OSOE MOOC on ERP5

by [OSOE Project](#).
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In February 2013, Supinfo International University and TU Dresden launched the first Massive Open Online Course (MOOC) to teach ERPs based on open source ERP5. About 1500 students located in 12 countries were participating to the MOOC in addition to dozens of anonymous students from other institutions, as well as people who are interested in open source ERP. The MOOC is based on ERP5, an open source ERP created by Nexedi which is deployed by multinational companies, by governments on 4 continents and on the One Student One ERP (OSOE) education program.

During two months of OSOE MOOC, Supinfo students obtained ERP consulting experience. Based on machine learning technology, the corrections of the MOOC evaluation made by Supinfo professors help to develop a big database for a correction suggestion system - the ERP5 MOOC Manager.

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What is OSOE?

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Through the One Student One ERP (OSOE) programme, Nexedi has been investing for more than 5 years to promote a new approach to the education of Enterprise Resource Planning (ERP) consulting.

What is OSOE?

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The goal of OSOE is to create in close partnerships with universities or schools a generic ERP curriculum based on the idea that less is more.

Instead of teaching that ERP architectures are very complex and require thousands tables in a large database, OSOE teaches how to unify all management theories with 5 elementary concepts (resource, node, movement, path and item) and design poweful ERP software with less than 10 tables.

What is OSOE?

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Instead of listing thousand requirements for an ERP project, OSOE teaches each student to observe a company and find out a few practical management improvements which the CEO can understand and which can be implemented in a matter of weeks.
By getting closer to the local businesses within the OSOE project, the student can share the result of the current academic researches with managers. Moreover, you can find new research partners thanks to the program.

Thanks to SlapOS technologies, an ERP5 instance can be delivered to each student. So they are free to leave the ERP5 instance with all their data and to reuse them on their own.

OSOE ERP MOOC Concept

MOOC OSOE is for everyone. [All the course materials are on line](#).

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The first goal is to teach universal workflows in companies. By doing so, students will be able to understand the fundamentals of how companies are organized and how ERP systems can help companies to improve their performance by managing their business process.
The second goal is to observe how workflows are implemented in an ERP. For this we will use ERP5 instances delivered through SlapOS to each student of this lesson. Students will then be able to practice each workflow as company staff do everyday.
The third goal is to teach how to perform an initial consulting process for an ERP implementation. We use an online questionnaire with the most important questions to ask to a company during this process. The objective of the questionnaire is to identify those business processes which are not successful enough and which can be improved using an ERP. The objective is to understand how to set the priorities for an ERP implementation.
The fourth goal is to teach how to configure an ERP through the definition of so-called categories. Since the configuration is made through a spreadsheet, no programming skills are needed and the focus is kept on management and organization rather than on technical details.

Every session will be organised in the same manner:
We will begin with a presentation of the theoretical and universal workflow of the company. Then the students have time to work on the following ERP5 tutorials related to the studied workflows by practicing the ERP5 instance.

The case study presents Aurora Systems, a german software company which develops a school library management software. The students see the answers to the most important questions for this company and learn which category configuration results from these answers.

The last session is the evaluation of the OSOE MOOC. The student is evaluated through the preparation and configuration of an ERP system, such as ERP5, for a real company. Students will have to choose and describe their company, fill the questionaire to perform the initial consulting process, in order to help them taking decisions and improve the company's management. Finally the student will have to fill the category spreadsheet to configure the ERP.

What is new in OSOE MOOC?

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One of the key problems in creating a MOOC to teach ERPs to 1500 students is to automate the teaching process of ERP consulting and then enforce high quality assurance.

We used SlapOS cloud computing system to automate the provisioning of an ERP5 instance to each student either online or offline.
From our open online tutorial, you will know how to download and install ERP5 Virtual machine.

What is new in OSOE MOOC?

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After you logged in Firefox will start with two tabs: One for the course material, where you can find the readings and tutorials and one with your ERP5 Instance. Click the ERP5 Tab and Log in, then you are ready to start to practice ERP5 with Session 1.

What is new in OSOE MOOC?

For the course assessment, [anonymous students can register to ERP5 Massive Open Online Course](#)
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The two most common methods of MOOC assessment are machine-graded multiple-choice quizzes or tests and peer-reviewed written assignments. Our method is "peer-reviewed" but with the machine helping the professor to be more efficient and more effective , so that fewer correctors can handle more students with increased evaluation qualtity. So our MOOC allows more individual evaluation compares to other MOOCs.

Our advantage comes from the use of ERP5 Artificial Intelligence Toolkit which models the online questionnaire of ERP consulting process, automates the exam process of students and develops the correction suggestion system for the exam reviewers.

The exam and correction system consitsts of:
- An online exam system which allows to build a dynamic questionnaire to fill-in online by the students.
- A correction system which allows a professor to correct the questionnaire of the students of his class online.
- A correction unification system, which allows to standardize the correction of many exams by a big team of correctors:

° Corrections are split into a standard part and an individual correction part.
° Trainers can select the standard correction out of a list of possible corrections. This way unexperienced trainers can quickly learn to correct and it makes sure corrections are unified.
° Trainers can add new standard corrections, so the correction system dynamically gains correction experience.
° Trainers can add an individual part in the correction to explain to the student the why a correction applies in a particualr case.
- A correction of correction system to provide quailty assurance: Experienced professors supervise the correction of several unexperienced professors.
° They can validate and invalidate corrections made by unexperienced professors and thus assure the quality of the corrections.
°And by doing this, we improve the suggestion system, so next time the "suggested corrections" should be much better,because the system learns continually from what has been corrected before.
- A grading system which unifies the grades based on the standard corrections.
- A submit-correct-submit workflow which allows the students to learn from their errors and improve their grade by submitting a new version of the exam after the correction of the professor.
- A correction suggestion system, which proposes to trainers corrections based on machine learning. The system learns with every new correction by a professor.

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The Correction Suggestion System is the technology outcome of OSOE ERP MOOC: the "ERP5 MOOC Manager". It increases the productivity of MOOC assessment: During two months of OSOE MOOC, 30 professors offers 6084 correction lines. The number of correction lines is high, it means that professors work very efficiently.

Thanks to our correction system, few trainers can evaluate many students, because the correction systems suggests corrections, so it should be easier for the trainers. And, since we have a system "correction of correction", we can use many "new" professors, and ensure that they correct in the same way.

So, our MOOC has something which no other MOOC has: it ensures mass individual corrections.

Our MOOC resolves a typical problem: until now, only rich universities could provide a good MOOC, because these rich universities have huge professional teams to do the corrections. Other MOOCs do not provide individual correction, because they have not enough trainer resource, so, they provide no correction at all. Since we industrialize the corrections using our

correction system, so, for these MOOCs, ERP5 MOOC Manager is a solution, because we make the correctors more productive.

OSOE MOOC FLOSS technologies and contributors

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OSOE ERP Massive Open Online Course relies on multiple innovative open source technologies:

SlapOS cloud operation system provisions and configures ERP5 instance for each student.

ERP5 Artifical Intelligence Toolkit is used to build decision trees and questionnaires which guide students through the consulting process, it also develops the correction suggestion system. It is developed by Nexedi together with TU Dresden, while the algorithms used for the correction suggestion system were provided by Telecom Bretagne and Rapid-I which builds predictive models which increase the productivity of professors during the evaluation of student input.
This work was done as a part of Cloud Consulting project of Eureka Eurostars innovation program, where Beia Group also participates to build the correction lines database.

ERP5 RunMyDocs is used to automate quality assurance of software documentations for the OSOE online tutorials: The use of ERP5 RunMyDocs allows us to produce HTML5 based learning materials and automatically keep the course documentation in sync with the latest ERP5 releases. This allows us to achieve high quality assurance of the initial learning process

Why Supinfo needs OSOE MOOC?

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SUPINFO has a long experience in industrializing education. With over 5000 students in 36 different sites, there is no other way than enforcing high quality assurance and automation through IT. Thanks to the distribution of virtual machines which include preconfigured ERP5 software and learning materials as PDF documents, we can guarantee that all students can follow their lecture even in case of unstable Internet access. Also, the online content from the OSOE project is an effective resource to drive the trainers and uniformize the course delivery among all our campuses.

Specially for supinfo students: they get the classes with a professor, but anybody outside Supinfo can participate in the online classes. The role of the trainer is to present the theory presentations and to correct the answers sets in order to make the course credible.

How to make OSOE MOOC come true?

▼ Details

In the very beginning of the OSOE MOOC online tutorials, it is very important to provide and FAQ, and a forum, and the "Read or you will die" document. It must be very clear,else, the MOOC provider will be spamed with many "stupid" questions.

Before you start: "Read or you will DIE!"
There are two Versions of the course. The standard way to do the course is by following the Virtual Machine Variant. The alternate version of the course is based on a link to an online instance of ERP5. Before you proceed further make sure you read this link to understand which version applies to you. This link will also teach you about the Evaluation of the course and how to use the FAQ and Forum.

For Questions or Problems: "Class FAQ" and "OSOE Forum"
In case you have any question or problem, please first read the Class FAQ to check, if your issue is described in our list of frequently asked questions. If you cannot find it there, please first read the posts in our OSOE Forum before you post yourself.

How to make OSOE MOOC come true?

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Before you start: "Read or you will DIE!"

Choose your appropriate version of the course
Understand how the course evaluation works

Learn to use the FAQ and Forum

How to make OSOE MOOC come true?

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For Questions or Problems:

1.Read Class FAQ
2.Read OSOE Forum
3.Ask OSOE Forum

Interaction between trainers and students in OSOE MOOC

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Interaction between trainers and students:

There are two type of interactions:
1) structured interaction through the questionnaire and correction system.

It is important, that the questionnaire systems helps to interact with the students in a standard way: They provide a first version of the work, then the professor corrects and then they can improve the work and learn from their errors.

Interaction between trainers and students in OSOE MOOC

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2) unstructured interaction in two fashions:
A) For "presence" students: directly in the classroom
B) For online students: using the forum

Qualification and credibility of OSOE MOOC

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Qualification at the end of the course:
The students learned to handle a consulting process for implementing an ERP for a small company: they were interviewing a real company, and they provided a basic ERP configuration for this company, so they learned to do the work of an ERP Consultant.

Why is the MOOC OSOE online test credible?
It is credible, beause the evaluation of the test is made individually by real professors.

Outcome of OSOE MOOC

▼ Details

1. Education of ERP consulting:

1500 students located in 12 countries are trained to use ERP, to implement ERP consulting and to configure an ERP by themselves.

2. The technology outcome-the ERP MOOC Manager increased the productivity of MOOC assessment: During two months of OSOE MOOC, 30 professors offers 6084 correction lines. The number of correction lines is high, it means that professors work very efficiently.

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What can be improved?
The database for automatic correction will grow with every course to make even better correction suggestions.

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