Biznis scenario:

U školi postoje četiri sekcije sportska, dramska, likovna i novinarska. Svaka sekcija ima nekoliko aktuelnih projekata. Likovna ima četiri projekta. Za projekte Pikaso, Rubens i Rembrant je mentor Jovana Jovanović, a za projekat Dali je mentor Biljana Jocić. Novinarska sekcija ima dva projekta: vebnovinarstvo i putopisi, mentor Anja Mišić.





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ako tabela ima kompozitni (složeni) primarni ključ, bira se Not populated pa bi se

u sledećim koracima izabrati dve kolone koje čine složeni primerni ključ (jedna kolona je Primary Key, a druga je Composite Primary Key)

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> Available Columns > Example Check Constraints

Constraints Use this page to define constraints for your table. You can create multiple constraints of each type but must Add each constraint. Only those constraints displayed in the report at the top of the page will be included in the resulting create table statement.

Check Constraint A check constraint is a validation check on one or more columns within the table. No value can be inserted or updated in a table which violates an enabled check constraint.

A unique constraint designates a column or a combination of columns as a unique key. To satisfy a unique constraint, no two rows in the table can have the same values for the specified columns.

Cancel

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Table name:	SEKCIJE 🕜	
> SQL		
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Primary Key

A primary key allows each row in a table to be uniquely identified.

If you select to populate your primary key from a new sequence, you will be prompted to enter the new sequence's name. If you select to populate your primary key from an existing sequence, you will be prompted to select the sequence. Both these methods result in the generation of a trigger against your table. You can also select to not populate your primary. This is the only method that allows you to define a composite primary key made up of more than two columns.

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	SYS_C003852428	Check	"ID_SEKCIJE" IS NOT NULL	-	-	-	ENABLED	10/08/2017 03:42:42 AM	-	-
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Constraints pa na create

prvo se unese u Constraint Name (naziv ograničenja): PROJEKTI_SEKCIJE_FK

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zatim se promeni Constraint Type (tip ograničenja): Foreign Key

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* Reference Table Name	- Select Reference Table -	
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klik na ID_SEKCIJE da se izabere ta kolona pa klik na >



izabere se Reference Table Name: SEKCIJE

unutar Reference Table Column klikne se na ID_SEKCIJE pa na >

* Reference Table Name	SEKCIJE	\$ ⊘	
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sada se u spisku ograničenja pojavljuje i novo sa definisanim stranim ključem

klikom na model:



Sada se može kreirati aplikacija.

Aplikacija će omogućiti da preko obrazaca se lakše unose podaci u bazu podataka a preko izveštaja se dobijaju željeni izabrani podaci preko sql upita.

```
CREATE TABLE "PROJEKTI"
         "ID_PROJEKTA" NUMBER(6,0),
"NAZIV" VARCHAR2(40) NOT NULL ENABLE,
    (
          "PROFESOR" VARCHAR2(30),
"ID_SEKCIJE" NUMBER(5,0) NOT NULL ENABLE,
CONSTRAINT "PROJEKTI_PK" PRIMARY KEY ("ID_PROJEKTA")
  USING INDEX ENABLE
   )
1
ALTER TABLE "PROJEKTI" ADD CONSTRAINT "PROJEKTI_FK" FOREIGN KEY ("ID_SEKCIJE")
REFERENCES "SEKCIJE" ("ID_SEKCIJE") ENABLE
/
CREATE OR REPLACE TRIGGER "BI_PROJEKTI"
  before insert on "PROJEKTI"
  for each row
begin
  if :NEW."ID PROJEKTA" is null then
   select "PROJEKTI_SEQ".nextval into :NEW."ID_PROJEKTA" from sys.dual;
  end if;
end;
ALTER TRIGGER "BI_PROJEKTI" ENABLE
```

```
CREATE TABLE "SEKCIJE"
       "ID_SEKCIJE" NUMBER(5,0),
  (
       "NAZIV" VARCHAR2(20) NOT NULL ENABLE,
        CONSTRAINT "SEKCIJE_PK" PRIMARY KEY ("ID_SEKCIJE")
 USING INDEX ENABLE
  )
/
CREATE OR REPLACE TRIGGER "BI_SEKCIJE"
 before insert on "SEKCIJE"
 for each row
begin
 if :NEW."ID_SEKCIJE" is null then
   select "SEKCIJE_SEQ".nextval into :NEW."ID_SEKCIJE" from sys.dual;
 end if;
end;
1
ALTER TRIGGER "BI_SEKCIJE" ENABLE
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izbor Application Builder



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		Theme Type	Standard	
		Theme	Universal Theme	
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Qv	Go 🔠 II Actions ∨						Create Page >	
1 - Home	2 - Sekcije 3 - S	kcije 4 - Proj	¢	5 - Projekti				

Sada je potrebno dodati listu sa spiskom sekcija radi lakšeg popunjavanja stranog ključa u tabeli projekti.

F	Run Application	Supporting Objects	Shared Components

klik na Shared Components

Other	Components
ß	List of Values
	Plug-ins
	Component Settings
	Shortcuts

klik na List of Values (kartica Other Components)



klik na Create

	Create List of Values	×
Source	0	
A List of Values is a static or dynamic a select list, a check box, a radio grou	definition used to display a specific type of page item, such as popup lis p, or multiple select lists.	its of values,
Create List of Values:	 From Scratch ⑦ As a Copy of an Existing List of Values 	
Cancel		Next >

klik na next

	Create List of Values	×
0	•	
	Name and Type	
Static lists are based on predefined that selects values from a table.	pairs of display and return values. Dynamic lists are based on a SQL query you write	e
* Name	SEKCIJE_LOV	
Type:	O Static 🕜	
	Dynamic	
< Cancel	Nex	a >

ovde se definiše da će SEKCIJE_LOV biti dinamička lista i da će se stalno popunjavati iz tabele SEKCIJE

klik na next

	Create List of Values
0	Query or Static Values
Enter a SQL query that returns two o a list of values. This column should b return value. The return value is the v aliased if it includes any operations. application or page items.	olumns. The first column is the display value. The display value is the value you see in e aliased and a different name then the return column. The second column is the value returned when the display value is selected. The return column should be Use bind variable syntax within your SQL query to reference the session state of the
List of Values Name:	SEKCIJE_LOV ③
Query (SELECT DISPLAY, VALUE, RETURNL VALUE FROM_):	select ename as d, from emp order by 1
	Create Dynamic List of Values
> Examples	
< Cancel	Create List of Values

sada se upit izmeni na sledeći način:

```
select naziv d,
id_sekcije r
from sekcije
order by 1
```

klik na Create List of Values

↑ Application 1353 > Shared Components > Lists of Values										
✓ Dynamic List of Values created. ×										
Lists of Values Edit Nu	Lists of Values Edit Null Text Locally Defined Grid Edit Conditional Entries Subscription Utilization History									
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klik na Application broj_aplikacije u gornjem levom uglu

Application 1353					(\mathcal{P})
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1 - Home	2 - Sekcije	3 - Sekcije	4 - Projekti	5 - Projekti	
					1 - 5

Sada treba obezbediti da gde postoji strani ključ (forma 5 – Projekti), postoji unos iz upravo kreirane dinamičke liste

klik na 5 – Projekti stranicu

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klik na polje za unos stranog ključa, P5_ID_SEKCIJE



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kod Page Item sa desne strane izabrati na Type, Popup LOV

a zatim pronaći List of Values (donji deo desnog spiska)

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na Type izabrati Shared Component

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a za List of Values (sledeća stavka ispod) izabrati SEKCIJE_LOV

klik na Save u gornjem desnom uglu ekrana

vratiti se na Application broj_aplikacije

Application 1353 - Aplikacija_skols	ke_sekcije		
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1 - Home	2 - Sekcije	3 - Sekcije	4 - Projekt

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Ovo je početna stranica na kojoj se nalaze linkovi prema dve stranice, Sekcije i Projekti

klik na link Sekcije

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ponoviti postupak i dodati nazive sledeće tri sekcije, pa se dobija:

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klik na Projekti

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vidi se da se pri izboru id Sekcije popjavljuje padajući meni na posebnom prozoru

sa njega se izabere željene sekcija, sada je to Likovna:

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sada uneti i preostale projekte

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	1	1	Rembrant	Jovana Jovanovic	1		
	1	2	Dali	Biljana Jocic	1		
	1	3	Putopisi	Anja Misic	3		
	1	4	Rubens	Jovana Jovanovic	1		
	1	5	Pikaso	Jovana Jovanovic	1		
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klik na Home na dnu ekrana

Application Builder	SQL Workshop	Team Development	nt	Packaged Apps	About Application Exp Web application tool that lets yo create application web browser ar programming e can develop and applications that secure.	ress is a rapid n development u share data and ons. Using only a nd limited xperience, you d deploy t are fast and
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Klik na SQL Workshop a zatim na SQL Commands

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Enter SQL s	tatement or	PL/SQL comm	and and click I	Run to see the result	ts.							

R rs_a861_sql_t01_admin	😫 rs_a861_sql_t01	🕀 en	Copyright © 1999, 2015, Oracle. All rights reserved.	Application Express 5.0.3.00.03

potrebno je napisati SQL upite koje vraćaju sledeće informacije iz baze podataka:

- 1) spisak svih projekata Rembrant, Dali, Pikaso, Putopisi, Veb-novinarstvo, Rubens
- 2) spisak svih projekata novinarske sekcije Putopisi, Veb-novinarstvo
- spisak svih projekata kojima je mentor Jovana Jovanović i čiji naziv počinje na R Rembrant, Rubens
- 4) Broj projekata svake sekcijeLikovna 4, Novinarska 2, Sportska 0, Dramska 0

1) uneti sledeći sql upit:

SELECT naziv FROM projekti



klik na Run

Results	Explain	Describe	Saved SQL	History	
				NAZIV	
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Dali					
Putopis	i				
Rubens					
Pikaso					
Veb-no	vinarstvo				
6 rows re	turned in 0.0	0 seconds	Download		

2) uneti sledeći sql upit:

SELECT projekti.naziv

FROM projekti JOIN sekcije USING (id_sekcije)

WHERE UPPER (sekcije.naziv) = 'NOVINARSKA'

Rows	10		\$		Clear Command	Find Tables					
SELECT projekti.naziv FROM projekti JOIN sekcije USING (id sekcije) WHERE UPPER (<u>sekcije.naziv</u>) = 'NOVINARSKA'											
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Veb-novinar	stvo										
2 rows returne	d in 0.01 seconds	Download									

3) uneti sledeći sql upit:

SELECT naziv

FROM projekti

WHERE profesor = 'Jovana Jovanovic' AND naziv LIKE 'R%'

	Rows	10		\$?	Clear Command	Find Tables		
SI FI W	ELECT na ROM proj HERE pro	aziv jekti ofesor = 'Jo	ovana Jovano	ovic' AND na:	ziv LIKE 'R%'			
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	Ruben	s						
	2 rows re	eturned in 0.0	01 seconds	Download				
4)	4) uneti sledeći sql upit:							
SI	SELECT sekcije.naziv, COUNT (id_projekta)							
FI	FROM projekti JOIN sekcije USING (id_sekcije)							

GROUP BY sekcije.naziv

ORDER BY sekcije.naziv

Rows 10 Clear	Command Find Tables						
SELECT sekcije.naziv, COUNT (id_projekta) FROM projekti JOIN sekcije USING (id_sekcije) GROUP BY sekcije.naziv ORDER BY sekcije.naziv							
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NAZIV COUNT(ID_PROJEKTA)							
Likovna	4						
Novinarska 2							
2 rows returned in 0.01 seconds Download							

5) uneti sledeći sql upit:

SELECT sekcije.naziv, COUNT (id_projekta) "Broj projekata"

FROM projekti RIGHT OUTER JOIN sekcije USING (id_sekcije)

GROUP BY sekcije.naziv

ORDER BY "Broj projekata" DESC

				lication Builder 🖂	SQL Worksho		
Rows	10	\$		Clear Command	Find Tables		
SELECT <u>sekcije.naziv</u> , COUNT (<u>id projekta</u>) "Broj projekata" FROM projekti RIGHT OUTER JOIN sekcije USING (<u>id sekcije</u>) GROUP BY sekcije.naziv ORDER BY "Broj projekata" DESC							

Results Explain Describe Saved SQL History	
NAZIV	Broj projekata
Likovna	4
Novinarska	2
Sportska	0
Dramska	0

4 rows returned in 0.01 seconds Download