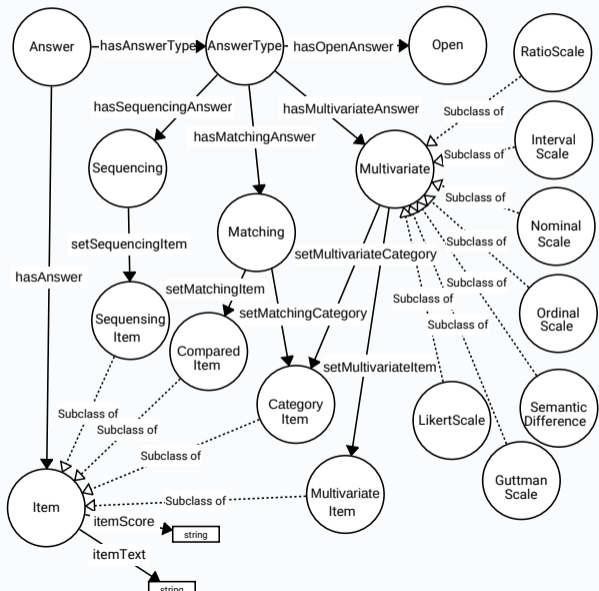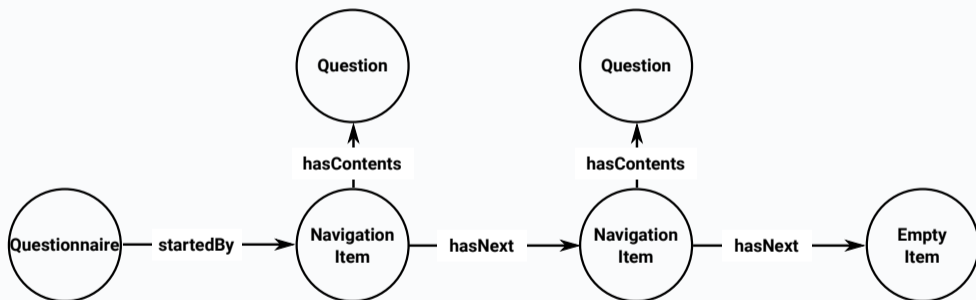
1. Paid nothing
2. Paid part
3. Paid fully
4. Paid (I do not know if part or fully)
5. I do not know

(b) Nominal scale question with single selection

Have you had any complications from your hypertension?

1. No
2. renal disease
3. stroke
4. retinopathy
5. cardiovascular
6. other_____
7. I do not know

(c) Nominal scale question with multiple selection

Have you been prescribed any medication to lower your blood pressure?

1. Yes
2. No
3. I do not know

(d) Dichotomous question

The software solved my needs

StronglyAgree	Agree	Undecided	Disagree	StronglyDisagree
1	2	3	4	5

(e) Likert scale question

Would you say our website is:

Very Attractive   Very Unattractive

| 7 | 6 | 5 | 4 | 3 | 2 | 1 |

(f) Likert scale question

How much money you have spent to acquire the services of excursion during your stay in our hotel?

1. Less than $ 50.
2. From 51 to $ 100.
3. From 101 to $ 150.
4. More than $ 150.

(g) Interval scale question

Order these cities by population size:

A. Genoa
B. Palermo
C. Rome
D. Turin
E. Milan

1. _____ 2._____ 3._____ 4._____ 5._____

(h) Sequencing question

Match each term with its definition

1. Deposition
2. Erosion
3. Lithification
4. Weathering

A. The chemical alteration and breakdown of rock
B. The conversion of sediment to rock
C. The dropping of sediment into a long-term reservoir
D. The picking up and carrying away of sediment

1. _____ 2._____ 3._____ 4._____

(i) Matching question

Responses are linked with questions and selected answers
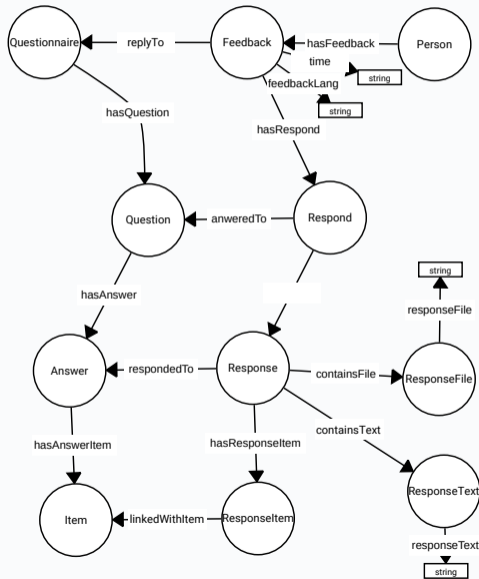
Answer types

Conclusion
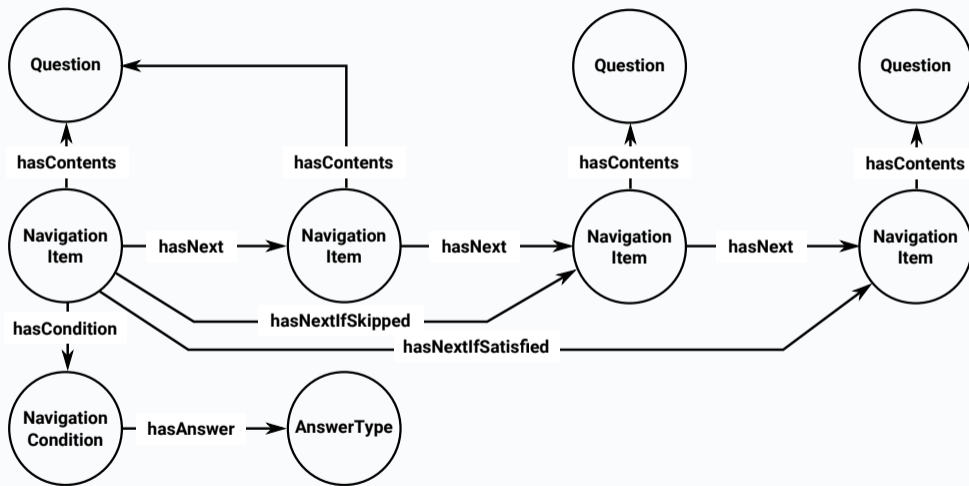
1. The ontology part has been developed for representing the questionnaires in SIB semantic storage.
2. The ontology (in simplified form) has been used in the prototype of the smart space-based service intended for assistance in medical emergencies.
3. Within the service for assistance in medical emergencies the mobile app has been developed to provide the patients with the questionnaire-based health state audit (initially for Android OS, then, during the Sailfish hackaton, — for Sailfish OS).

Thank you for your attention!

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