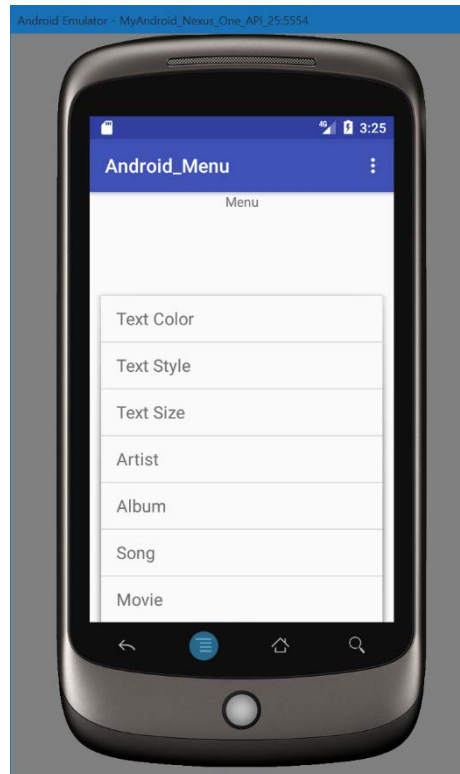




# android



## Menu 구현





# 학습 목표

## 교육 목표

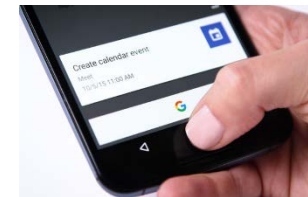
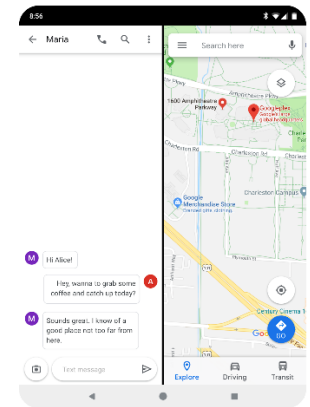
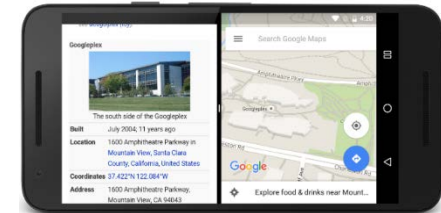
❖ Menu

❖ Options Menu

◆ Icon Menu

◆ Expanded Menu

❖ Context Menu





# Menu (1)

## ■ Menu

### ❖ 기능

- ◆ Activity에 표시할 메뉴를 나타내는 기능

### ❖ 종류

#### ◆ Options menu

- Shortcut, item icon을 지원하지 않음

#### ◆ Context menu

- Item check mark 지원하지 않음
- Condensed title 지원
- Expanded menus 지원

#### ◆ Sub menu

- item icon을 지원하지 않음

public interface

## Menu

android.view.Menu

► Known Indirect Subclasses  
[ContextMenu](#), [SubMenu](#)





# Menu (2)

## ■ Constants

Constants		
int	<code>CATEGORY_ALTERNATIVE</code>	Category code for the order integer for items/groups that are alternative actions on the data that is currently displayed -- or/add this with your base value.
int	<code>CATEGORY_CONTAINER</code>	Category code for the order integer for items/groups that are part of a container -- or/add this with your base value.
int	<code>CATEGORY_SECONDARY</code>	Category code for the order integer for items/groups that are user-supplied secondary (infrequently used) options -- or/add this with your base value.
int	<code>CATEGORY_SYSTEM</code>	Category code for the order integer for items/groups that are provided by the system -- or/add this with your base value.
int	<code>FIRST</code>	First value for group and item identifier integers.
int	<code>FLAG_ALWAYS_PERFORM_CLOSE</code>	Flag for <code>performShortcut(int, KeyEvent, int)</code> : if set, always close the menu after executing the shortcut.
int	<code>FLAG_APPEND_TO_GROUP</code>	Flag for <code>addIntentOptions(int, int, int, ComponentName, Intent[], Intent, int, MenuItem[])</code> : if set, do not automatically remove any existing menu items in the same group.
int	<code>FLAG_PERFORM_NO_CLOSE</code>	Flag for <code>performShortcut(int, KeyEvent, int)</code> : if set, do not close the menu after executing the shortcut.
int	<code>NONE</code>	Value to use for group and item identifier integers when you don't care about them.





# Menu (3)

## Method

```
public abstract MenuItem add (int titleRes)
```

Add a new item to the menu. This item displays the given title for its label.

### Parameters

*titleRes* Resource identifier of title string.

### Returns

The newly added menu item.

### Public Methods

abstract MenuItem	<b>add</b> (int titleRes) Add a new item to the menu.
abstract MenuItem	<b>add</b> (int groupId, int itemId, int order, CharSequence title) Add a new item to the menu.
abstract MenuItem	<b>add</b> (int groupId, int itemId, int order, int titleRes) Variation on <b>add</b> (int, int, int, CharSequence) that takes a string resource identifier instead of the string itself.
abstract MenuItem	<b>add</b> (CharSequence title) Add a new item to the menu.
abstract int	<b>addIntentOptions</b> (int groupId, int itemId, int order, ComponentName caller, Intent[] specifics, Intent intent, int flags, MenuItem[] outSpecificItems) Add a group of menu items corresponding to actions that can be performed for a particular Intent.
abstract SubMenu	<b>addSubMenu</b> (int titleRes) Add a new sub-menu to the menu.
abstract SubMenu	<b>addSubMenu</b> (int groupId, int itemId, int order, int titleRes) Variation on <b>addSubMenu</b> (int, int, int, CharSequence) that takes a string resource identifier for the title instead of the string itself.
abstract SubMenu	<b>addSubMenu</b> (CharSequence title) Add a new sub-menu to the menu.
abstract SubMenu	<b>addSubMenu</b> (int groupId, int itemId, int order, CharSequence title) Add a new sub-menu to the menu.
abstract void	<b>clear</b> () Remove all existing items from the menu, leaving it empty as if it had just been created.
abstract void	<b>close</b> () Closes the menu, if open.





# Menu (4)

abstract MenuItem	<code>findItem (int id)</code> Return the menu item with a particular identifier.
abstract MenuItem	<code>getItem (int index)</code> Gets the menu item at the given index.
abstract boolean	<code>hasVisibleItems ()</code> Return whether the menu currently has item items that are visible.
abstract boolean	<code>isShortcutKey (int keyCode, KeyEvent event)</code> Is a keypress one of the defined shortcut keys for this window.
abstract boolean	<code>performIdentifierAction (int id, int flags)</code> Execute the menu item action associated with the given menu identifier.
abstract boolean	<code>performShortcut (int keyCode, KeyEvent event, int flags)</code> Execute the menu item action associated with the given shortcut character.
abstract void	<code>removeGroup (int groupId)</code> Remove all items in the given group.
abstract void	<code>removeItem (int id)</code> Remove the item with the given identifier.
abstract void	<code>setGroupCheckable (int group, boolean checkable, boolean exclusive)</code> Control whether a particular group of items can show a check mark.
abstract void	<code>setGroupEnabled (int group, boolean enabled)</code> Enable or disable all menu items that are in the given group.
abstract void	<code>setGroupVisible (int group, boolean visible)</code> Show or hide all menu items that are in the given group.
abstract void	<code>setQwertyMode (boolean isQwerty)</code> Control whether the menu should be running in qwerty mode (alphabetic shortcuts) or 12-key mode (numeric shortcuts).
abstract int	<code>size ()</code> Get the number of items in the menu.





# Options Menu (1)

## Options Menu

### ❖ 기능

- ◆ 현재 실행 중인 Activity를 위한 Menu (Menu button click시 나타남)

### ❖ onCreateOptionsMenu (Menu menu)

- ◆ option menu 호출 시 한번 실행

#### **public boolean onCreateOptionsMenu (Menu menu)**

parameter	시스템에 의해 생성된 menu 객체
return	true / false = 화면 출력 / 화면 출력 안됨

### ❖ onPrepareOptionsMenu (Menu menu)

- ◆ option menu 화면 출력 전에 항상 호출

#### **public boolean onPrepareOptionsMenu (Menu menu)**

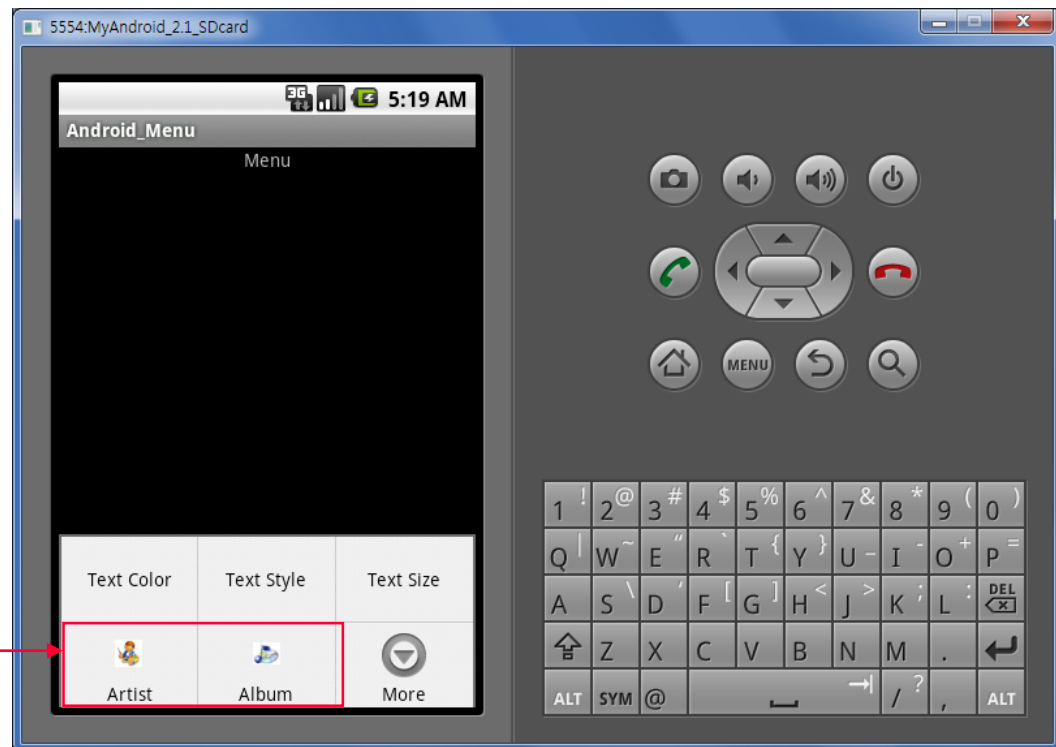
parameter	이 메소드를 호출한 Activity의 option menu
return	true / false = 화면 출력 / 화면 출력 안됨



# Options Menu (2)

## ❖ Icon Menu

- ◆ Android screen 하단에서 상승
- ◆ 최대 6 개까지의 text + icon(옵션) 형태 메뉴 표시
- ◆ 마지막 6번째 icon menu 버튼은 more로 표시



Icon Menu

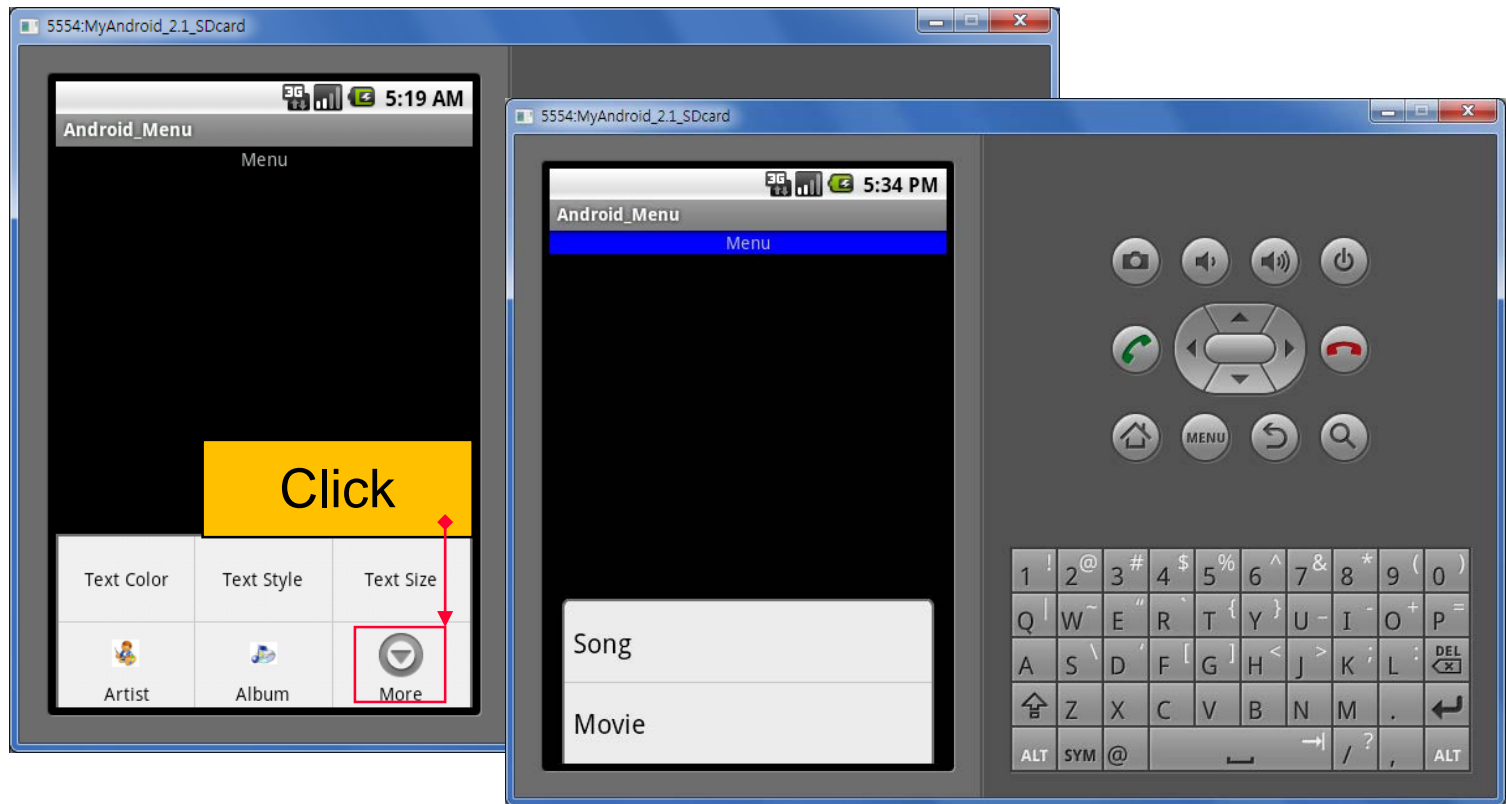




# Options Menu (3)

## ❖ Expanded Menu

- ◆ option menu의 총 항목 개수가 6개
- ◆ 마지막 6번째 icon menu 버튼이 more로 표시되었을 때 이를 사용하면 출력되는 text기반 list 형식의 메뉴





# Context Menu

## ■ Context Menu

### ❖ 기능

- ◆ Activity 내부의 view가 제공하는 text기반의 list 메뉴

### ❖ registerForContextMenu (View view)

- ◆ Context Menu 제공 view임을 Activity에 알리는 메소드

```
public void registerForContextMenu (View view)
```

parameter

Context Menu 제공 view 지정

### ❖ onCreateContextMenu (Menu menu)

- ◆ Context menu 화면 출력 전에 항상 호출

```
public void onCreateContextMenu (ContextMenu menu,  
                                View v, ContextMenu.ContextMenuInfo menuInfo)
```

parameters

- menu : 시스템에 의해 생성된 Context Menu 객체
- v : Context Menu를 소유한 view 인스턴스
- menuInfo : context menu가 표현할 menu item에 대한 추가 정보 전달 기능

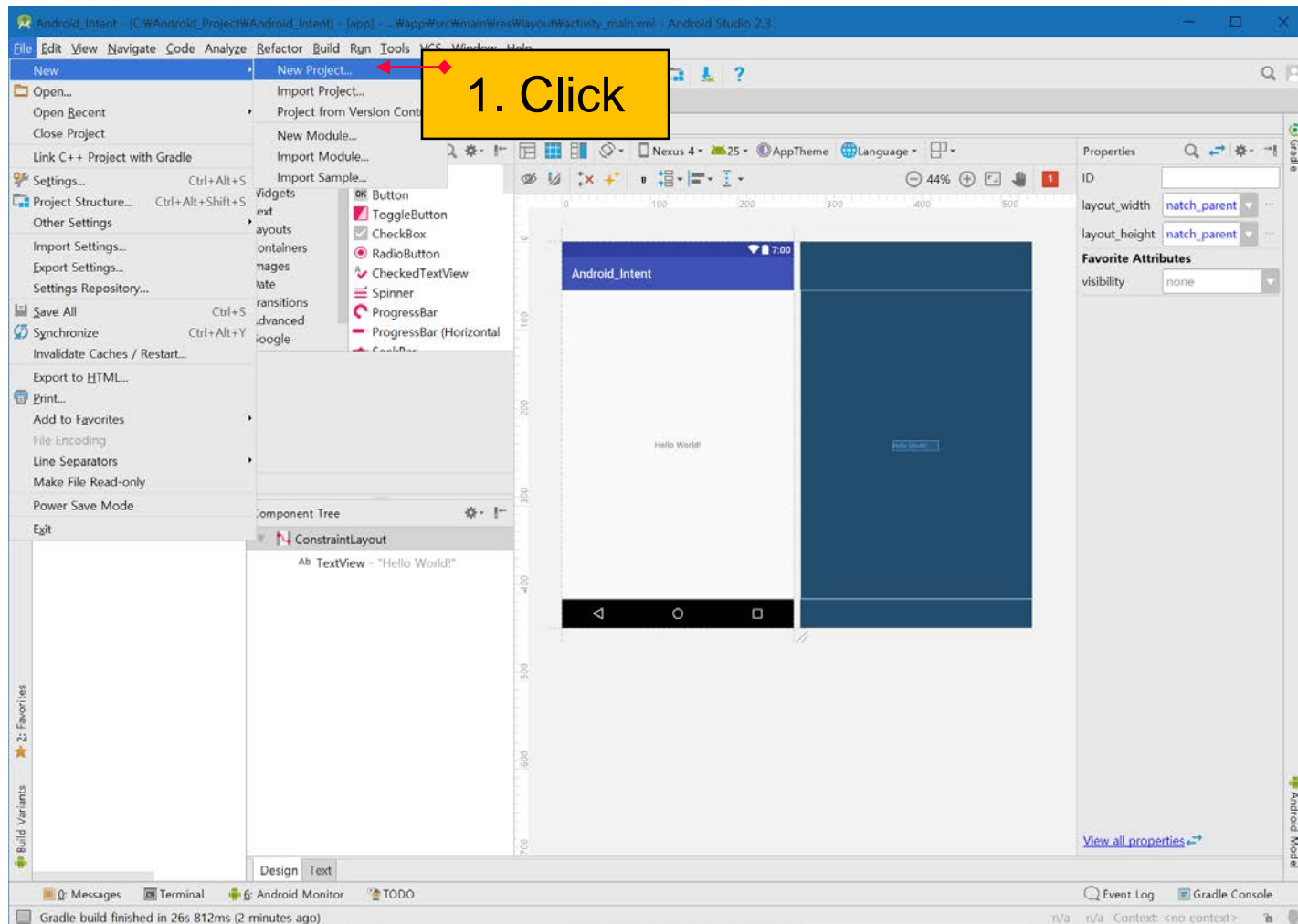




# Menu 구현 (1)

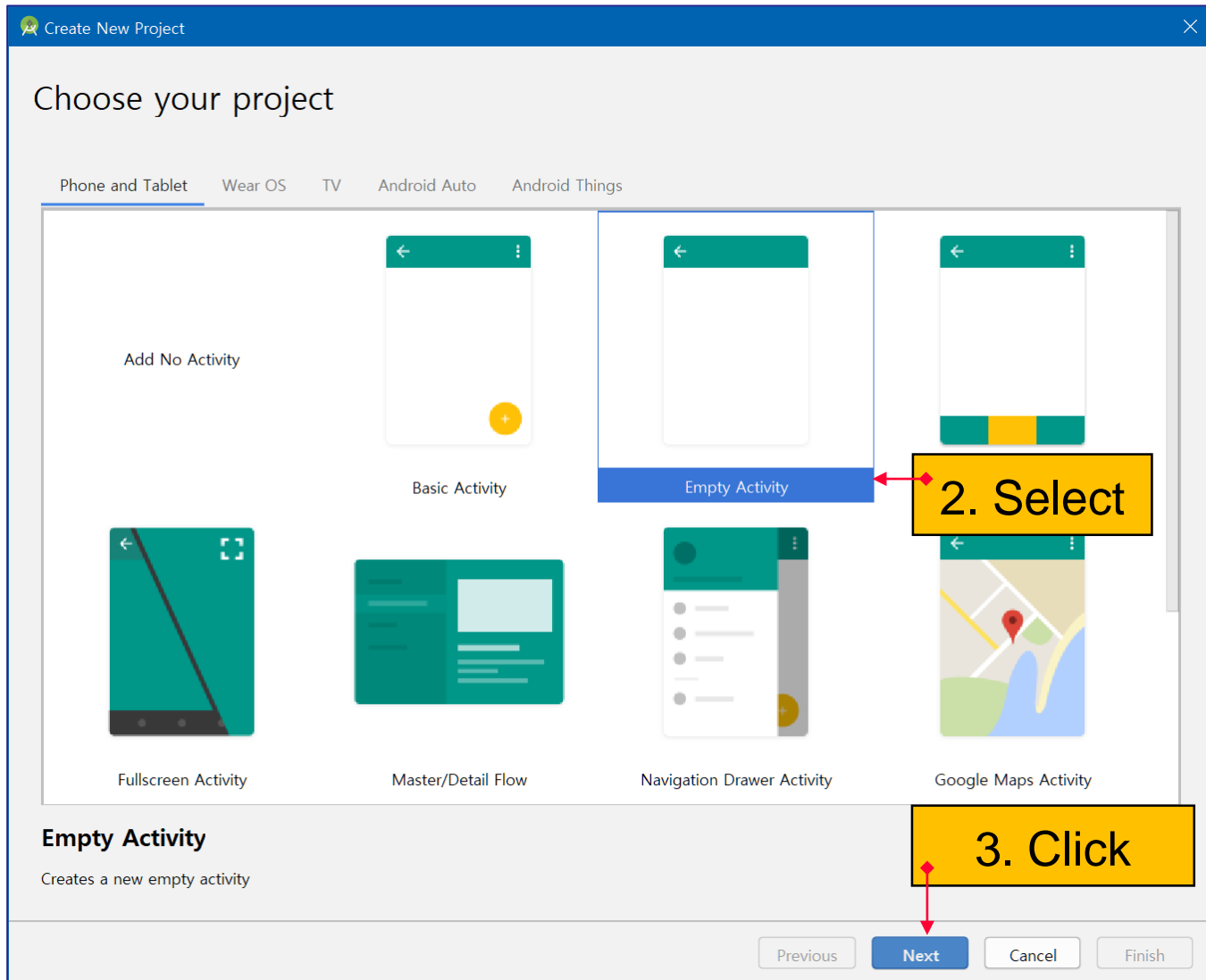
## ■ Android 프로젝트 생성

❖ 프로젝트 명 : Android\_Menu





# Menu 구현 (2)





# Menu 구현 (3)

Create New Project

Configure your project

Name  
Android\_Menu

Package name  
com.inhatc.android\_menu

Save location  
C:\Android\_Project\Android\_Menu

Language  
Java

Minimum API level  
API 26: Android 8.0 (Oreo)

☐ Your app will run on approximately 6.0% of devices.  
[Help me choose](#)

☐ This project will support instant apps

☐ Use AndroidX artifacts

Empty Activity

Creates a new empty activity

Previous Next Cancel Finish

4. Input "Android\_Menu"

5. Input "com.inhatc.android\_menu"

6. Select

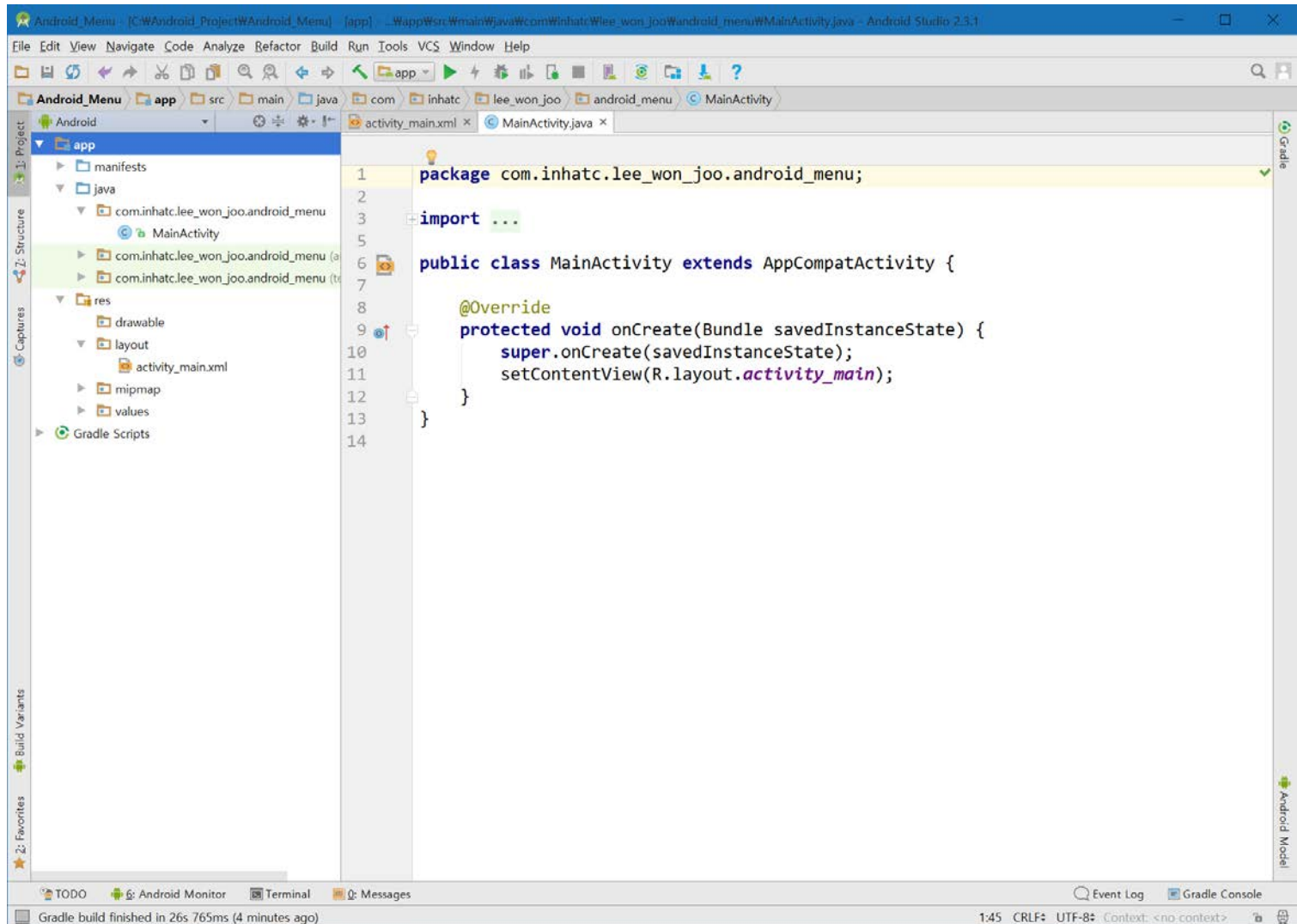
7. Select

8. Click



# Menu 구현 (4)

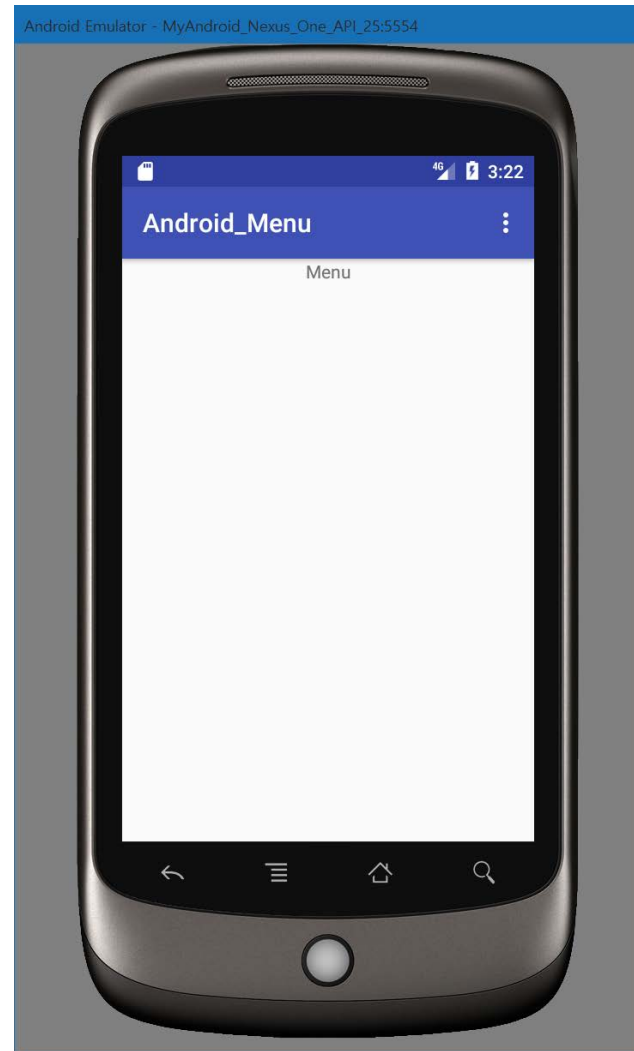
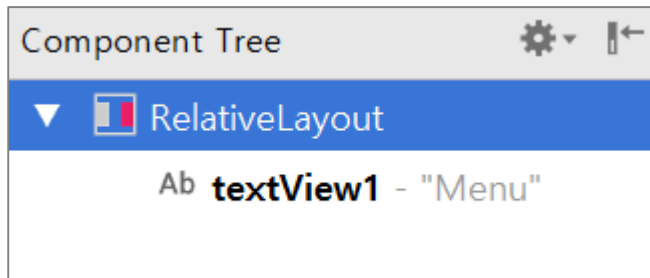
## ❖ Android 프로젝트 생성 완료





# Menu 구현 (5)

## ■ UI 설계





# Menu 구현 (6)

## ❖ TextView 속성 지정

The screenshot shows the Android Studio IDE with the following components:

- Project View:** Shows the project structure with folders like `manifests`, `java`, `res`, and `layout`. The `activity_main.xml` file is selected.
- Palette:** Displays a list of widgets. Under the `Text` category, `TextView` is highlighted.
- Design View:** Shows a visual representation of the app's layout. A `TextView` widget is being added to the design.
- Properties Panel:** Shows the properties for the selected `TextView` widget. The `text` property is set to `Hello World!`.
- Component Tree:** Shows the hierarchy of the UI components. The `TextView - "Hello World!"` is highlighted.

A yellow box with the text **9. Click** and a red arrow points to the `TextView - "Hello World!"` in the Component Tree, indicating the next step in the process.





# Menu 구현 (7)

## ❖ TextView 속성 지정

컨트롤	속성 지정
TextView	<ul style="list-style-type: none"><li>• android:id="@+id/textView1"</li><li>• android:layout_width="match_parent"</li><li>• android:layout_height="wrap_content"</li><li>• android:text="Menu"</li><li>• android:gravity="center"</li><li>• android:layout_gravity="center"</li></ul>





# Menu 구현 (8)

## ❖ activity\_main.xml

```
activity_main.xml ×
1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:app="http://schemas.android.com/apk/res-auto"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      tools:context="com.inhatc.lee_won_joo.android_menu.MainActivity">
8
9      <TextView
10         android:id="@+id/textView1"
11         android:layout_width="match_parent"
12         android:layout_height="wrap_content"
13         android:text="Menu"
14         android:gravity="center"
15         android:layout_gravity="center" />
16
17  </RelativeLayout>
```

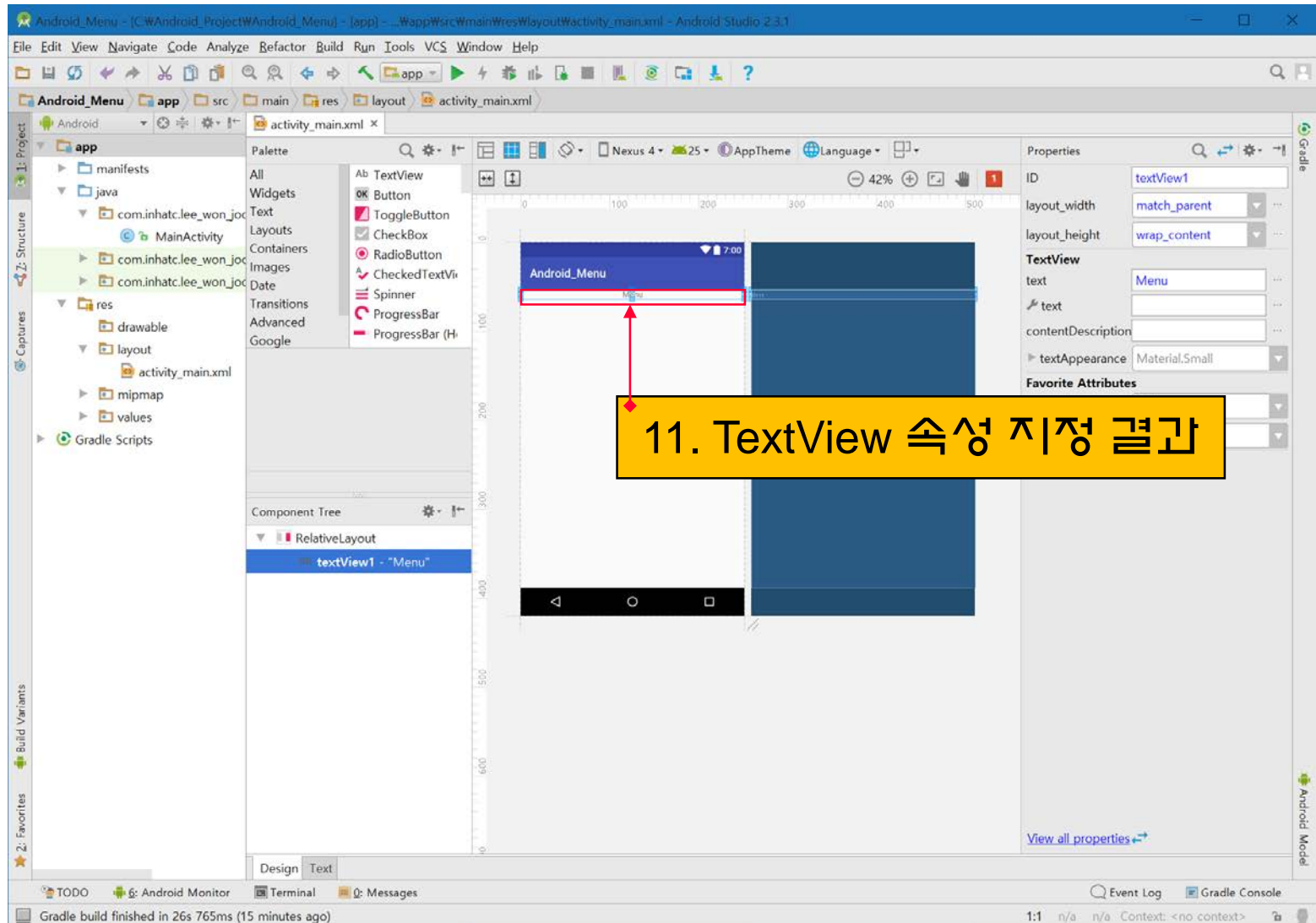
Design Text

10. XML code 추가 확인



# Menu 구현 (9)

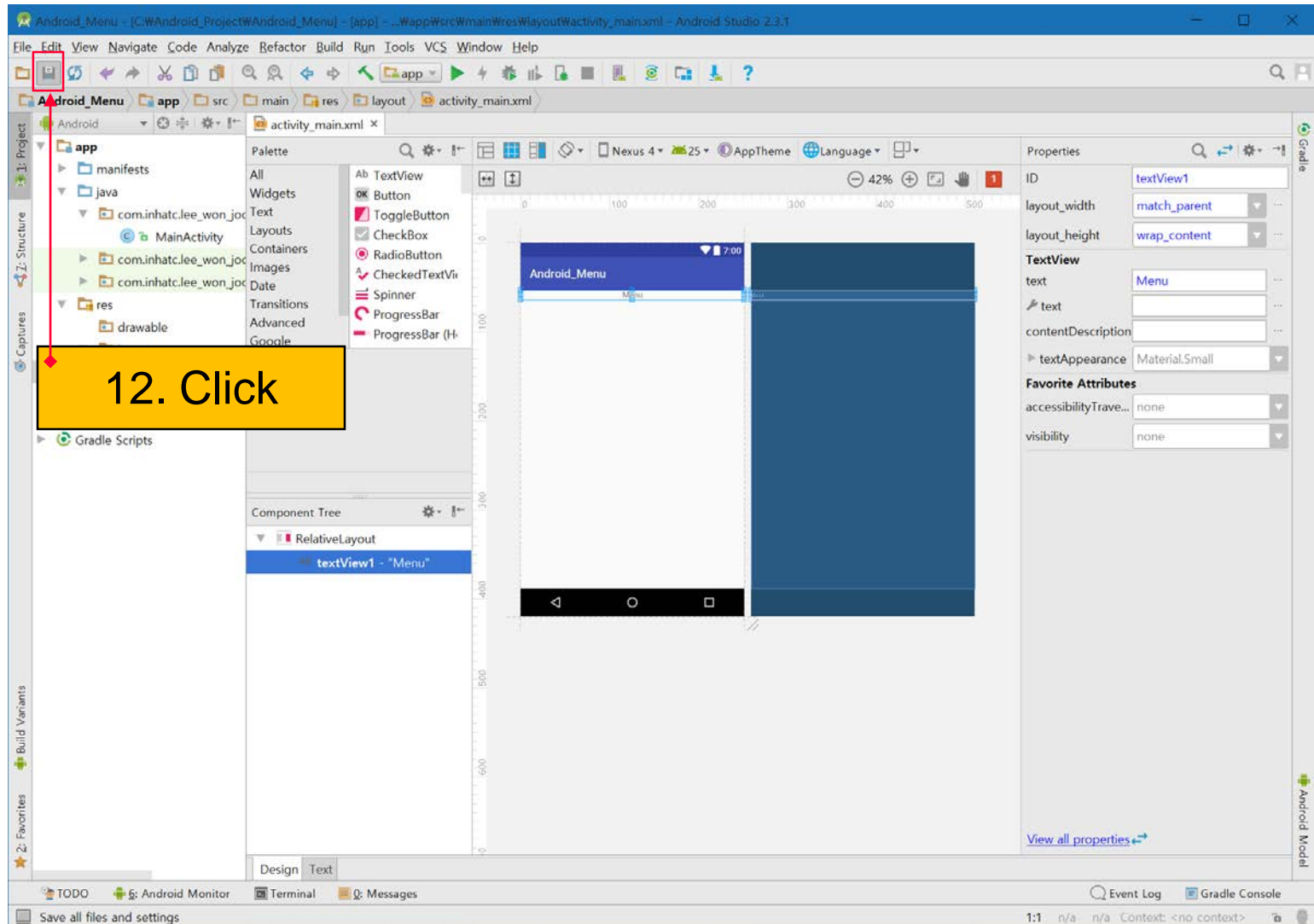
## ❖ TextView 속성 지정 결과





# Menu 구현 (10)

## ❖ activity\_main.xml 저장





# Menu 구현 (11)

## ❖ Image 파일 import 확인

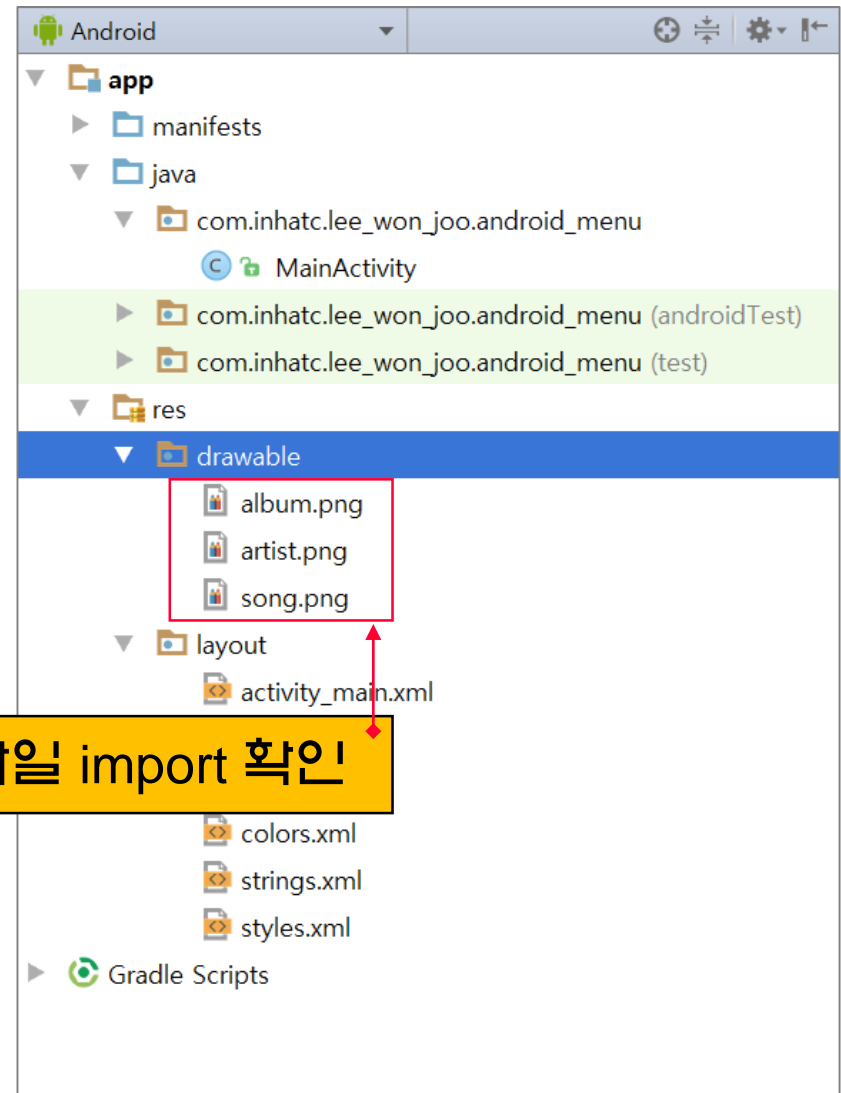
◆ album.png



◆ artist.png



◆ song.png



13. Image 파일 import 확인





# Menu 구현 (12)

## ❖ onCreate() Method 구현

```
MainActivity.java x
1 package com.inhatc.lee_won_joo.android_menu;
2
3 import android.support.v7.app.AppCompatActivity;
4 import android.os.Bundle;
5 import android.widget.TextView;
6
7 public class MainActivity extends AppCompatActivity {
8
9     TextView objTxtView; //TextView object
10
11     @Override
12     protected void onCreate(Bundle savedInstanceState) {
13         super.onCreate(savedInstanceState);
14         setContentView(R.layout.activity_main);
15
16         objTxtView = (TextView)findViewById(R.id.textView1);
17
18         //Support context menu
19         registerForContextMenu(objTxtView);
20
21     }
22 }
```



# Menu 구현 (13)

## ❖ Method 추가

Android\_Menu - [C:\Android\_Project\Android\_Menu] - [app] - ...\Wapp\Wsrc\Wmain\Wjava\Wcom\Winhatc\Wlee\_won\_joo\Wandroid\_menu\WMainActivity.java - Android Studio 2.3.1

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Override Methods...  
Implement Methods...  
Delegate Methods...  
Generate...  
Surround With...  
Unwrap/Remove...  
Completion  
Folding  
Insert Live Template...  
Surround with Live Template...  
Comment with Line Comment  
Comment with Block Comment  
Reformat Code  
Show Reformat File Dialog  
Auto-Indent Lines  
Optimize Imports  
Rearrange Code  
Move Statement Down  
Move Statement Up  
Move Element Left  
Move Element Right  
Move Line Down  
Move Line Up  
Update Copyright...

15. Click

MainActivity  
package com.inhatc.lee\_won\_joo.android\_menu;

Select Method to Override/Implement

- onCreate(savedInstanceState:Bundle, persistentState:PersistableBundle):void
- onCreateContextMenu(menu:ContextMenu, v:View, menuInfo:ContextMenuInfo):void
- onCreateDescription():CharSequence
- onCreateDialog(id:int):Dialog
- onCreateDialog(id:int, args:Bundle):Dialog
- onCreateNavigateUpTaskStack(builder:TaskStackBuilder):void
- onCreateOptionsMenu(menu:Menu):boolean
- onCreatePanelView(featureId:int):View
- onCreateThumbnail(outBitmap:Bitmap, canvas:Canvas):boolean
- onDetachedFromWindow():void
- onEnterAnimationComplete():void
- onGenericMotionEvent(event:MotionEvent):boolean
- onKeyDown(keyCode:int, event:KeyEvent):boolean

16. Click

☒ Copy JavaDoc  
☒ Insert @Override

17. Click

OK Cancel

Override base class methods in the current class

22:5 CRLF UTF-8 Context: <no context>





# Menu 구현 (14)

## ❖ onCreateOptionsMenu() method 구현

```
MainActivity.java x
13      @Override
14      protected void onCreate(Bundle savedInstanceState) {...}
24
25      /**...*/
51      @Override
52      public boolean onCreateOptionsMenu(Menu menu) {
53          SubMenu mnuTextColor = menu.addSubMenu("Text Color");
54          SubMenu mnuTextStyle = menu.addSubMenu("Text Style");
55          SubMenu mnuTextSize = menu.addSubMenu("Text Size");
56
57          SubMenu mnuArtist = menu.addSubMenu("Artist");
58          mnuArtist.setIcon(R.drawable.artist);
59
60          SubMenu mnuAlbum = menu.addSubMenu("Album");
61          mnuAlbum.setIcon(R.drawable.album);
62
63          SubMenu mnuSong = menu.addSubMenu("Song");
64          mnuSong.setIcon(R.drawable.song);
65
66          SubMenu mnuMovie = menu.addSubMenu("Movie");
67
68          return super.onCreateOptionsMenu(menu);
69      }
70
71  }
```





# Menu 구현 (15)

## ❖ Method 추가

Android\_Menu - [C:\Android\_Project\Android\_Menu] - [app] - ...\Wapp\Wsrc\Wmain\Wjava\Wcom\Winhatc\Wlee\_won\_joo\Wandroid\_menu\WMainActivity.java - Android Studio 2.3.1

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Override Methods...  
Implement Methods...  
Delegate Methods...  
Generate...  
Surround With...  
Unwrap/Remove...

19. Click

MainActivity  
package com.inhatc.lee\_won\_joo.android\_menu;

Select Method to Override/Implement

- onOptionsItemSelected(item:MenuItem):boolean
- onOptionsMenuClosed(menu:Menu):void
- onPostExecute(savedInstanceState:Bundle, persistentState:PersistableBundle):v
- onPrepareDialog(id:int, dialog:Dialog):void
- onPrepareDialog(id:int, dialog:Dialog, args:Bundle):void
- onPrepareNavigateUpTaskStack(builder:TaskStackBuilder):void
- onPrepareOptionsMenu(menu:Menu):boolean
- onProvideAssistContent(outContent:AssistContent):void
- onProvideAssistData(data:Bundle):void
- onProvideKeyboardShortcuts(data:List<KeyboardShortcutGroup>, menu:Men
- onProvideReferrer():Uri
- onRestart():void
- onRestoreInstanceState(savedInstanceState:Bundle):void

20. Click

☒ Copy JavaDoc  
☒ Insert @Override

21. Click

OK Cancel

Android Model

Event Log Gradle Console

22:5 CRLF UTF-8 Context: <no context>

Override base class methods in the current class



# Menu 구현 (16)

## ❖ onPrepareOptionsMenu() method 구현

```
MainActivity.java x
25  /** ... */
51  @Override
52  public boolean onCreateOptionsMenu(Menu menu) {
53      SubMenu mnuTextColor = menu.addSubMenu("Text Color");
54      SubMenu mnuTextStyle = menu.addSubMenu("Text Style");
55      SubMenu mnuTextSize = menu.addSubMenu("Text Size");
56
57      SubMenu mnuArtist = menu.addSubMenu("Artist");
58      mnuArtist.setIcon(R.drawable.artist);
59
60      SubMenu mnuAlbum = menu.addSubMenu("Album");
61      mnuAlbum.setIcon(R.drawable.album);
62
63      SubMenu mnuSong = menu.addSubMenu("Song");
64      mnuSong.setIcon(R.drawable.song);
65
66      SubMenu mnuMovie = menu.addSubMenu("Movie");
67
68      return super.onCreateOptionsMenu(menu);
69  }
70
71  /** ... */
87  @Override
88  public boolean onPrepareOptionsMenu(Menu menu) {
89
90      return super.onPrepareOptionsMenu(menu);
91  }
92  }
```

22. Coding



# Menu 구현 (17)

## ❖ Android 프로젝트 실행

The screenshot shows the Android Studio 2.3.1 interface. The 'Run' menu is open, and the 'Run' option is highlighted. A yellow box with the text '23. Click' points to the 'Run' menu item. The 'Select Deployment Target' dialog is also open, showing 'Connected Devices' and 'Available Virtual Devices'. The 'MyAndroid\_Nexus One API 25' device is selected, and a yellow box with the text '24. Click' points to it. At the bottom of the dialog, the 'OK' button is highlighted, and a yellow box with the text '25. Click' points to it. The background shows the project structure of 'Android\_Menu' with files like 'MainActivity.java' and 'activity\_main.xml'.

23. Click

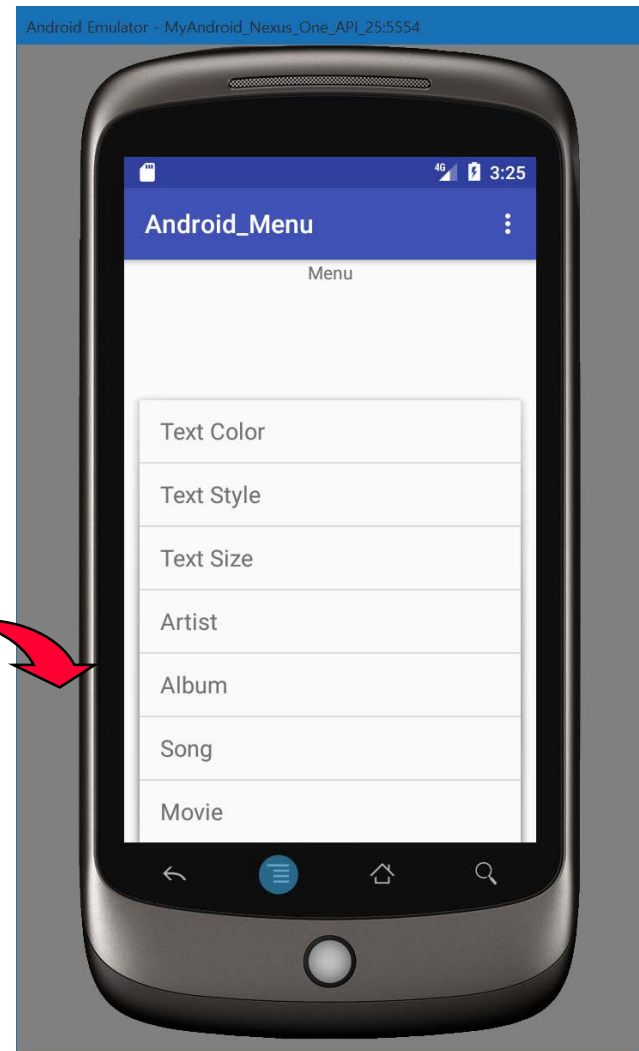
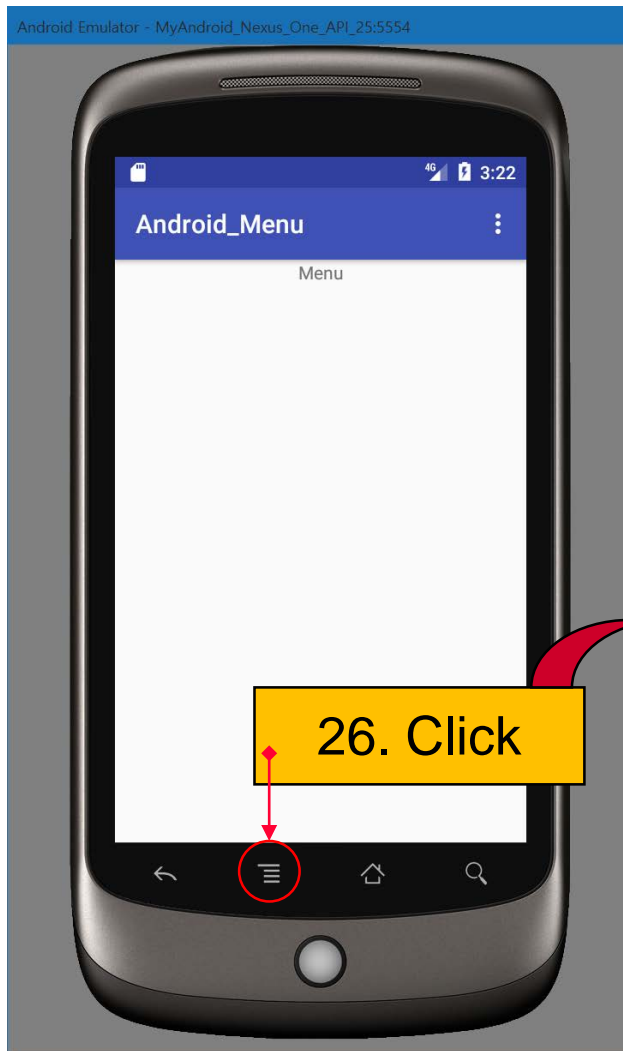
24. Click

25. Click

return super.onPrepareOptionsMenu(menu);

# Menu 구현 (18)

## ❖ 실행 결과



# Menu 구현 (19)

## ❖ 실행 결과

◆ Android 2.2 : API Version 7

1. 실행 결과 확인

2. Click

Expanded menu

Song

Movie

# 실습 I : Text Color 메뉴의 SubMenu 구현

## ■ Android\_Menu (실습 시간 : 30분)

❖ 아래 그림과 같이 Text Color 메뉴의 SubMenu와 Menu Item Event Handler를 구현하시오.

◆ SubMenu 구현

◆ SubMenu Item Click Event Handler 구현





# 실습 I : Text Color 메뉴의 SubMenu 구현 (1)

## ■ SubMenu 구현

❖ Group No 지정

❖ Text Color Item No 지정

```
MainActivity.java ×
1  package com.inhatc.lee_won_joo.android_menu;
2
3  import ...
4
5
6
7
8
9  public class MainActivity extends AppCompatActivity {
10
11      // Group No.
12      public static final int ID_GROUP_TEXT_COLOR      = 1;
13      public static final int ID_GROUP_TEXT_STYLE      = 2;
14      public static final int ID_GROUP_TEXT_SIZE      = 3;
15      public static final int ID_GROUP_ARTIST          = 4;
16      public static final int ID_GROUP_ALBUM           = 5;
17      public static final int ID_GROUP_SONG            = 6;
18      public static final int ID_GROUP_MOVIE           = 7;
19      // Text Color Item No.
20      public static final int ID_COLOR_RED             = 11;
21      public static final int ID_COLOR_GREEN           = 12;
22      public static final int ID_COLOR_BLUE            = 13;
23
24      TextView objTxtView;    //TextView object
25
26      @Override
27      protected void onCreate(Bundle savedInstanceState) {...}
28
29
30
31
32
33
34
35
36
37
```

1. Coding





# 실습 I : Text Color 메뉴의 SubMenu 구현 (3)

## ❖ onCreateOptionsMenu() Method 구현

### 2. Coding

```
38      /** ... */
64      @Override
65      public boolean onCreateOptionsMenu(Menu menu) {
66          SubMenu mnuTextColor = menu.addSubMenu("Text Color");
67          mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_RED, 1, "Red");
68          mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_GREEN, 2, "Green");
69          mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_BLUE, 3, "Blue");
70
71          SubMenu mnuTextStyle = menu.addSubMenu("Text Style");
72          SubMenu mnuTextSize = menu.addSubMenu("Text Size");
73
74          SubMenu mnuArtist = menu.addSubMenu("Artist");
75          mnuArtist.setIcon(R.drawable.artist);
76
77          SubMenu mnuAlbum = menu.addSubMenu("Album");
78          mnuAlbum.setIcon(R.drawable.album);
79
80          SubMenu mnuSong = menu.addSubMenu("Song");
81          mnuSong.setIcon(R.drawable.song);
82
83          SubMenu mnuMovie = menu.addSubMenu("Movie");
84
85          return super.onCreateOptionsMenu(menu);
86      }
```





# 실습 I : Text Color 메뉴의 SubMenu 구현 (4)

## ❖ Method 추가

3. Click

4. Click

5. Click

Android\_Menu - [C:\Android\_Project\WAndroid\_Menu] - [app] - ...\Wapp\src\main\java\com\Winhac\Wlee\_won\_joo\Wandroid\_menu\MainActivity.java - Android Studio 2.3.1

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Override Methods...  
Implement Methods...  
Delegate Methods...  
Generate...  
Surround With...  
Unwrap/Remove...  
Completion  
Folding  
Insert Live Template...  
Surround with Live Template...  
Comment with Line Comment  
Comment with Block Comment  
Reformat Code  
Show Reformat File Dialog  
Auto-Indent Lines  
Optimize Imports  
Rearrange Code  
Move Statement Down  
Move Statement Up  
Move Element Left  
Move Element Right  
Move Line Down  
Move Line Up  
Update Copyright...

MainActivity  
package com.inhac.lee\_won\_joo.android\_menu;

Select Methods to Override/Implement

- onKeyShortcut(keyCode:int, event:KeyEvent):boolean
- onKeyUp(keyCode:int, event:KeyEvent):boolean
- onLocalVoiceInteractionStarted():void
- onLocalVoiceInteractionStopped():void
- onNavigateUp():boolean
- onNavigateUpFromChild(child:Activity):boolean
- onOptionsItemSelected(item:MenuItem):boolean**
- onOptionsMenuClosed(menu:Menu):void
- onPostCreate(savedInstanceState:Bundle, persistentState:PersistableBundle):void
- onPrepareDialog(id:int, dialog:Dialog):void
- onPrepareDialog(id:int, dialog:Dialog, args:Bundle):void
- onPrepareNavigateUpTaskStack(builder:TaskStackBuilder):void
- onProvideAssistContent(outContent:AssistContent):void

☒ Copy JavaDoc  
☒ Insert @Override

OK Cancel

Run TODO Android Monitor Terminal Messages Event Log Gradle Console

Override base class methods in the current class

22:5 CRLF UTF-8 Context: <no context>



# 실습 I : Text Color 메뉴의 SubMenu 구현 (5)

## ❖ onOptionsItemSelected() Method 구현

◆ Text Color > RED

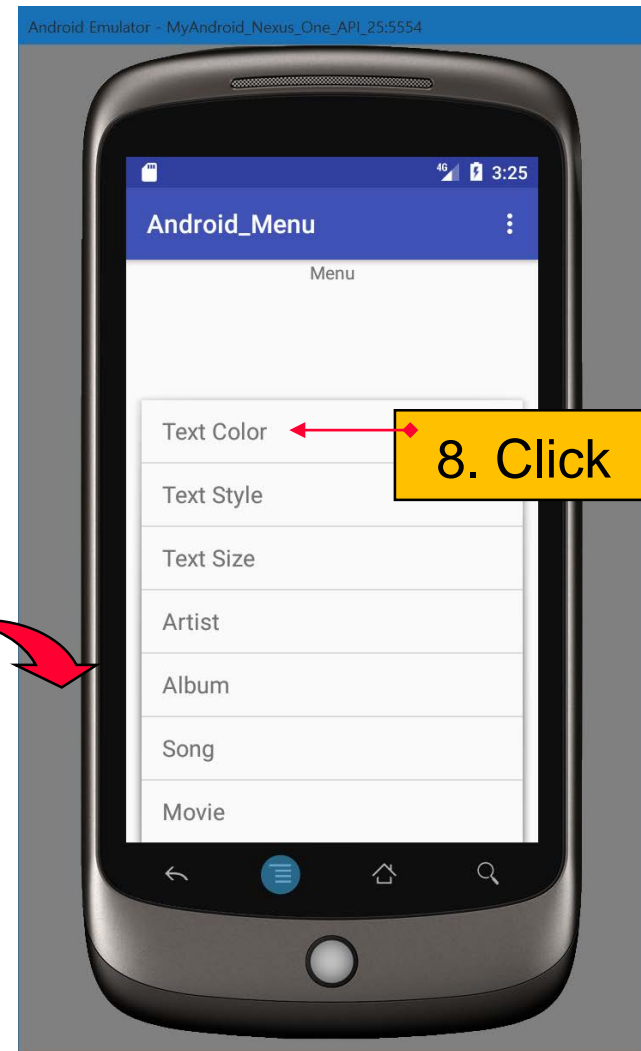
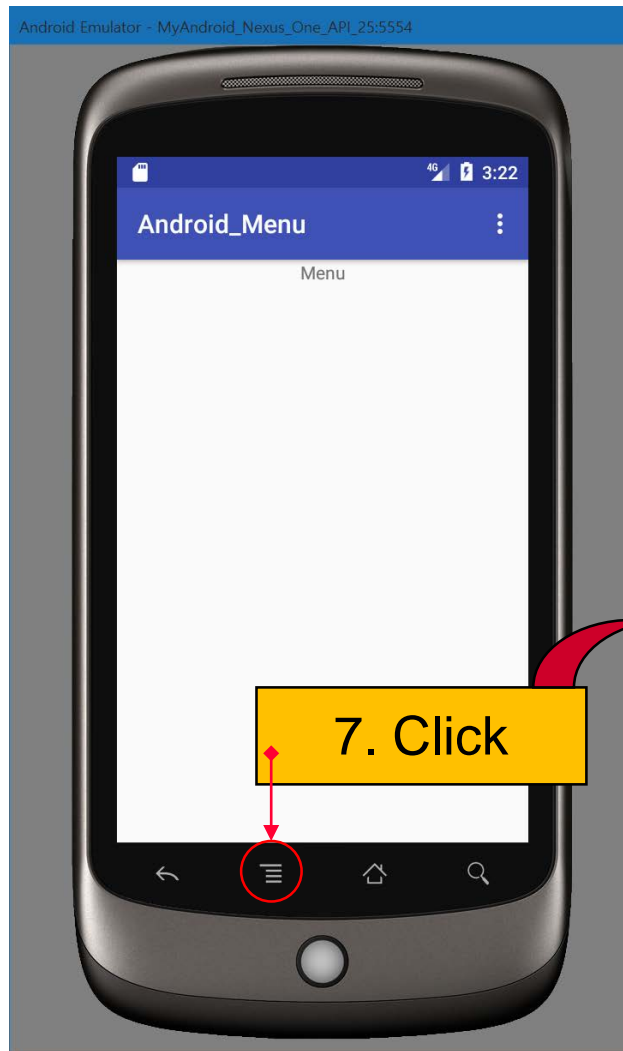
◆ Text Color > GREEN

◆ Text Color > BLUE

```
MainActivity.java x
113  /**...*/
129  @Override
130  public boolean onOptionsItemSelected(MenuItem item) {
131      switch (item.getItemId()) {
132          case ID_COLOR_RED:
133              objTextView.setTextColor(Color.RED);
134              return true;
135          case ID_COLOR_GREEN:
136              objTextView.setTextColor(Color.GREEN);
137              return true;
138          case ID_COLOR_BLUE:
139              objTextView.setTextColor(Color.BLUE);
140              return true;
141      }
142      return super.onOptionsItemSelected(item);
143  }
144  }
145
```

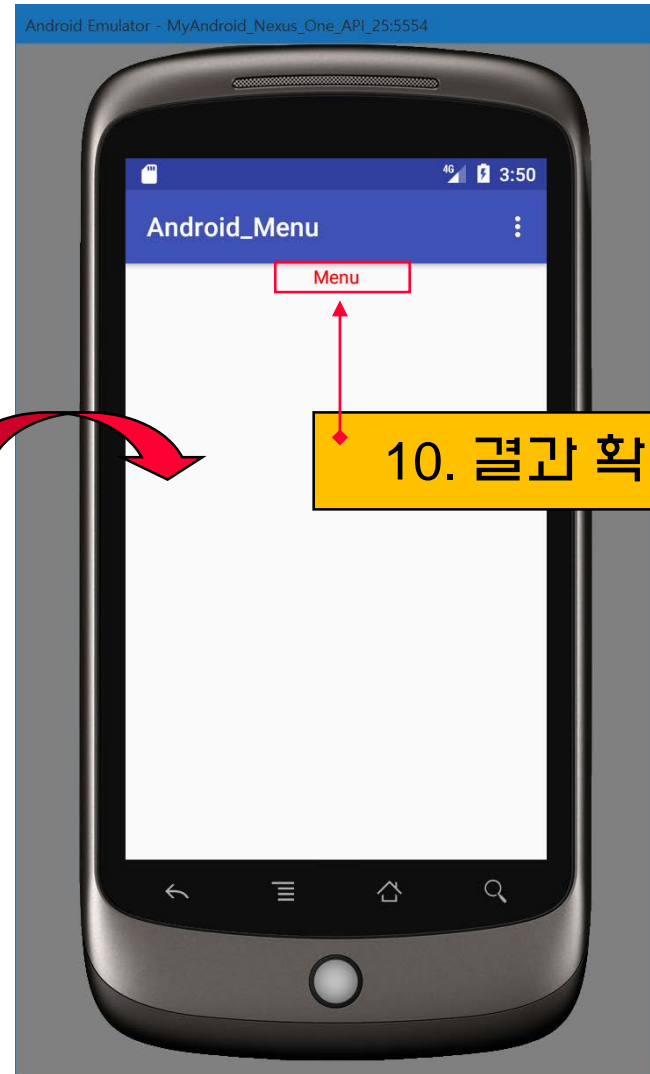
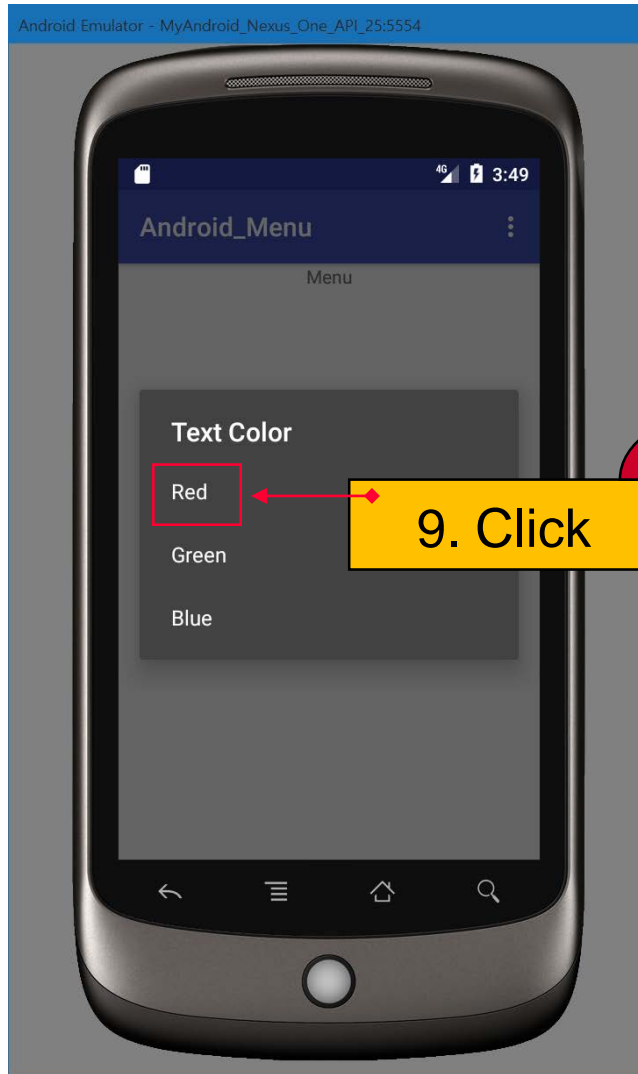
# 실습 I : Text Color 메뉴의 SubMenu 구현 (6)

## ❖ 실행 결과



# 실습 I : Text Color 메뉴의 SubMenu 구현 (7)

## ❖ 실행 결과



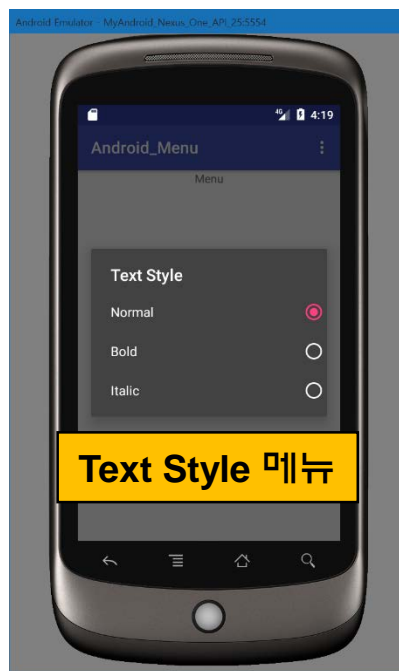
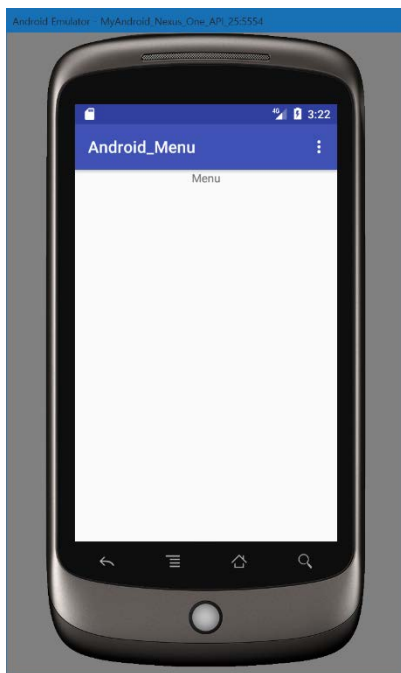
## 실습 II : Text Style/ Text Size 메뉴의 SubMenu 구현

### ■ Android\_Menu (실습 시간 : 30분)

❖ 아래 그림과 Text Style / Text Size 메뉴의 SubMenu와 Menu Item Event Handler를 구현하시오.

◆ SubMenu 구현

◆ SubMenu Item Click Event Handler 구현





# 실습 II : Text Style/ Text Size 메뉴의 SubMenu 구현 (1)

## ■ SubMenu 구현

### ❖ Text Style Item No / Text Size Item No 지정

```
MainActivity.java ×
12 public class MainActivity extends AppCompatActivity {
13
14     // Group No.
15     public static final int ID_GROUP_TEXT_COLOR = 1;
16     public static final int ID_GROUP_TEXT_STYLE = 2;
17     public static final int ID_GROUP_TEXT_SIZE = 3;
18     public static final int ID_GROUP_ARTIST = 4;
19     public static final int ID_GROUP_ALBUM = 5;
20     public static final int ID_GROUP_SONG = 6;
21     public static final int ID_GROUP_MOVIE = 7;
22
23     // Text Color Item No.
24     public static final int ID_COLOR_RED = 11;
25     public static final int ID_COLOR_GREEN = 12;
26     public static final int ID_COLOR_BLUE = 13;
27
28     // Text Style Item No.
29     public static final int ID_TEXT_NORMAL = 21;
30
31
32
33     // Text Size Item No.
34     public static final int ID_TEXTSIZE_10P = 31;
35
36
37
38     TextView objTextView; //TextView object
39
```

1. Coding



## 실습 II : Text Style/ Text Size 메뉴의 SubMenu 구현 (2)

### ❖ onCreateOptionsMenu() Method 구현

```
MainActivity.java x
52  /**...*/
78  @Override
79  public boolean onCreateOptionsMenu(Menu menu) {
80      SubMenu mnuTextColor = menu.addSubMenu("Text Color");
81      mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_RED, 1, "Red");
82      mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_GREEN, 2, "Green");
83      mnuTextColor.add(ID_GROUP_TEXT_COLOR, ID_COLOR_BLUE, 3, "Blue");
84
85      SubMenu mnuTextStyle = menu.addSubMenu("Text Style");
86      mnuTextStyle.add(ID_GROUP_TEXT_STYLE, ID_TEXT_NORMAL, 1, "Normal").setChecked(true);
87
88      ③
89
90
91      SubMenu mnuTextSize = menu.addSubMenu("Text Size");
92      mnuTextSize.add(ID_GROUP_TEXT_SIZE, ID_TEXTSIZE_10P, 1, "10 Pt");
93
94      ④
95
96      SubMenu mnuArtist = menu.addSubMenu("Artist");
97      mnuArtist.setIcon(R.drawable.artist);
98
99      SubMenu mnuAlbum = menu.addSubMenu("Album");
100     mnuAlbum.setIcon(R.drawable.album);
101
102     SubMenu mnuSong = menu.addSubMenu("Song");
103     mnuSong.setIcon(R.drawable.song);
104
105     SubMenu mnuMovie = menu.addSubMenu("Movie");
106
107     return super.onCreateOptionsMenu(menu);
108 }
109
```

2. Coding





## 실습 II : Text Style/ Text Size 메뉴의 SubMenu 구현 (3)

### ❖ onOptionsItemSelected() Method 구현



#### ◆ Text Style

- Normal
- Bold
- Italic

#### ◆ Text Size

- 10 Pt
- 18 Pt
- 24 Pt



```
MainActivity.java x
149 public boolean onOptionsItemSelected(MenuItem item) {
150     switch (item.getItemId()) {
151         case ID_COLOR_RED:
152             objTextView.setTextColor(Color.RED);
153             return true;
154         case ID_COLOR_GREEN:
155             objTextView.setTextColor(Color.GREEN);
156             return true;
157         case ID_COLOR_BLUE:
158             objTextView.setTextColor(Color.BLUE);
159             return true;
160         case ID_TEXT_NORMAL:
161             objTextView.setTypeface(Typeface.DEFAULT, Typeface.NORMAL);
162             item.setChecked(true);
163             return true;
164         case ID_TEXT_BOLD:
165             
166             return true;
167         case ID_TEXT_ITALIC:
168             objTextView.setTypeface(Typeface.DEFAULT, Typeface.ITALIC);
169             item.setChecked(true);
170             return true;
171         case ID_TEXTSIZE_10P:
172             objTextView.setTextSize(10);
173             return true;
174         case ID_TEXTSIZE_18P:
175             
176             return true;
177         case ID_TEXTSIZE_24P:
178             objTextView.setTextSize(24);
179             return true;
180     }
181     return super.onOptionsItemSelected(item);
182 }
```

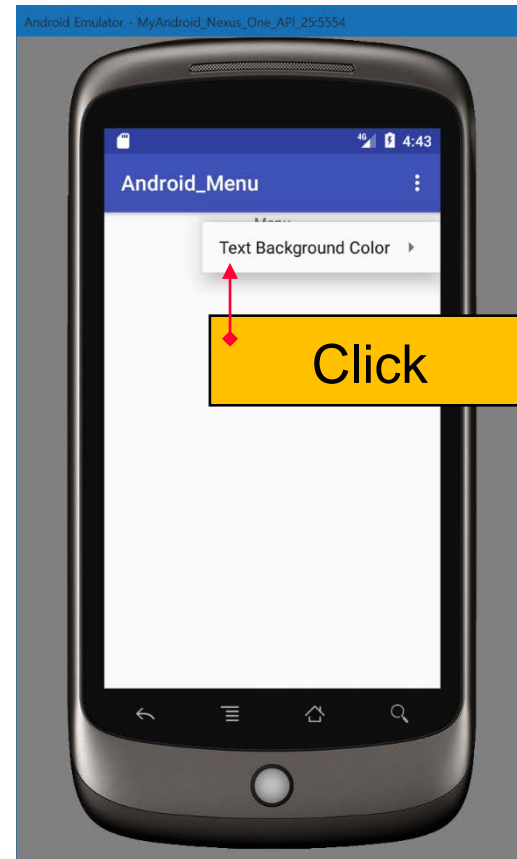
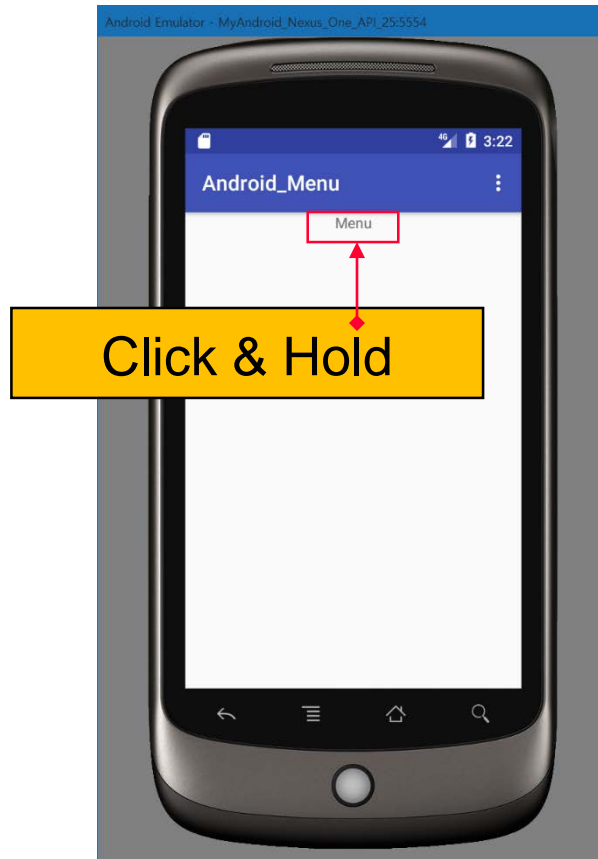
3. Coding



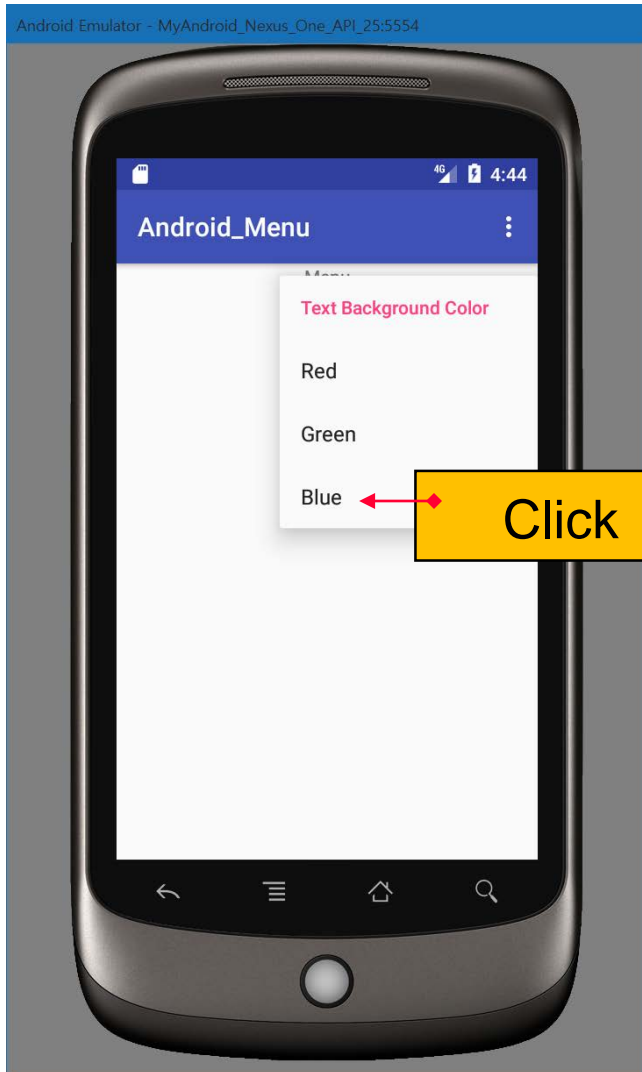
# 실습 III : Context Menu 구현 (1)

## ■ Android\_Menu (실습 시간 : 30분)

- ❖ 아래 그림과 같이 Text 배경색을 지정하는 Context Menu를 구현하시오.



# 실습 III : Context Menu 구현 (2)





# 실습 III : Context Menu 구현 (3)

## ❖ onCreateContextMenu() method 추가

1. Click

2. Click

3. Click

Select Methods to Override/Implement

- ☒ onAttachedToWindow():void
- ☒ onAttachFragment(fragment:Fragment):void
- ☒ onChildTitleChanged(childActivity:Activity, title:CharSequence):void
- ☒ onContextItemSelected(item:MenuItem):boolean
- ☒ onContextMenuClosed(menu:Menu):void
- ☒ onCreate(savedInstanceState:Bundle, persistentState:PersistableBundle):void
- ☒ onCreateContextMenu(menu:ContextMenu, v:View, menuInfo:ContextMenuInfo):void
- ☒ onCreateDescription():CharSequence
- ☒ onCreateDialog(id:int):Dialog
- ☒ onCreateDialog(id:int, args:Bundle):Dialog
- ☒ onCreateNavigateUpTaskStack(builder:TaskStackBuilder):void
- ☒ onCreatePanelView(featureId:int):View
- ☒ onCreateThumbnail(outBitmap:Bitmap, canvas:Canvas):boolean

☒ Copy JavaDoc

☒ Insert @Override

OK Cancel



# 실습 III : Context Menu 구현 (4)

## ❖ onCreateContextMenu() method 구현

### ◆ Text 배경색

- RED, GREEN, BLUE

```
MainActivity.java x
42      @Override
43      protected void onCreate(Bundle savedInstanceState) {...}
53
54      /**...*/
80      @Override
81      public boolean onCreateOptionsMenu(Menu menu) {...}
111
112      /**...*/
128      @Override
129      public boolean onPrepareOptionsMenu(Menu menu) {...}
133
134      /**...*/
150      @Override
151      public boolean onOptionsItemSelected(MenuItem item) {...}
186
187      /**...*/
203      @Override
204      public void onCreateContextMenu(ContextMenu menu, View v,
205                                   ContextMenu.ContextMenuInfo menuInfo) {
206
207          SubMenu mnuTextBackGroundColor = menu.addSubMenu("Text Background Color");
208          mnuTextBackGroundColor.add(Menu.NONE, ID_COLOR_RED, Menu.NONE, "Red");
209
210          1
211
212          super.onCreateContextMenu(menu, v, menuInfo);
213      }
214 }
```

4. Coding



# 실습 III : Context Menu 구현 (5)

## ❖ onOptionsItemSelected() method 추가

5. Click

6. Click

7. Click

Select Methods to Override/Implement

- ☐ onActionModeStarted(mode:ActionMode):void
- ☐ onActivityReenter(resultCode:int, data:Intent):void
- ☐ onApplyThemeResource(theme:Theme, resid:int, first:boolean):void
- ☐ onAttachedToWindow():void
- ☐ onAttachFragment(fragment:Fragment):void
- ☐ onChildTitleChanged(childActivity:Activity, title:CharSequence):void
- ☒ onOptionsItemSelected(item:MenuItem):boolean
- ☐ onContextMenuClosed(menu:Menu):void
- ☐ onCreate(savedInstanceState:Bundle, persistentState:PersistableBundle):void
- ☐ onCreateDescription():CharSequence
- ☐ onCreateDialog(id:int):Dialog
- ☐ onCreateDialog(id:int, args:Bundle):Dialog
- ☐ onCreateNavigateUpTaskStack(builder:TaskStackBuilder):void

☒ Copy JavaDoc

☒ Insert @Override

OK Cancel



# 실습 III : Context Menu 구현 (6)

## ❖ onContextItemSelected() Method 구현

### ◆ Text 배경색

- RED, GREEN, BLUE

```
MainActivity.java x
214
215  /**...*/
232  @Override
233  public boolean onContextItemSelected(MenuItem item) {
234
235      switch (item.getItemId()) {
236          case ID_COLOR_RED:
237              objTextView.setBackgroundColor(Color.RED);
238              return true;
239          case ID_COLOR_GREEN:
240                              2
241              return true;
242          case ID_COLOR_BLUE:
243                              3
244              return true;
245      }
246
247      return super.onContextItemSelected(item);
248  }
249  }
250
```



# 학습 요약

■ Menu

■ Options Menu

❖ Icon Menu

❖ Expanded Menu

■ Context Menu



open handset alliance