

# LAB 3

**IMPORTANT.** You must save all your work in a way that you are able to present them to teacher during the evaluation discussion. You could use for instance GIT.  
You also need to have working developer environment where you can run the assignments.

Objectives in this lab:

- Menus
- Using activities
- Resources

## 1. Menus

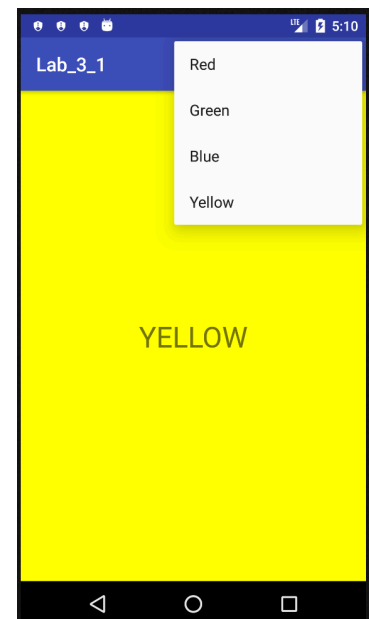
Create a new project in Android Studio.

Read through this tutorial <https://developer.android.com/guide/topics/ui/menus>

Create a menu (with xml) which contains following items:

- Red
- Green
- Blue
- Yellow

When user selects the colour from the menu, app changes the background colour of the view and the text accordingly.



## 2. External Activities

Now we practice a bit how to use external activities on Android. Read this document first: <https://developer.android.com/training/basics/intents/sending>

Create a new app and create an UI where you can

- Open Oamk Kotkantie campus location on a map
- Open a telephone with prefilled Oamk telephone number
- Open any web address (For example Oamk website)

- See Oamk's beautiful logo



### 3. Zoo

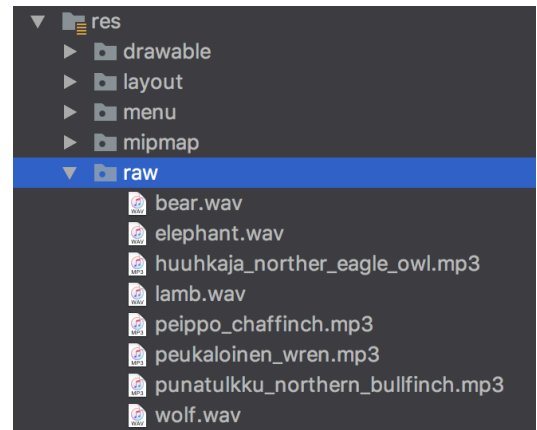
Create an app where user can listen different animal sounds. User can switch between mammals or birds.

You can find sound & image files from here: <http://www.oamk.fi/~vetapani/Animals.zip>

To play sounds you must place audio files to your project's res/raw folder. (Just copy files to that folder using file explorer.) If you don't have raw folder, you have to create it manually.

Image files go to drawable folder.

You can play sounds using this code:



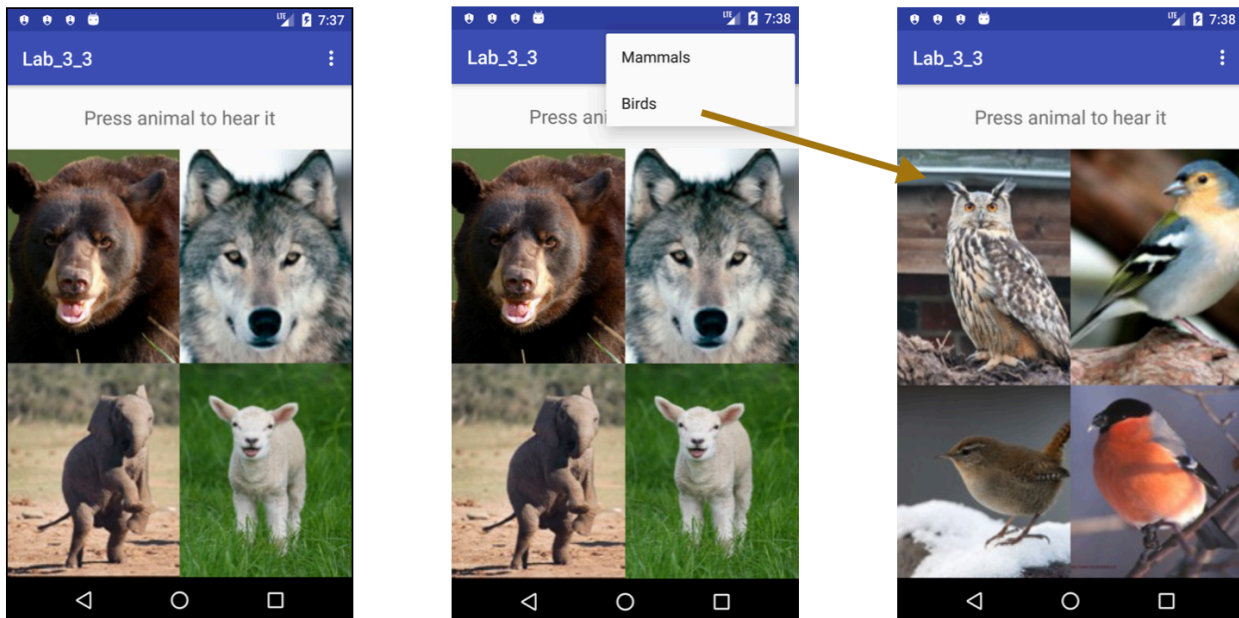
```
MediaPlayer mediaPlayer;
mediaPlayer = MediaPlayer.create(this, R.raw.bear);
mediaPlayer.start();
```

We should also release mediaPlayer's resource using release() method, but in this exercise we can forget that to keep this exercise simple.

You can also change ImageView's image using this code:

```
((ImageView)findViewById(R.id.imageView1)).setImageResource(R.drawable.bear);
```

User can switch between mammals and birds via options menu.



## 4. Egg Timer

Next we learn how to have multiple activities in one app. Your objective is to create an egg timer app.

Create new android application and implement UI for setting the timer.

Then, you should create other activity and launch it when user presses the start button. This other activity will show the countdown and will play an alarm sound when timer reaches value 0.

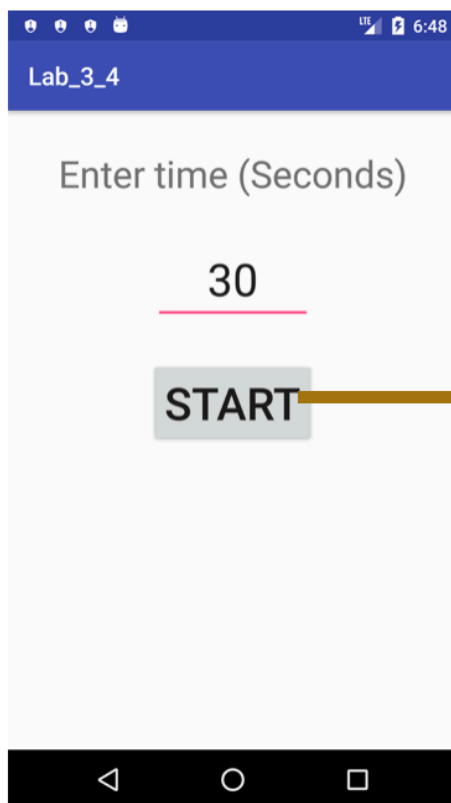
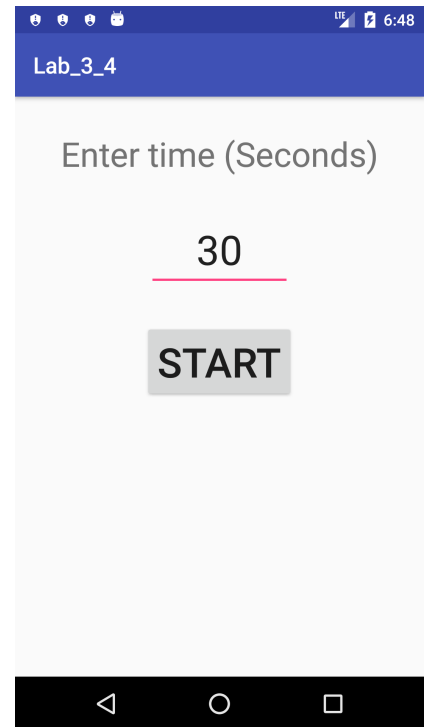
When the timer is done you can also close this other activity.

You will find help from this document:

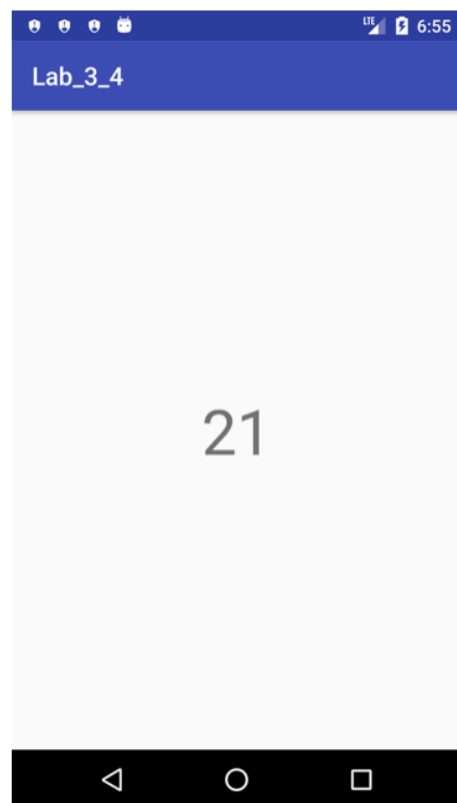
<https://developer.android.com/training/basics/firstapp/starting-activity>

You also need to use timer such as CountdownTimer:

<https://developer.android.com/reference/android/os/CountDownTimer>



MainActivity



TimerCountdownActivity