

34th **C**entral **E**uropean **C**onference on  
Information and **I**ntelligent **S**ystems

# PROJECT SECTION PITCHES

## PROJECT NAME:

Better Employability for Everyone  
with APEX (Bee with Apex)

## INSTITUTION:

Faculty of Organization and  
Informatics

## PRESENTER:

Larisa Hrustek

*20 - 22 September, 2023 / organized by Faculty of Organization  
and Informatics / Dubrovnik, Croatia*



# General about project

- Programme  *Erasmus+, KA220-HED - Cooperation partnerships in higher education*
- Duration  **01. November, 2021 - 31. October, 2023**
- Project partners 
  - *University of Maribor (Faculty of Organizational Science),*
  - *University of Žilina,*
  - *Kozminski University,*
  - *International Hellenic University,*
  - *Johannes Kepler University and*
  - *University of Zagreb (Faculty of Organization and Informatics)*
- Total project funding  **268.362,00 €**

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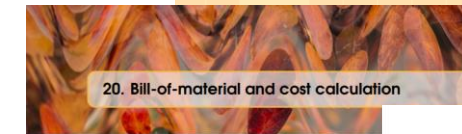
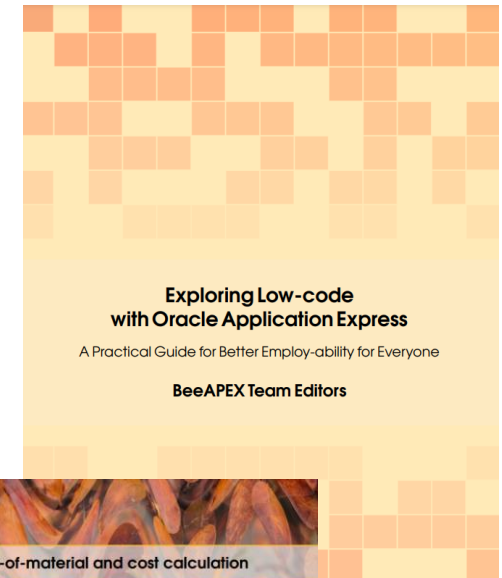


# Project Objectives

- *The BEE with APEX project **supports the digital transformation of higher education institutions** through the development of the digital readiness, resilience and capacity of educators and students.*
- *The main idea is **the modernization of IT curricula and courses** in the areas of front-end and back-end design of applications and databases by building up higher education institutions' capacities and adopting a more inclusive approach to digital literacy.*
- *The modernization of IT curricula and courses is based on **low-code programming with Oracle Apex** for IT, but also for non-IT students, teachers and professionals.*

# Project Results

- **Advanced bachelor's level extra-curricular course on low-code application and database development (Course/curriculum – Design and development)**
- **Short digital course on low-code programming with APEX (Course/curriculum – Design and development)**
- **6 webinars providing labour market insights (Open/online/digital education – Virtual training seminar/webinar)**
- **12 case studies generated from the business sector (Studies / analysis – Case study)**
- **6 academic articles (Learning/teaching/training material – Academic/scientific publication)**



R. LESKOVAR, U. RAIKOVIĆ, A. BAGGIA

## 20.1 Business view of the case

The observed small company, which will be called OSC (10-20 employees) manufacture assemblies, cable bundles, conductors and signal lamps. They also offer assembly of electrical parts and mechanical semi-products. Their customers are bigger companies which house appliances, measuring equipment, control systems, electricity meters, medical devices similar. Customer orders are accepted by phone and e-mail. For simple products and orders as well as for repetitive orders, OSC send confirmation to the customer very quickly. Recently for multi-level assembled products and more complex semi-products have been increase there are dozens of items in one order and each item can include product composed of semi-products and materials. Semi-products may be composed of semi-products and material customers want to receive an offer quickly. Delivering a calculation of the price of the item and semi-products (bill-of-material calculation or short BOM calculation) is demanded in another calculation which for brevity of the chapter is omitted. The scope of the chapter therefore be BOM calculation only. The company owner expressed the following needs:

- the report on products, semi-products, material and possibly customer inquiries
- the report on bill-of-material
- form for editing products, semi-products, material and possibly customer inquiries
- form for editing bill-of-material
- calculation and tree-like presentation of bill-of-material

An application should be usable on phone, tablet or desktop computer.

## 20.2 Problem definition

The company manager faces several issues related to agile response:

- calculation is time consuming, error prone and demanding, however it must be prepared quickly
- over-uses and calculation mistakes can affect business in several ways such as

20.4 Data model 315



Figure 20.5: Generating SQL script by using Quick SQL tool.

Take a look at the lines 26 and 27. These two lines although correct will be edited later. Click Save SQL Script and Review and Run. Replace lines 26 and 27 (create two indexes) and replace with one statement:

```
create unique index ch20_bom_si on ch20_bom (aggreg_id, subpart_id);
```

Now run the script. Two tables and one unique index will be generated. Note that running this script will not be successful if you already run script generated with Oracle Data Modeller. The reason is that data base objects already exist.

To create function enter the following text in SQL Workshop > SQL Commands:

```
create or replace FUNCTION ch20_GET_PRICE (
  p_item_id NUMBER
) RETURN NUMBER
IS
  y_price number;
BEGIN
  SELECT price INTO y_price FROM ch20_psm WHERE ID = p_item_id;
  return y_price;
EXCEPTION
  WHEN OTHERS THEN
    return(-500);
END ch20_GET_PRICE;
```

This function will return the price (product, semi-product, material, inquiry) for given ID. If something unexpected happens with the data base (lost connection, server down, hardware error, no data for specified ID) then negative value -500 will be returned. Select all text and run. You will receive feedback that function is created.

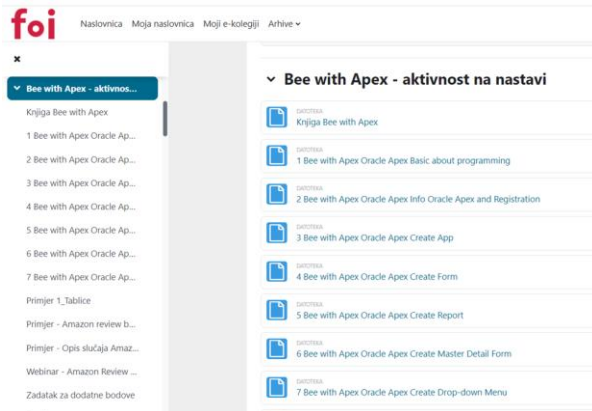
To create procedure to calculate costs of bill of material enter the following text in SQL

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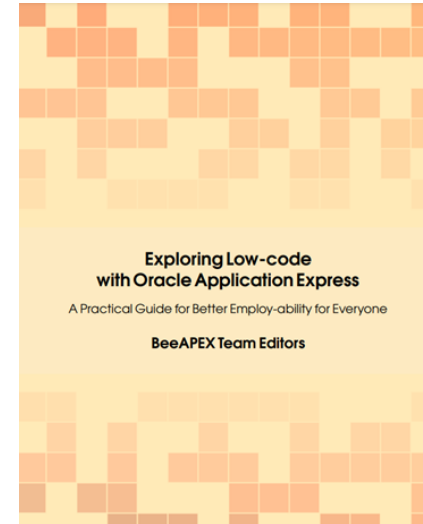
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# Project Results



Advanced and short digital course on low-code programming



## Reports in Oracle Apex

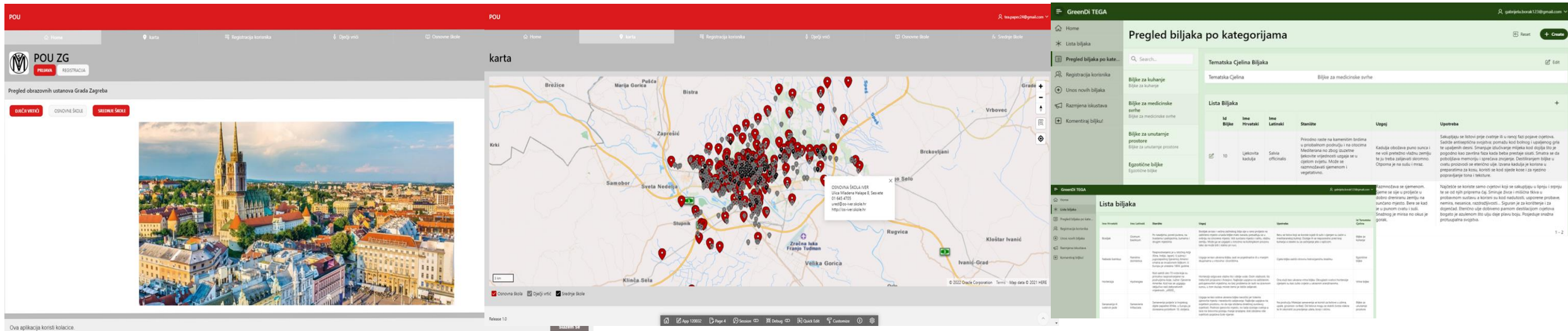


- There are several types of reports that can be created in Oracle Apex, namely: **Interactive Grid**, **Interactive Reports**, **Classic Report** i **Report and Form**.
- Classic Report** → the formatted result of the SQL query.
- the ability to select a table on which to create a report or provide a custom SQL SELECT statement or a PL/SQL function that returns an SQL SELECT statement; with the exception of sorting and simple filtering, end users cannot customize a classic report.

ID	Name	Description	Status	Created	Updated
1	Creating Production Partner Form	Creating the production app that partners with the user	APPROVED	20-AUG-18	20-AUG-18
2	Developing an HR Development	Example of developer who will be developing with the user and get the appropriate training	COMPLETED	20-AUG-18	20-AUG-18
3	Managing Project Dashboard	How the user will monitor the application security training part of the project	IN PROGRESS	20-AUG-18	20-AUG-18
4	Creating a proof of concept that partners with the user more collaboratively	Creating a proof of concept that partners with the user more collaboratively	IN PROGRESS	20-AUG-18	20-AUG-18
5	Configuring HR Development Tool	Configure the HR development tool	COMPLETED	20-AUG-18	20-AUG-18

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# Project Events



**Multiplier Events**



**Training for higher education professors, lecturers and postgraduate teaching assistants**



**Transnational Project Meetings**



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**Thank you for your attention!**

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lhrustek@foi.unizg.hr