Oracle APEX

Lab Objective
Familiarize students with a few intermediate application development options in Oracle APEX – a tool to develop oracle-based database application.

Lab Outcome
After completing this lab successfully, students will be able to:
1. **Create and Use sequence** – used to generate a number automatically**.**
2. **Create** drop down box.
3. **Insert and View images** in forms and reports, respectively.
4. **Create and Use custom authentication and authorization.**

Psychomotor Learning Levels
This lab involves activities that encompass the following learning levels in psychomotor domain.

Level	Category	Meaning	Keywords
P1	Imitation	Copy action of another; observe and replicate.	Relate, Repeat, Choose, Copy, Follow, Show, Identify, Isolate.
P2	Manipulation	Reproduce activity from instruction or memory	Copy, response, trace, Show, Start, Perform, Execute, Recreate.

Instructions
- Follow the instructor during the class.
- A simple step-by-step tutorial can be found in this link. https://goo.gl/2m2Vnr
- A series of video tutorial on the same project can be found here: https://goo.gl/BT93w4
- A tutorial to include images in report can be found here: https://goo.gl/2CPgAX
- A tutorial for custom authentication and authorization can be found here: https://goo.gl/fAWabg

Lab Activities
1. **Log into your existing Oracle APEX account.**
2. **Create a table player and country with the following attributes.**

Player	Country
player_id (number, primary key)	country_code (number, primary key)
player_name (varchar2)	country_name (varchar2)
country_code (number, foreign key)	file_lob (blob)
file_lob (blob)	file_name (varchar2)
file_name (varchar2)	file_mimetype (varchar2)
file_mimetype (varchar2)	file_updatedate (varchar2)
file_updatedate (varchar2)	file_characterset (varchar2)
file_characterset (varchar2)	

3. **Creating appropriate sequences.**
   ```
   Create sequence <sequence_name> start with <value> increment by <value>;
   ```
4. **Creating the initial application with a form and a report for both tables.**

5. **Create a drop-down box for player form to display country name.**

6. **Insert and view images. Sample code is shown below.**
   Details can be found here: https://goo.gl/2CPgAX

```
select "ROWID",
decode(nvl(dbms_lob.getlength(FILE_LOB),0),0,null,
       '<img alt="Altr text" src="' ||
apex_util.get_blob_file_src('P9_FILE_LOB',ROWID) || '" width = "75"/>')
"IMAGE",
"FILE_NAME",
"FILE_MIMETYPE",
"FILE_UPDATEDATE",
"FILE_CHARACTERSET"
from "#OWNER#"."PICTURES"
```

7. **Create appropriate authentication and authorization.**
   i)   Create a my_users table. This table includes the users who can access this application.

```
create table my_users (
user_id number,
user_name varchar2(20),
user_password varchar2(20),
user_activated number default 0,
primary key(user_id));
```

   ii)   Creating a sequence
```
create sequence my_users_seq start with 30001 increment by 1;
```

   iii)   Insert one record at least
```
insert into my_users values
(my_users_seq.nextval,'admin','admin123',1);
```

   iv)   Write this function in appropriate place (Shard Components) [Details in the class]
```
FUNCTION my_auth (
    p_username IN VARCHAR2,
    p_password IN VARCHAR2)
RETURN BOOLEAN AS
    found number := 0;
BEGIN
  SELECT 1 into found FROM MY_USERS
             WHERE upper(USER_NAME) = upper(p_username)
             AND upper(USER_PASSWORD) = upper(p_password)
             AND USER_ACTIVATED = 1;
    RETURN TRUE;
EXCEPTION
    WHEN NO_DATA_FOUND THEN
  RETURN FALSE;
END;
```