

# User Session Guide

## Pilot-User Test Session – User Guide, v1.0, 2016/May

The objective of this pilot-user test session is to perform an evaluation of XIS-Web (both language and framework) by users that are not familiarized with it, in order to detect bugs or user limitations. The evaluation method involves a very simple case study application: “The TimeSlot Booking App”. The creation of the application using the XIS-Web technology by the users, will be used to assess the language usability and to study further improvements to both the language and the framework. The case study application description is as follows:

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### Case Study - The TimeSlot Booking App

“The TimeSlot Booking App” is an application that allows for the management of “TimeSlot” that are booked by “Students”. Each “TimeSlot” has a start date and time, a duration and a name. A “TimeSlot” also contains at least one “Topic” and is associated to a “Course”. The “Student” should be able to:

- Manage his current “TimeSlots”;
  - Create new “TimeSlots”, view or edit existing ones or remove a “TimeSlot” from the list. (Creating or editing a “TimeSlot” requires the definition of all of the “TimeSlots” attributes.
- Manage his “Courses”;
  - Create new “Courses”, view or edit existing ones or remove a “Course” from the list.
- Share his “TimeSlots” using an external service;

The information about Time slots should be persistent and there should be the possibility for a user to share his time slots with a remote server.

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### Test Conditions:

- Tests are conducted in the laboratory (controlled environment);
- The tasks must be performed without previous use and learning (for the first time);
- **The user must have a computer running Windows and previously installed Java Runtime Environment (recommended version 7) and Sparx Enterprise Architect (version 7.5, 10 or above);<sup>1</sup>**
- Direct Observation, i.e., while users perform the assigned task, their behavior and performance can be logged;
- Users can think out loud and share ideas if they want;
- The evaluator does not interact with the users until the tests are finished (except in case of blocking errors);

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<sup>1</sup> Users that are from IST can have access to free and full licensed versions of Enterprise Architect, available in <https://delta.ist.utl.pt/software/ea.php>. For other users, there is a 30 day trial version that can be downloaded from <http://www.sparxsystems.com/products/ea/trial.html>.

- The session will last 50 minutes (at most).
- The user must fill a survey in the end – available at: <http://goo.gl/forms/GDkiXaqASV>

### Instructions:

1. Download the XIS-Web EA Plugin installer from here: <https://goo.gl/VwR5Vi>
2. Install the XIS-Web EA Plugin. This plugin provides an extension for EA, that contains the information about the XIS-Web profile (language), its diagrams, toolboxes and project template. Functions provided by the XIS-Web framework (like validation and generations) are also provided by this plugin.
3. Open EA and create a new Project.
4. Upon the prompting of the Model Wizard window, under the "Others" option, select the "XIS-Web Framework" technology, then check "XIS-Web Framework model" option and confirm your choice. On the right side view, it should appear a Package Diagram with 6 packages (one for each view of XIS-Web).
5. In order to delete the stub diagrams created by EA, make use of the XIS-Web plugin. Go to the "Extension" menu option, "XIS-Web Plugin" option and select the "Delete Generated Models" option.
6. Begin by modeling the Domain view:
  - a. Create a XisEntity named "TimeSlot" and give it the following XisEntityAttributes:
    - i. "date" with type "Date";
    - ii. "duration" with type "Time";
    - iii. "name" with type "String";
  - b. Create a XisEntity named "Topic" and give it the following XisEntityAttributes:
    - i. "content" with type "String";
    - ii. "title" with type "String";
  - c. Create a XisEntity named "Course" and give it the following XisEntityAttribute:
    - i. "name" with type "String";
  - d. Connect the "TimeSlot" entity to the "Topic" entity using a XisEntityAssociation:
    - i. Double click on the XisEntityAssociation, and in the "Role(s)" menu, set the SOURCE "Multiplicity" to "1..\*" and the TARGET "Multiplicity" to "1".
  - e. Connect the "TimeSlot" entity to the "Course" entity using a XisEntityAssociation:
    - i. Double click on the XisEntityAssociation, and in the "Role(s)" menu, set the SOURCE "Multiplicity" to "1..\*" and the TARGET "Multiplicity" to "1".
7. Continue by modeling the BusinessEntities view:
  - a. Create the business entity "TimeSlotBE".
  - b. Copy the "TimeSlot", "Topic" and "Course" entities from the Domain view and paste them as "Link".
  - c. Make the following connections between the "TimeSlotBE" and the entities from the Domain view:

- i. Connect the "TimeSlotBE" to the "TimeSlot" entity using a "XisBE-EntityMasterAssociation";
    - ii. Connect it to the "Topic" entity using a "XisBE-EntityDetailAssociation";
  - d. Create the business entity "CourseBE".
  - e. Connect the "CourseBE" to the "Course" entity using a "XisBE-EntityMasterDetailAssociation";
- 8. Model the Architectural view:
  - a. Create a XisWebApp named "TimeSlotBookingApp".
  - b. Create a XisRemoteService named "TimeSlotSharingService" and add a XisService Method named "shareTimeSlots"; This method should return "void" because it will originate a method stub for the developer to implement.
    - i. Note: The XisRemoteService is an Interface;
    - ii. You will be prompted to accept the realization of the method, and should respond affirmatively.
  - c. Create a "XisServer" named "TimeSlotServer".
  - d. Connect the "TimeSlotBookingApp" to the "TimeSlotSharingService" using a XisWebApp-ServiceAssociation.
  - e. Connect the "TimeSlotServer" to the "TimeSlotSharingService" using a XisProvider-ServiceRealization.
- 9. Model the UseCases view:
  - a. Create a XisActor named "Student".
  - b. Create a XisEntityUseCase named "Manage TimeSlots"; Double-click on it and select the "XIS-Web" menu (to the right) to see its tagged values:
    - i. Confirm that the tagged value "type" is set to "Entity Management".
    - ii. Set all the Boolean tagged values to true (CRUD for Master, Detail and Reference).
    - iii. Also set the "isStartingUseCase" tagged value to true.
  - c. Create a XisServiceUseCase named "Share TimeSlots".
  - d. Connect the "Student" to the "Manage TimeSlots" use case using a XisActor-UCAssociation.
  - e. Connect the "Share TimeSlots" use case to the "Manage TimeSlots" use case as an "Extension".
  - f. Copy the "TimeSlotBE" from the BusinessEntities view and paste it as "Link".
  - g. Connect the "Manage TimeSlots" use case to the "TimeSlotBE" using a XisEntityUC-BEAssociation.
  - h. Connect the "Share TimeSlots" use case to the "TimeSlotBE" using a XisServiceUC-BEAssociation.
  - i. Copy the "TimeSlotServer" from the Architectural view and paste it as "Link".
  - j. Associate the "Share TimeSlots" use case to the "TimeSlot Server" server with a XisServiceUC-ProviderAssociation.
  - k. Create a XisEntityUseCase named "Manage Courses"; Double-click on it and select the "XIS-Web" menu (to the right) to see its tagged values:
    - i. Confirm that the tagged value "type" is set to "Entity Management".
    - ii. Set the Boolean tagged values to true for the CRUD operations involving the master entity (Create, Read, Delete and Update the Master Entity).
  - l. Copy the "CourseBE" from the BusinessEntities view and paste it as a "Link"
  - m. Connect the "Manage Courses" use case to the "CourseBE" business entity;
- 10. Validate the Model:

- a. Click on the “Extension” menu option, select “XIS-Web Plugin” and click on the “Validate Model” option.
11. (If the model validation ended with no errors) Apply the Model-to-Model generation (the “smart approach”) to automatically produce the NavigationSpace view and InteractionSpace view diagrams. Otherwise fix the errors and try again.
  - a. To do so, click on the “Extension” menu option, select “XIS-Web Plugin” and click on the “Generate Models” option.
  - b. In the popup, select “List Menu” and click “Generate!”.
12. Check the contents of the InteractionSpace and NavigationSpace. If you want, you can perform some changes to it (optional).
13. Re-Validate the Models by repeating step 10.
14. (If the model validation ended with no errors) Apply the Model-to-Code Generation, to automatically generate the code for the web application. Otherwise fix the errors and try again.
  - a. To do so, click on the “Extension” menu option, select “XIS-Web Plugin” and click on the “Generate Code” option. Choose the path on which you would like the code to be generated to.
  - b. Click the “Generate!” button.
15. Check if the target generation folder contains the source code of your application.
16. Congratulations! You can now use the application you have developed with XIS-Web!
17. To use your application, go to the folder that you specified as generation target, and inside the “src” try opening one of the generated web pages. (Recommended starting point is the home screen).

**Extra info available at: <https://github.com/theedward/xisweb>**