ANDROID FUNDAMENTALS

Seven Advanced Academy

Application Menus

Lesson 11

Contents

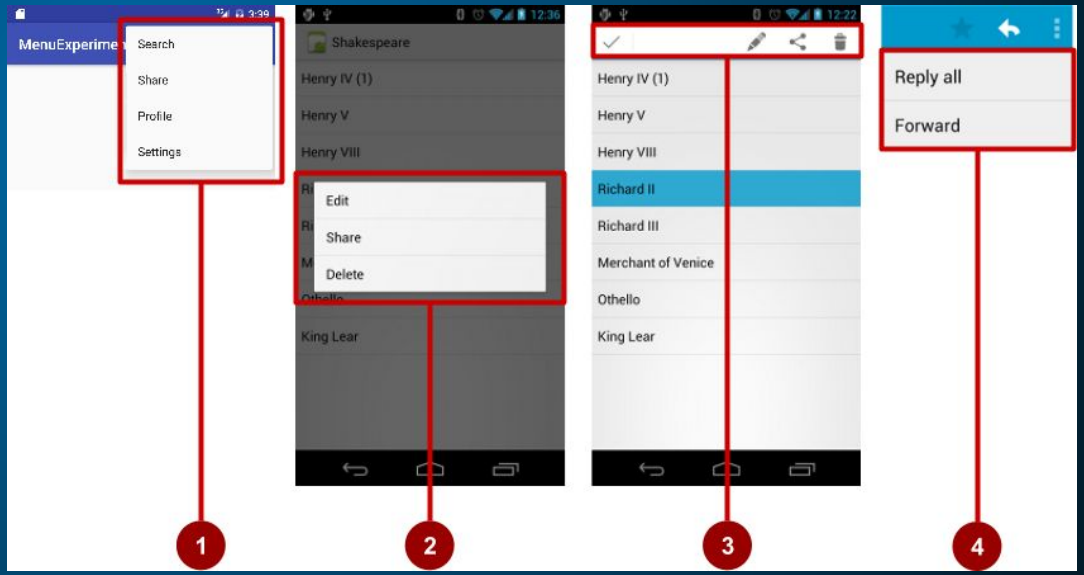
- App Bar with Options Menu
- Contextual menus
- Popup menus

Tasks

- Continue adding features to the Droid Cafe project from the previous practical.
- Add menu items to the options menu.
- Add icons for menu items to appear in the action bar.
- Connect menu item clicks to event handlers that process the click events.

Types of Menus

1. App bar with options menu
2. Contextual menu
3. Contextual action bar
4. Popup menu

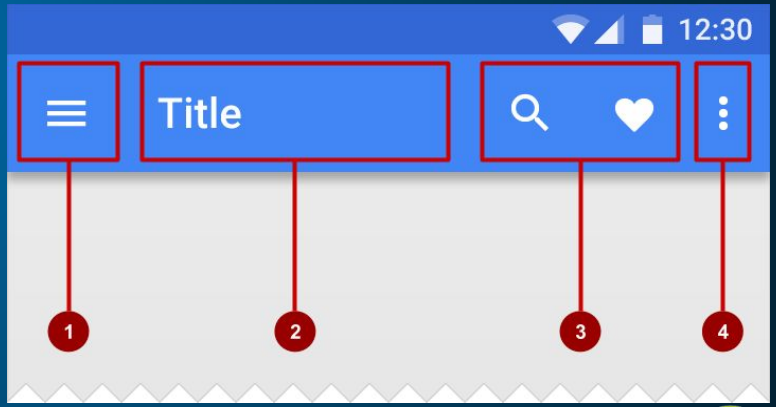


App Bar with Options Menu

What is the App Bar?

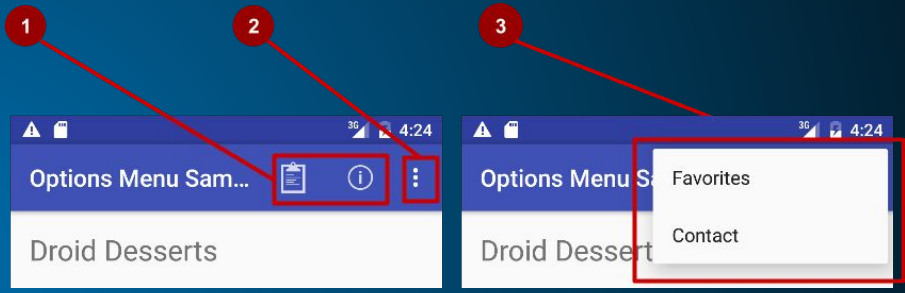
Bar at top of each screen—(usually) the same for all screens

- Nav icon to open navigation drawer
- Title of current activity
- Icons for options menu items
- Action overflow button for the rest of the options menu



What is the Options Menu?

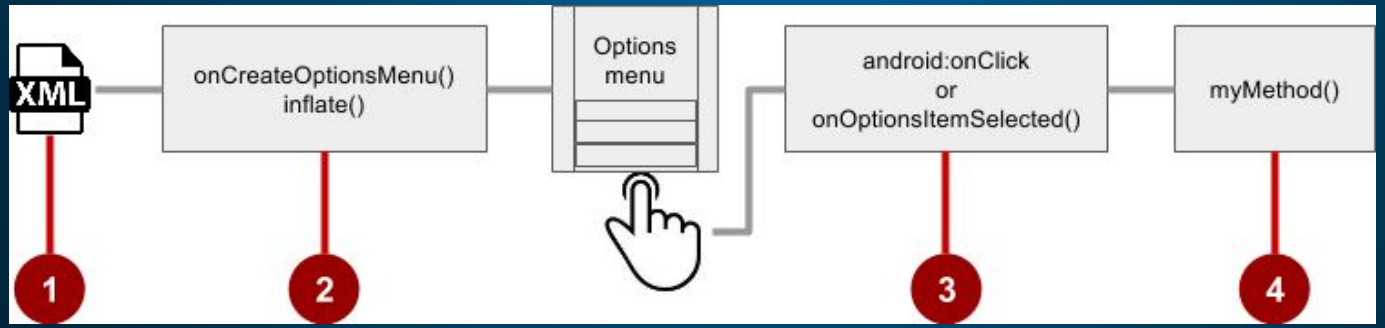
- Action icons in the app bar for important items (1)
- Tap the three dots, the "action overflow button" to see the options menu (2)
- Appears in the right corner of the app bar (3)
- For navigating to other activities and editing app settings



Adding Options Menu

Steps to implement Options Menu

1. XML menu resource (menu_main.xml)
2. onCreateOptionsMenu() to inflate the menu
3. onClick attribute or onOptionsItemSelected()
4. Method to handle item click



Create Menu Resource

1. Create menu resource directory
2. Create XML menu resource (menu_main.xml)
3. Add an entry for each menu item

```
<item  android:id="@+id/option_settings"
      android:title="@string/settings" />
 <item  android:id="@+id/option_toast"
      android:title="@string/toast" />
```

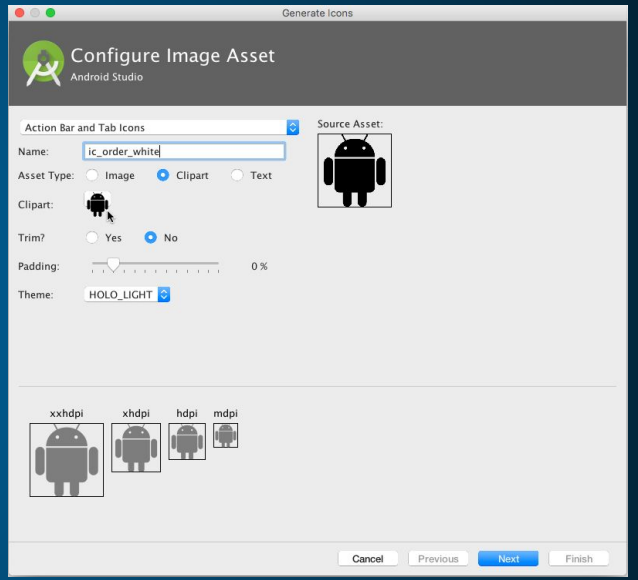
Inflate Options Menu

Override onCreateOptionsMenu() in main activity

```
@Override
public boolean onCreateOptionsMenu(Menu menu) {
   getMenuInflater().inflate(R.menu.menu_main, menu);
   return true;
}
```

Add Icons for Menu Items

1. Right-click **drawable**
2. Choose **New > Image Asset**
3. Choose **Action Bar and Tab Items**
4. Edit the icon name
5. Click clipart image, and click icon
6. Click **Next**, then **Finish**



Add Menu Item Attributes

```
<item android:id="@+id/action_order"
    android:icon="@drawable/ic_toast_dark"
    android:title="@string/toast"
    android:titleCondensed="@string/toast_condensed"
    android:orderInCategory="1"
    app:showAsAction="ifRoom" />
```

Override onOptionsItemSelected()

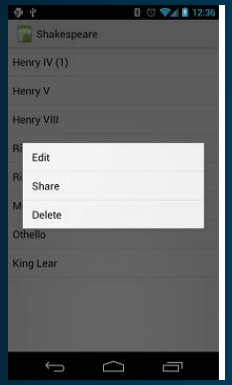
```
@Override
public boolean onOptionsItemSelected(MenuItem item) {
  switch (item.getItemId()) {
    case R.id.action_order:
      showOrder();
      return true;
       default:
          return super.onOptionsItemSelected(item);
     }
  }
```

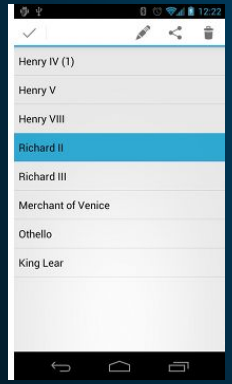
Contextual Menus

What are Contextual Menus?

- Allow users to perform an action on a selected view or content
- Can be deployed on any View object, but most often used for items in a RecyclerView, GridView, or other view collection

Types of Contextual Menus

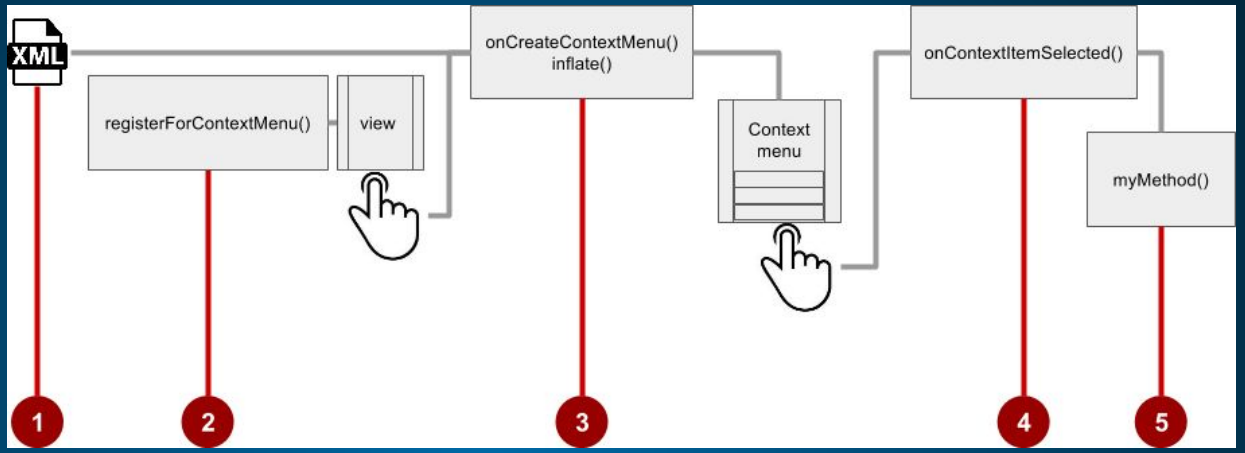




- Floating context menu—floating list of menu items when long-presses on a view element
  - User can modify the view element or use it in some fashion
  - Users perform a contextual action on one view element at a time
- Contextual action mode—temporary action bar in place of or underneath the app bar
  - Action items affect the selected view element(s)
  - Users can perform action on multiple view elements at once

Floating Context Menu

Steps



1. Create XML menu resource file and assign appearance and position attributes
2. Register view to use a context menu using registerForContextMenu()
3. Implement onCreateContextMenu() in the activity or fragment to inflate the menu
4. Implement onContextItemSelected() to handle menu item clicks
5. Create a method to perform an action for each context menu item

Create Menu Resource

- Create XML menu resource (menu_context.xml)

```
<item
  android:id="@+id/context_edit"
  android:title="@string/edit"
  android:orderInCategory="10"/>

<item
  android:id="@+id/context_share"
  android:title="@string/share"
  android:orderInCategory="20"/>
```

Register a View to a Context Menu

- in onCreate() of the activity
- registers View.OnCreateContextMenuListener
- Does not specify which context menu!

```
TextView article_text = (TextView)
findViewById(R.id.article);
registerForContextMenu(article_text);
```

Implement onCreateContextMenu()

- Specifies which context menu

```
@Override
public void onCreateContextMenu(ContextMenu
menu, View v,
                    ContextMenu.ContextMenuInfo
menuInfo) {
  super.onCreateContextMenu(menu, v, menuInfo);
  MenuInflater inflater = getMenuInflater();
  inflater.inflate(R.menu.menu_context, menu);
}
```

Implement onContextItemSelected()

```
@Override
public boolean onContextItemSelected(MenuItem
item) {
   switch (item.getItemId()) {
      case R.id.context_edit:
         editNote();
         return true;
      default:
         return super.onContextItemSelected(item);
     }
}
```

Contextual Action Bar

What is Action Mode?

- ActionMode is a UI mode that lets you replace parts of the normal UI interactions temporarily
- For example, selecting a section of text or long-pressing an item could trigger action mode

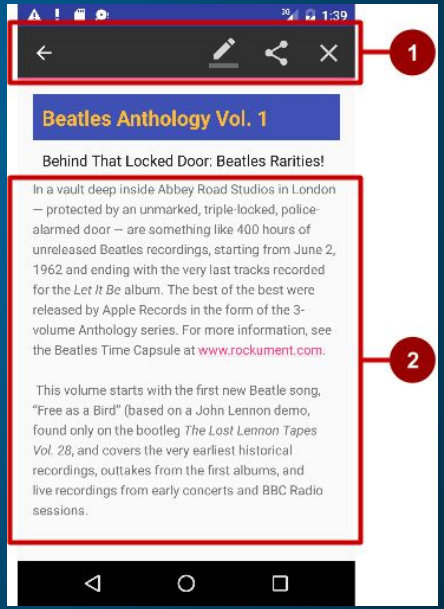
Action Mode has a Lifecycle

- Start it with startActionMode(), for example, in the listener
- ActionMode.Callback interface provides the lifecycle methods that you can override
  - onCreateActionMode(ActionMode, Menu) once on initial creation
  - onPrepareActionMode(ActionMode, Menu) after creation and any time ActionMode is invalidated
  - onActionItemClicked(ActionMode, MenuItem) any time a contextual action button is clicked
  - onDestroyActionMode(ActionMode) when the action mode is closed

What is a Contextual Action Bar?

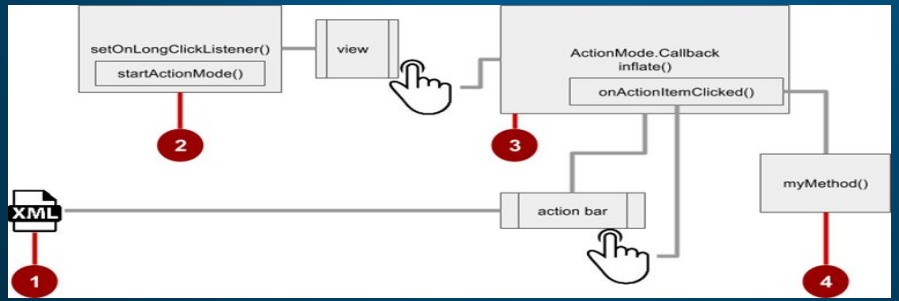
Long-tap on the view shows contextual action bar

1. Contextual action bar with actions
    - Edit, Share, and Delete
    - Done (left arrow icon) on the left side
2. View on which long press triggers the contextual action bar
    - Action bar is available until user taps Done



Steps for Contextual Action Bar

1. Create XML menu resource file and assign icons for items
2. setOnLongClickListener() on view that triggers the contextual action bar and call startActionMode() to handle click
3. Implement ActionMode.Callback interface to handle ActionMode lifecycle; include action for a menu item click in onActionItemClicked() callback
4. Create a method to perform an action for each context menu item



Use setOnLongClickListener

```
private ActionMode mActionMode;
In onCreate
  View view = findViewById(article);
  view.setOnLongClickListener(new View.OnLongClickListener() {
    public boolean onLongClick(View view) {
      if (mActionMode != null) return false;
      mActionMode =

MainActivity.this.startActionMode(mActionModeCallback);
      view.setSelected(true);
      return true;
    }
  });
```

Implement mActionModeCallback

```
public ActionMode.Callback mActionModeCallback =
   new ActionMode.Callback() {
    // Implement action mode callbacks here
};
```

Implement onCreateActionMode

```
@Override
public boolean onCreateActionMode(ActionMode mode, Menu
menu) {
   MenuInflater inflater = mode.getMenuInflater();
   inflater.inflate(R.menu.menu_context, menu);
   return true;
}
```

Implement onPrepareActionMode

- Called each time the action mode is shown
- Always called after onCreateActionMode, but may be called multiple times if the mode is invalidated

```
@Override
public boolean onPrepareActionMode(ActionMode mode,
Menu menu) {
   return false; // Return false if nothing is done.
}
```

1. Create menu resource directory
2. Create XML menu resource (menu_main.xml)
3. Add an entry for each menu item

```
<item  android:id="@+id/option_settings"
      android:title="@string/settings" />
 <item  android:id="@+id/option_toast"
      android:title="@string/toast" />
```

Create menu resource

- Called when users selects an action
- Handle clicks in this method

```
@Override
public boolean onActionItemClicked(ActionMode mode, MenuItem
item) {
  switch (item.getItemId()) {
     case R.id.goodbyetextview:
       Toast.makeText(getApplicationContext(), "Menu Toast",
Toast.LENGTH_SHORT).show();
       mode.finish(); // Action picked, so close the action bar
       return true;
     default:
       return false;
  }
}
```

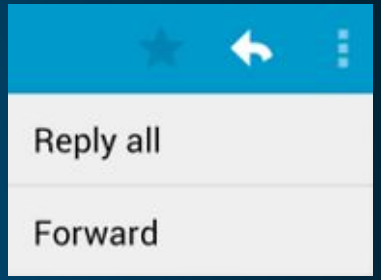
Implement onDestroyActionMode

- Called when user exits the action mode

```
@Override
public void onDestroyActionMode(ActionMode mode) {
   mActionMode = null;
}
```

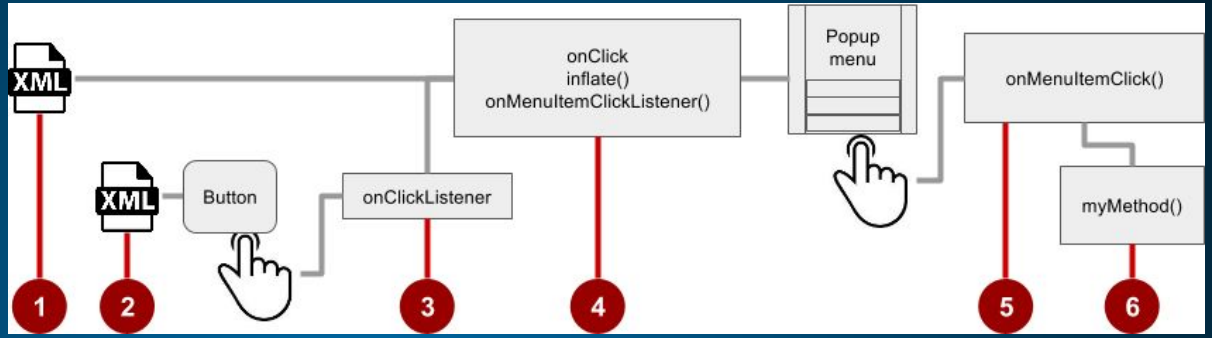
Popup Menu

What is a Popup Menu?



- Vertical list of items anchored to a view
- Typically anchored to a visible icon
- Actions should not directly affect view content
  - The options menu overflow that opens Settings
  - For example, in an email app, Reply All and Forward are related to the email message, but don't affect or act on the message

Steps



1. Create XML menu resource file and assign appearance and position attributes
2. Add an ImageButton for the popup menu icon in the XML activity layout file
3. Assign onClickListener to the button
4. Override onClick() to inflate the popup and register it with onMenuItemClickListener()
5. Implement onMenuItemClick()

Add an ImageButton

```
<ImageButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/button_popup"
    android:src="@drawable/@drawable/ic_action_popup"/>
```

Assign onClickListener to button

```
private ImageButton mButton =
    (ImageButton) findViewById(R.id.button_popup);

In onCreate:

mButton.setOnClickListener(new View.OnClickListener() {
    // define onClick
});
```

Implement onClick

```
@Override
public void onClick(View v) {
   PopupMenu popup = new PopupMenu(MainActivity.this,
mButton);
   popup.getMenuInflater().inflate(
      R.menu.menu_popup, popup.getMenu());
   popup.setOnMenuItemClickListener(
      new PopupMenu.OnMenuItemClickListener() {
      // implement click listener
    });
popup.show();
}
```

Implement onMenuItemClick

```
public boolean onMenuItemClick(MenuItem item) {
  switch (item.getItemId()) {
     case R.id.option_toast:
        Toast.makeText(getApplicationContext(), "Popup Toast",
              Toast.LENGTH_SHORT).show();
        return true;
     default:
        return false;
  }
}
```

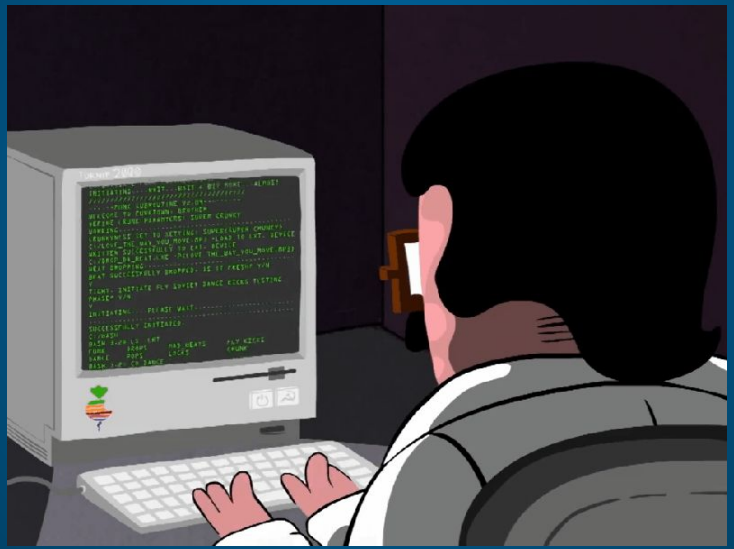
Let’s code

App Overview

In the previous practical you created an app called Droid Cafe, shown in the figure below, using the Basic Activity template. This template also provides a skeletal options menu in the app bar at the top of the screen. You will learn how to:

- Set up the app bar.
- Modify the options menu.
- Add icons for some of the menu items.
- Show the icon for the menu item in the app bar rather than the overflow menu.
- Show the item in the overflow menu, depending on the screen size and orientation.

Demo : Using an Options Menu



Source Code

- https://github.com/google-developer-training/android-fundamentals/tree/master/DroidCafePart1
- https://github.com/google-developer-training/android-fundamentals/tree/master/DroidCafePart2
- https://github.com/google-developer-training/android-fundamentals/tree/master/DroidCafePart3

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- https://developer.android.com/guide/topics/resources/menu-resource.html