



# Advanced Development Training

## Online Training Course Guide

2.50v3 2010



[www.openbravo.com](http://www.openbravo.com)



## I. Course Summary

After mastering the **concepts** of the Openbravo ERP application (MDD and MVC) and getting acquainted with the **installation and basic development** options, it is time to dive into more technical topics and reveal the super powers of our ERP application.

This course is designed as **an active self-study training** supported by an Openbravo Training Specialist. During the **5 week training** you will be given materials, exercises, tests, your own virtual environment and assistance from our instructors. This way we aim for a unique and efficient, but even more, a successful learning experience. We would like to emphasize that this course is **not a set of live and passive webcast sessions**.

By the end of the course, the student should be comfortable customizing the application, extending it with new functionalities and packaging solutions into modules.

## II. Requirements

### IV.1 Target Audience

This course is targeted at **developers** who will be customizing or extending Openbravo ERP with new functionality.

### IV.2 Knowledge Prerequisites

- knowledge of basic development concepts in Openbravo ERP (mastered by taking the Basic Development course). **Note:** topics such as installation, basic customizations through the use of application dictionary and report development will not be discussed here!
- good knowledge of **Java** (or at least object oriented programming concepts in another language)
- knowledge of **HTML**
- basics of **web applications** (preferably J2EE)
- good knowledge of **database concepts** and **SQL** (SELECT, stored procedures, triggers)
- knowledge of **source control** (e.g. Subversion) is a plus

### IV.3 Computer Requirements

- **dual core** processor (2GHz or faster)
- **2Gb RAM** or more
- **Linux/Windows** OS (MacOS is strongly advised against)
- Compatible **web browser**: Firefox 2.0 or later, Internet Explorer 7.0 or later, Safari 3.0 or later



- latest release of Openbravo ERP installed locally with a Postgres database (all materials and solutions are based on it).

### III. Conference Schedule

We estimate around **40h of student dedication** spread over 5 weeks is required to finish the course.

	Week 1	Week 2	Week 3	Week 4	Week 5
<b>Monday at 16:00 CET</b>	Live session introducing the platform and the content				
<b>Rest of the week self-study</b>	* Setup & Scenario Presentation  * Modularity & Initial Client Setup	* Advanced Application Dictionary  * Stored Procedures	* Action Buttons and DAL (Data Access Layer)  * Callouts	* Background Processes  * Triggers  * Webservices	* Manual Windows  * Packaging the Solution  * Resolving left issues

Again, we would like to emphasize that this course is an **active self-study training** rather than a set of passive webcast sessions.

### IV. Topics

#### IV.1 Welcome and Introduction

This first session will welcome you to the course and give you an overview and the schedule of the following weeks topics.

#### IV.2 Setup & Scenario Presentation

Before any other task, a development environment needs to be set up and configured.

All exercises and customizations within this course will have to be performed on the virtual instance of the latest version of community Openbravo ERP provided by the course. Each student gets ssh/root access to an instance hosted on the Amazon Elastic Cloud.

To resemble a real-life scenario a **hotel management module** will be developed with the following requirements:

- **Guests** that can tie to a Business Partner to whom an invoice can be issued
- **Rooms**



- **Stays** - overnight stay of a particular guest in a room
- **customized Business Partner** screen
- **background and on demand recalculation of guest rates** based on the history of stays
- **webservice** that exposes a list of available rooms to the world according to smoking/non-smoking criteria
- **automatic check-out** from the original room upon switching rooms
- **package all developments** for this solution into a single OBX file that can be shared/distributed

An **initial client+organization setup** will be performed for a fictitious customer Hotel Green Terrace to simulate the application setup and a testing environment.

### IV.3 Modularity & Initial Client Setup

Development of any artifact starting with Openbravo ERP v2.50 must be part of a module. A **new Hotel Management template + module will be created** which all subsequent course developments will belong to.

We will also learn how to install an existing external module, in our case a Spanish Localization Pack that the hotel management case will be based on.

Initial Client Setup will be performed, using reference data from the Spanish Localization Pack.

### IV.4 Advanced Application Dictionary

One should be familiar with the basic concepts of an application based on Model Driven Development (MDD) approach by now. Openbravo calls it's metadata the Application Dictionary. Advanced application dictionary development powers will be discussed with topics such as:

- creating new tables, windows, tabs and fields
- making fields conditionally read-only
- making fields display under certain conditions
- changing labels and descriptions of fields
- default values
- document sequences
- making and exporting changes to a core window

### IV.5 Stored Procedures

Most of Openbravo ERP's business logic is located within stored procedures inside



the database. Development of new stored procedures will be discussed here, specifically one that recalculates all guests' rates according to their stays within the last X months.

## IV.6 Action Buttons and DAL (Data Access Layer)

When trying to extend automatic windows defined inside the application dictionary, action buttons are one way of doing it. We will introduce an action button to the guest window that recalculates a specific guest's rate based on his or her stay within the last X months. Instead of a stored procedure or XSQL way of doing database operations, the new Data Access Layer (DAL, based on Hibernate) will be used.

## IV.7 Callouts

Doing validations, additional database calls or plain calculations within automatic windows is possible using callouts associated with individual fields. A new callout will be developed that upon entering a check-out date for a guest's stay, the final sum will be calculated automatically based on the nights stayed and the room rate given.

## IV.8 Background Processes

Any Java process in Openbravo can easily be developed and scheduled as a background job. We would like our guest rate recalculation to happen automatically which will have to be implemented using a background process.

## IV.9 Triggers

Another portion of Openbravo ERP business logic is implemented using database triggers. We will learn how to write new triggers, specifically one that operates on our list of stays, making an automatic checkout of a guest if they are switched to another room.

## IV.10 Webservices

Webservices are a great way of making applications flexible and open to integration with other systems. Openbravo supports SOAP as well as REST webservices which will be discussed in this chapter. A new REST webservice will be developed that offers a list of available (non occupied) rooms according to the smoking/non-smoking criteria passed.

## IV.11 Manual Windows

When a certain functionality cannot be supported by the elements we have discussed until now or when a different UI is required, a manual window can be developed from scratch to fill the gap. This is the last resort which should only be taken when no other element can be used to implement the solution. Manual windows offer limitless options but make you the full owner and maintainer of it. Consequently, manual windows do not benefit from Openbravo bugfixes or upgrades.



## IV.12 Packaging

By now, you will have lots of additional developments done compared to the core Openbravo ERP. Packaging them together in order to install them at a customer's site or share them with the community is crucial. We will learn how to define datasets and export all metadata to a specific module's folder and package it together into a single .OBX file.

## V. Course Materials

Upon payment, you will receive the username and password used to enter the <https://university.openbravo.com/login/index.php> e-learning platform. This platform will be used as the main interaction between you and the Openbravo Training team. The following elements will be present to deliver the ultimate course experience:

- News blog where live sessions and other news will be published
- Documents for each topic and assignment that can be printed out
- Links to Howto articles and additional readings
- Q&A forums answered by an Openbravo training specialist
- Exercises and assignments
- Evaluation form
- Weekly live sessions through webcast
- A link to a private virtual instance of Openbravo ERP application where exercises will need to be executed

**NOTE: All written materials are only available in English.**

## VI. Price and Registration

Please check the information on-line

<http://www.openbravo.com/services/training/#online>