

Business Modeling: Project 3

Group 2

Spring 2012

Assignment

In this assignment you will develop a Protos model for a health care scenario. There are two main things that you need to do in this assignment.

1. Develop a Protos business model for the given scenario. You can follow Steps 1–4 as outlined in the Protos overview document.
2. Develop UML sequence diagrams corresponding to your business model. If you are using business patterns given in the Protos overview, you can use sequence diagrams provided along with the patterns.

Scenario

A patient finds symptoms of breast cancer and reports a primary care physician (PCP). PCP collects the history of the patient before the examination. PCP then thoroughly examine the breasts for lumps or suspicious areas. He then sends the patient to a radiologist for mammography. The radiologist performs a diagnostic imaging and reports the results to PCP. PCP reviews the results. If PCP finds the patient's condition not worrisome, then he asks the patient to visit just for an yearly checkup. If PCP finds the patient's tumor benign, then he asks her to come back after 4-6 months. If PCP finds the tumor suspicious then he orders the radiologist for a biopsy. The radiologist performs a biopsy and forwards the tissue specimens to a pathologist. The pathologist accesses the specimen and conducts several laboratory examinations to determine the nature of the cancer and comes up with a report. The pathologist then holds a conference with the radiologist and ensures their results are concordant. The radiologist then forwards the integrated reports produced by him and the pathologist to PCP. PT communicates Registrar to register the patient under a breast cancer registry. PCP checks the integrated report. If the tissue sample is benign, the tumor is removed by a surgeon. If the sample is malignant, PCP discusses the treatment steps with the patient.

Deliverables

There are three main deliverables. Carefully read the instructions.

1. A Protos model that captures the entire scenario in terms of commitments. Capture the roles, commitments, and commitment attributes. Submit an Eclipse project with the Protos model and a pdf image for the model. Your project folder should contain two things: (1) a Protos project having 2 files with extensions *protosmetamodel* and *protosmetamodel_diagram* respectively and (2) a *pdf* file for the business model. There should be only one business model. Projects with multiple business model will not be graded this time. Format of the files other than the mentioned ones will not be considered.

2. A set of UML sequence diagrams with messages that together model the given scenario. Submit an IBM RSA project and images of these sequence diagrams. Your project folder should contain 2 things: (1) a RSA project with a single *emx* file and (2) a set of *pdf* images. Any extensions besides the mentioned ones will not be considered at all. We will run your project and match your generated pdf files. If we find anything else that does not match the images, then the project will not be graded.

- Show the scenario participants as lifelines, and the messages they exchange.
- Specify the meaning of the messages based on the commitments in the Protos model.
- Capture the temporal ordering, constraints, and message occurrence and repetitions that the scenario describes.
- Omit the message parameters in the sequence diagrams.
- Create modular sequence diagrams.

3. An assessment of the whole exercise provided as a one-page document (400–500 words) including the sections below.

Approach: Describe the approach you followed in creating a business model based on commitments from the scenario.

Protos model limitations: Describe the scenario elements that you found difficulty to model using Commitments. What was the reason for the difficulty?

UML sequence diagram limitations: Describe the scenario elements that you found difficulty to model using UML sequence diagrams based on the commitments. What was the reason for the difficulty?

Other observations: Describe any other comments you have on modeling commitments using the Protos modeler.

Research Study

The results of this assignment will be used as part of a research study being conducted by the Service-Oriented Computing Lab at NCSU.

- To support the research study, we ask that you complete the pre-project survey and report your progress continually throughout the assignment by submitting the project worklog form every time you work on the project, and no less than **three times a week** (Monday, Wednesday, Friday). For submitting a worklog, follow instructions provided in Resources [3].
- The study elements (survey and worklogs) will be graded based on completeness and timeliness. Note that there are **no right or wrong answers**, and the contents of the survey will not in any way affect the grade.
- Your survey responses will **not be reported individually** and will be stored only in **anonymized form**.

However, if you prefer not to participate in the study, we can assign you an alternative project to replace the study elements. You will still need to complete the main deliverables of this assignment.

Since this is a solo project, do not post your queries on the message board. E-mail them to Pankaj Telang (prtelang) and Anup Kalia (akkalia).

Grading

Protos Business Model	40%
UML Sequence Diagrams	30%
Assessment of the diagrams and the tool	10%
Study elements (survey and worklogs) or Substitute project	20%

Resources

1. Course slides and notes
2. Protos overview
3. Specifying a Cross-organizational Business Model in PROTOS v1.0
4. Creating UML 2.0 Sequence Diagrams in IBM RSA v8.0
5. UML basics: The sequence diagram