

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\res\\layout\\activity_payment.xml [app] - Android Studio

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

ElectricCarFinancing app src main res layout activity_payment.xml [app] C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing\app\src\main\java\edu\udayton\electriccarfinancing>MainActivity.java

1:Project

Resource Manager

Palette

Common Text Buttons Widgets Layouts Containers Google Legacy

Attributes

imgYears

keepScreenOn

layerType

layout_gravity

center_horizontal

bottom

clip_horizontal

center

clip_vertical

start

right

center_horizontal

fill

fill_horizontal

top

left

center_vertical

fill_vertical

end

layout_height

layout_margin

layout_marginLeft

layout_marginTop

layout_marginRight

layout_marginBottom

layout_weight

layout_width

longClickable

maxHeight

maxWidth

minHeight

minWidth

nextFocusDown

Gradle

Component Tree

LinearLayout(vertical)

txtPaymentTitle

txtMonthlyPayment

imgYears

Design Text

Electric Car Financing

Electric Car Financing

So far in this lesson, we have created the project, added a second activity, and set up the layouts for both activities.

In this part of Lesson 7, we add the Java code to MainActivity that uses the app's default SharedPreferences file to transmit the input data from the MainActivity to the PaymentActivity.

In this lesson's version of this app, we also add Java code to MainActivity to display previously-entered data (if any), using the same default SharedPreferences file.

Source generation ended in 1 s 109 ms (14 minutes ago)

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\res\\layout\\activity_payment.xml [app] - Android Studio

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

ElectricCarFinancing app src main res layout activity_payment.xml [app] C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing\app\src\main\java\edu\udayton\electriccarfinancing>MainActivity.java

1:Project

Resource Manager

Palette

Common Text Buttons Widgets Layouts Containers Google Legacy

Component Tree

LinearLayout(vertical)

Ab txtPaymentTitle- "@string/txt..."

Ab txtMonthlyPayment

imgYears

Default (en-us) 30%

Attributes

imgYears

keepScreenOn

layerType

layout_gravity

center_horizontal

bottom

clip_horizontal

center

clip_vertical

start

right

center_horizontal

fill

fill_horizontal

top

left

center_vertical

fill_vertical

end

layout_height

layout_margin

layout_marginLeft

layout_marginTop

layout_marginRight

layout_marginBottom

layout_weight

layout_width

longClickable

maxHeight

maxWidth

minHeight

minWidth

nextFocusDown

Design Text

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (14 minutes ago)

Event Log

Switch to MainAcitvity's Java code

The screenshot shows the Android Studio interface for a project named "ElectricCarFinancing". The "activity_payment.xml" layout file is open in the design editor. The layout consists of a vertical LinearLayout containing three components: a title text view, a monthly payment text view, and an ImageView. The ImageView displays a hand holding a pen writing a signature on a document. A yellow callout box with the text "Switch to MainAcitvity's Java code" points to the tab bar at the top right, which has tabs for "activity_main.xml", "activity_payment.xml", "PaymentActivity.java", and "MainActivity.java". The "MainActivity.java" tab is currently selected. The "Attributes" panel on the right shows various properties for the ImageView, such as "center_horizontal" checked, "imgYears" selected for the "src" attribute, and "keepScreenOn" checked. The "Component Tree" panel on the left shows the structure of the layout. The bottom navigation bar includes tabs for "Design" and "Text", with "Design" currently selected.

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing app src main java edu udayton electriccarfinancing MainActivity

1:Project Resource Manager

Android

app manifests java

edu.udayton.electriccarfinancing

- MainActivity
- PaymentActivity

edu.udayton.electriccarfinancing (androidTest)

edu.udayton.electriccarfinancing (test)

generatedJava

res

- drawable
- layout
- mipmap
- values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Layout Captures

2: Favorites

Build Variants

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11    } // end onCreate method
12 } // end MainActivity class
```

Add line comments for closing tags for both the onCreate method and the MainActivity class

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (15 minutes ago)

13:28 CRLF UTF-8 4 spaces

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Android

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml

Add MainActivity's data fields (also shown on pages 432-433 of Android Boot Camp)

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6     private int numberOfYears;
7     private float loanAmount;
8     private float interestInput, interestRate;
9
10    @Override
11    protected void onCreate(Bundle savedInstanceState) {
12        super.onCreate(savedInstanceState);
13        setContentView(R.layout.activity_main);
14    } // end onCreate method
15
16} // end MainActivity class
```

MainActivity

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (15 minutes ago) 10:47 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants

Android

1:Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11    private static final int NUMBER_OF_TERMS = 3; ← Add this named constant for the number of loan terms (3, 4 or 5 years)
12
13    @Override
14    protected void onCreate(Bundle savedInstanceState) {
15        super.onCreate(savedInstanceState);
16        setContentView(R.layout.activity_main);
17    } // end onCreate method
18 } // end MainActivity class
```

MainActivity

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (16 minutes ago)

12:50 CRLF UTF-8 4 spaces

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     @Override
18     protected void onCreate(Bundle savedInstanceState) {
19         super.onCreate(savedInstanceState);
20         setContentView(R.layout.activity_main);
21     } // end onCreate method
22 } // end MainActivity class
```

Declare these String named constants for the keys used to store the input data.

On pages 433-434 of *Android Boot Camp*, the section titled "Writing Persistent Data with SharedPreferences" describes storing data as key-value pairs.

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (17 minutes ago) 16:50 CRLF UTF-8 4 spaces

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     @Override
22     protected void onCreate(Bundle savedInstanceState) {
23         super.onCreate(savedInstanceState);
24         setContentView(R.layout.activity_main);
25     } // end onCreate method
26 } // end MainActivity class
```

MainActivity

Declare these String named constants for the default values of the data, since we will be retrieving previously-stored data (if any) in this activity as well.

On pages 438-439 of *Android Boot Camp*, the section titled "Retrieving Preferences" describes retrieving data using keys.

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (17 minutes ago)

20:48 CRLF UTF-8 4 spaces

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android Gradle

1:Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21
22     @Override
23     protected void onCreate(Bundle savedInstanceState) {
24         super.onCreate(savedInstanceState);
25         setContentView(R.layout.activity_main);
26     } // end onCreate method
27
28 } // end MainActivity class
29
30
```

In this lesson, we declare the SharedPreferences as a data field of MainActivity, since it is used in multiple methods.
Type "private Shared" here ...

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (17 minutes ago)

22:5 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing app src main java edu udayton electriccarfinancing MainActivity

1:Project Resource Manager Gradle

1:Project

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml

MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private Shared
22         SharedMemory (android.os)
23         SharedElementCallback (android.app)
24         SharedLibraryInfo (android.content.pm)
25         SharedPreferences (android.content)
26         SharedPreferencesBackupHelper (android.app.backup)
27         SharedElementCallback (android.support.v4.app)
28         SharedPreferencesCompat (android.support.v4.content)
29         OnSharedElementsReadyListener (android.app.SharedElementCallback)
30         OnSharedPreferenceChangeListener (android.content.SharedPreferences)
31         OnSharedElementsReadyListener (android.support.v4.app.SharedEl...
```

Illegal combination of modifiers

... and select this android.content.SharedPreferences class from the code completion menu

Logcat TODO Terminal Build Event Log

Source generation ended in 1 s 109 ms (18 minutes ago) 22:19 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants

Android

1:Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                     LOAN_KEY = "key2",
15                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24
25     protected void onCreate(Bundle savedInstanceState) {
26         super.onCreate(savedInstanceState);
27         setContentView(R.layout.activity_main);
28     } // end onCreate method
29
30 } // end MainActivity class
```

Complete the sharedPref's declaration statement

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (18 minutes ago) 23:42 CRLF UTF-8 4 spaces

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                     LOAN_KEY = "key2",
15                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24     protected void onCreate(Bundle savedInstanceState) {
25         super.onCreate(savedInstanceState);
26         setContentView(R.layout.activity_main);
27
28         // get btnPayment UI component reference
29
30     } // end onCreate method
31
32     } // end MainActivity class
33
34
35 }
```

In the onCreate method, add code to get a reference to the btnPayment Button in MainActivity's layout
Type 'But' here ...

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (18 minutes ago)

32:9 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

1. Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8
9     private float loanAmount;
10
11    private float interestInput, interestRate;
12
13    private static final int NUMBER_OF_TERMS = 3;
14
15    public static final String YEARS_KEY = "key1",
16                                LOAN_KEY = "key2",
17                                RATE_KEY = "key3";
18
19    public static final int DEFAULT_YEARS = 0;
20    public static final float DEFAULT_LOAN = 0;
21    public static final float DEFAULT_RATE = 0;
22
23    private SharedPreferences sharedPref;
24
25    @Override
26    protected void onCreate(Bundle savedInstanceState) {
27        super.onCreate(savedInstanceState);
28        setContentView(R.layout.activity_main);
29
30        // get btnPayment UI component reference
31
32        But
33        }
34    }
```

... and select this android.widget.Button class from the code completion menu

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (18 minutes ago)

32:12 CRLF ï UTF-8 ï 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11    private static final int NUMBER_OF_TERMS = 3;
12
13    public static final String YEARS_KEY = "key1",
14                                LOAN_KEY = "key2",
15                                RATE_KEY = "key3";
16
17    public static final int DEFAULT_YEARS = 0;
18    public static final float DEFAULT_LOAN = 0;
19    public static final float DEFAULT_RATE = 0;
20
21    private SharedPreferences sharedPref;
22
23    @Override
24    protected void onCreate(Bundle savedInstanceState) {
25        super.onCreate(savedInstanceState);
26        setContentView(R.layout.activity_main);
27
28        // get btnPayment UI component reference
29
30        Button btnPayment = (Button)findViewById(R.id.btnPayment); I
31        } // end onCreate method
32    } // end MainActivity class
33
34
35
36
```

Complete the btnPayment's declaration statement

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (19 minutes ago)

33:57 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
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- res
 - drawable
 - layout
 - mipmap
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 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8
9     private float loanAmount;
10    private float interestInput, interestRate;
11
12    private static final int NUMBER_OF_TERMS = 3;
13
14    public static final String YEARS_KEY = "key1",
15                                LOAN_KEY = "key2",
16                                RATE_KEY = "key3";
17
18    public static final int DEFAULT_YEARS = 0;
19    public static final float DEFAULT_LOAN = 0;
20    public static final float DEFAULT_RATE = 0;
21
22    private SharedPreferences sharedPref;
23
24    @Override
25    protected void onCreate(Bundle savedInstanceState) {
26        super.onCreate(savedInstanceState);
27        setContentView(R.layout.activity_main);
28
29        // get btnPayment UI component reference
30
31        Button btnPayment = (Button)findViewById(R.id.btnPayment);
32
33        // create the SharedPreferences object for this activity
34
35        } // end onCreate method
36    } // end MainActivity class
37
38
39
40
```

Add the code to create the SharedPreferences object
Type 'sharedPref = Pref' here ...

MainActivity > onCreate()

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

1:Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11    private static final int NUMBER_OF_TERMS = 3;
12
13    public static final String YEARS_KEY = "key1",
14                                LOAN_KEY = "key2",
15                                RATE_KEY = "key3";
16
17    public static final int DEFAULT_YEARS = 0;
18    public static final float DEFAULT_LOAN = 0;
19    public static final float DEFAULT_RATE = 0;
20
21    private SharedPreferences sharedPref;
22
23    @Override
24    protected void onCreate(Bundle savedInstanceState) {
25        super.onCreate(savedInstanceState);
26        setContentView(R.layout.activity_main);
27
28        // get btnPayment UI component reference
29
30        Button btnPayment = (Button)findViewById(R.id.btnPayment);
31
32        // create the SharedPreferences object for this activity
33
34        sharedPref = Pref
35    } // end on
36    } // end MainAct
37    } // end on
38    } // end MainAct
39    } // end MainAct
40    } // end MainAct
```

... and select this android.preference.PreferenceManager class from the code completion menu

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (20 minutes ago)

37:26 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing app src main java edu udayton electriccarfinancing MainActivity

1:Project Resource Manager Layout Captures Favorites Build Variants

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Android

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml

Gradle Scripts

MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                     LOAN_KEY = "key2",
15                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24     protected void onCreate(Bundle savedInstanceState) {
25         super.onCreate(savedInstanceState);
26         setContentView(R.layout.activity_main);
27
28         // get btnPayment UI component reference
29
30         Button btnPayment = (Button)findViewById(R.id.btnPayment);
31
32         // create the SharedPreferences object for this activity
33
34         SharedPreferences sharedPref = PreferenceManager...
35
36     } // end onCreate method
37
38 } // end MainActivity class
39
40
41
```

Type a period(.) here ...

MainActivity > onCreate()

Logcat TODO Terminal Build

Expression expected; '}' expected.

38:39 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures Z:Structure Favorites Build Variants 2:Favorites Device File Explorer

Android Gradle

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml

MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8
9     private float loanAmount;
10
11    private float interestInput, interestRate;
12
13    private static final int NUMBER_OF_TERMS = 3;
14
15    public static final String YEARS_KEY = "key1",
16                                LOAN_KEY = "key2",
17                                RATE_KEY = "key3";
18
19    public static final int DEFAULT_YEARS = 0;
20    public static final float DEFAULT_LOAN = 0;
21    public static final float DEFAULT_RATE = 0;
22
23    private SharedPreferences sharedPref;
24
25    @Override
26    protected void onCreate(Bundle savedInstanceState) {
27        super.onCreate(savedInstanceState);
28        setContentView(R.layout.activity_main);
29
30        // get btnPayment UI component reference
31
32        Button btnPayment = (Button)findViewById(R.id.btnPayment);
33
34        // create the SharedPreferences object for this activity
35
36        sharedPref = PreferenceManager.
37    } // end onCreate method
38    } // end MainActivity class
39
40
41 }
```

... and select this getDefaultSharedPreferences method from the code completion menu

Logcat TODO Terminal Build Event Log

Expression expected; ' expected. 38:40 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

1 Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24     protected void onCreate(Bundle savedInstanceState) {
25         super.onCreate(savedInstanceState);
26         setContentView(R.layout.activity_main);
27
28         // get btnPayment UI component reference
29
30         Button btnPayment = (Button)findViewById(R.id.btnPayment);
31
32         // create the SharedPreferences object for this activity
33
34         sharedPref = PreferenceManager.getDefaultSharedPreferences(this); [ ] ← Complete this assignment statement for the sharedPref variable
35
36     } // end onCreate method
37
38 } // end MainActivity class
39
40
41
```

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (21 minutes ago)

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

1 Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
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 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                                     LOAN_KEY = "key2",
15                                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24     protected void onCreate(Bundle savedInstanceState) {
25         super.onCreate(savedInstanceState);
26         setContentView(R.layout.activity_main);
27
28         // get btnPayment UI component reference
29
30         Button btnPayment = (Button)findViewById(R.id.btnPayment);
31
32         // create the SharedPreferences object for this activity
33
34         sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
35
36     } // end onCreate method
37
38 } // end MainActivity class
39
40
41
42
43
```

We now add three (helper) methods to MainActivity that will get and display any previously-entered data.

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (21 minutes ago)

41:5 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

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 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8
9     private float loanAmount;
10
11    private float interestInput, interestRate;
12
13    private static final int NUMBER_OF_TERMS = 3;
14
15    public static final String YEARS_KEY = "key1",
16                                LOAN_KEY = "key2",
17                                RATE_KEY = "key3";
18
19    public static final int DEFAULT_YEARS = 0;
20    public static final float DEFAULT_LOAN = 0;
21    public static final float DEFAULT_RATE = 0;
22
23    private SharedPreferences sharedPref;
24
25    @Override
26    protected void onCreate(Bundle savedInstanceState) {
27        super.onCreate(savedInstanceState);
28        setContentView(R.layout.activity_main);
29
30        // get btnPayment UI component reference
31
32        Button btnPayment = (Button)findViewById(R.id.btnPayment);
33
34        // create the SharedPreferences object for this activity
35
36        sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
37
38    } // end onCreate method
39
40
41    // method displays persistent number of years if present
42    private void showCurrentYears()
43    {
44        ...
45    } // end showCurrentYears method
46
47 } // end MainActivity class
```

MainActivity > showCurrentYears()

For the number of years:

1. get a reference to the yearsSpinner
2. retrieve the previously-entered number of years from the sharedPref object
3. if the number of years had been previously entered:
 - 3a. calculate the yearsSpinner index (position)
 - 3b. set the yearsSpinner selection using this index

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
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 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8
9     private float loanAmount;
10
11    private float interestInput, interestRate;
12
13    private static final int NUMBER_OF_TERMS = 3;
14
15    public static final String YEARS_KEY = "key1",
16                                LOAN_KEY = "key2",
17                                RATE_KEY = "key3";
18
19    public static final int DEFAULT_YEARS = 0;
20    public static final float DEFAULT_LOAN = 0;
21    public static final float DEFAULT_RATE = 0;
22
23    private SharedPreferences sharedPref;
24
25    @Override
26    protected void onCreate(Bundle savedInstanceState) {
27        super.onCreate(savedInstanceState);
28        setContentView(R.layout.activity_main);
29
30        // get btnPayment UI component reference
31
32        Button btnPayment = (Button)findViewById(R.id.btnPayment);
33
34        // create the SharedPreferences object for this activity
35
36        sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
37    } // end onCreate method
38
39    // method displays persistent number of years if present
40    private void showCurrentYears()
41    {
42        ...
43    } // end showCurrentYears method
44
45    } // end MainActivity class
46
47
```

We need a reference to the yearsSpinner,
so type 'final Spin' here ...

MainActivity > showCurrentYears()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (22 minutes ago)

44:9 CRLF ï UTF-8 ï 4 spaces ï

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures Z:Structure Favorites Build Variants

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7 private int numberOfYears;
8 private float loanAmount;
9 private float interestInput, interestRate;
10
11 private static final int NUMBER_OF_TERMS = 3;
12
13 public static final String YEARS_KEY = "key1",
14 LOAN_KEY = "key2",
15 RATE_KEY = "key3";
16
17 public static final int DEFAULT_YEARS = 0;
18 public static final float DEFAULT_LOAN = 0;
19 public static final float DEFAULT_RATE = 0;
20
21 private SharedPreferences sharedPref;
22
23 @Override
24 protected void onCreate(Bundle savedInstanceState) {
25 super.onCreate(savedInstanceState);
26 setContentView(R.layout.activity_main);
27
28 // get btnPayment UI component reference
29 Button btnPayment = (Button)findViewById(R.id.btnPayment);
30
31 // create the SharedPreferences object for this activity
32 sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
33 } // end onCreate method
34
35 // method displays persistent number of years if present
36 private void showCurrentYears()
37 {
38 final Spin
39 } //
40 } //
41 } //
42 } //
43 } //
44 } //
45 } //
46 } //
47 } //

... and select this android.widget.Spinner class from the code completion menu

Spinner (android.widget)
SpinnerAdapter (android.widget)
SparseIntArray (android.util)
SpellCheckerInfo (android.view.text)
SecurityParameterIndex (android.net)
AbsSpinner (android.widget)
ThemedSpinnerAdapter (android.widget)
AppCompatSpinner (android.support.v7.widget)
ThemedSpinnerAdapter (android.support.v7.widget)

Logcat TODO Terminal Build Event Log

Source generation ended in 1s 109 ms (22 minutes ago) 44:19 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure Favorites 4:Build Variants 5:Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
1 package edu.udayton.electriccarfinancing;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private int numberOfYears;
8     private float loanAmount;
9     private float interestInput, interestRate;
10
11     private static final int NUMBER_OF_TERMS = 3;
12
13     public static final String YEARS_KEY = "key1",
14                     LOAN_KEY = "key2",
15                     RATE_KEY = "key3";
16
17     public static final int DEFAULT_YEARS = 0;
18     public static final float DEFAULT_LOAN = 0;
19     public static final float DEFAULT_RATE = 0;
20
21     private SharedPreferences sharedPref;
22
23     @Override
24     protected void onCreate(Bundle savedInstanceState) {
25         super.onCreate(savedInstanceState);
26         setContentView(R.layout.activity_main);
27
28         // get btnPayment UI component reference
29         Button btnPayment = (Button)findViewById(R.id.btnPayment);
30
31         // create the SharedPreferences object for this activity
32
33         sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
34     } // end onCreate method
35
36     // method displays persistent number of years if present
37     private void showCurrentYears()
38     {
39         final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner); []
40     } // end showCurrentYears method
41
42     } // end MainActivity class
43
44
45
46
47
48
```

MainActivity > showCurrentYears()

Complete the yearsSpinner declaration/initialization statement

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants 6:Device File Explorer

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
private static final int NUMBER_OF_TERMS = 3;  
  
public static final String YEARS_KEY = "key1",  
    LOAN_KEY = "key2",  
    RATE_KEY = "key3";  
  
public static final int DEFAULT_YEARS = 0;  
public static final float DEFAULT_LOAN = 0;  
public static final float DEFAULT_RATE = 0;  
  
private SharedPreferences sharedPref;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    // get btnPayment UI component reference  
    Button btnPayment = (Button)findViewById(R.id.btnPayment);  
  
    // create the SharedPreferences object for this activity  
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);  
} // end onCreate method  
  
// method displays persistent number of years if present  
private void showCurrentYears()  
{  
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);  
  
    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);  
  
    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:  
    {  
        // convert number of years to (zero-based) yearsSpinner position (index)  
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;  
  
        // set the yearsSpinner selection based on yearsIndex  
        yearsSpinner.setSelection(yearsIndex);  
    }  
} // end showCurrentYears method  
} // end MainActivity class
```

MainActivity > showCurrentYears()

Complete the code for showCurrentYears as shown here

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
public static final float DEFAULT_LOAN = 0;
public static final float DEFAULT_RATE = 0;

private SharedPreferences sharedPref;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // get btnPayment UI component reference
    Button btnPayment = (Button)findViewById(R.id.btnPayment);

    // create the SharedPreferences object for this activity
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
}
} // end showCurrentLoan method
} // end MainActivity class
```

MainActivity > showCurrentLoan()

For the loan amount:

1. get a reference to the txtLoan text field
2. retrieve the previously-entered loan amount from the sharedPref object
3. if the loan amount had been previously entered:
 - 3a. display the loan amount as a String in the txtLoan text field

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
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 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
public static final float DEFAULT_LOAN = 0;
public static final float DEFAULT_RATE = 0;

private SharedPreferences sharedPref;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // get btnPayment UI component reference
    Button btnPayment = (Button)findViewById(R.id.btnPayment);

    // create the SharedPreferences object for this activity
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
} // end showCurrentLoan method
} // end MainActivity class
```

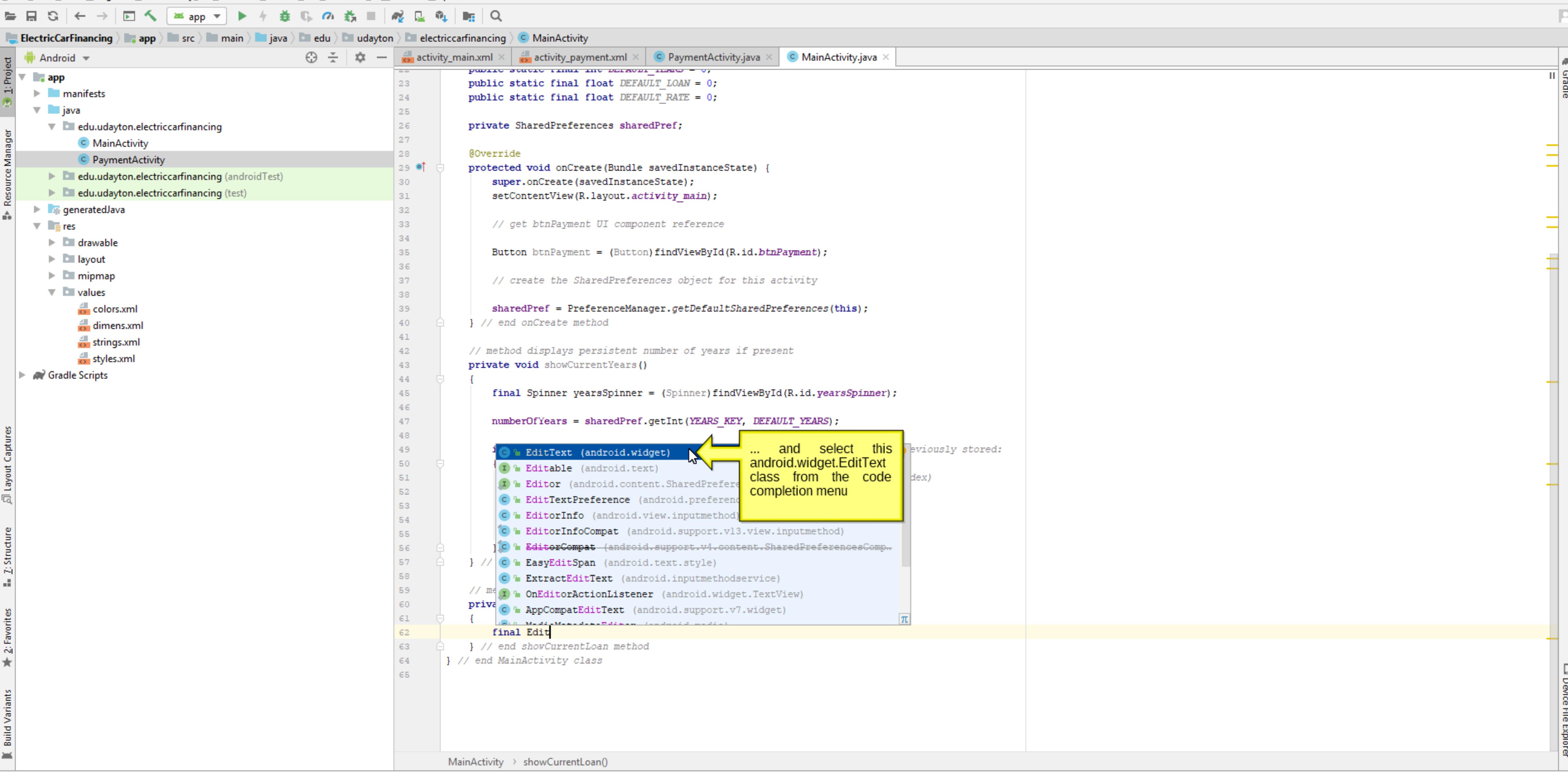
We need a reference to the txtLoan text field,
so type 'final Edit' here ...

MainActivity > showCurrentLoan()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (26 minutes ago)

62:9 CRLF ÷ UTF-8 ÷ 4 spaces ÷



ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
public static final float DEFAULT_LOAN = 0;
public static final float DEFAULT_RATE = 0;

private SharedPreferences sharedPref;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // get btnPayment UI component reference
    Button btnPayment = (Button)findViewById(R.id.btnPayment);

    // create the SharedPreferences object for this activity
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
} // end showCurrentLoan method
} // end MainActivity class
```

MainActivity > showCurrentLoan()

Complete the txtLoan declaration/initialization statement

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // get btnPayment UI component reference
    Button btnPayment = (Button)findViewById(R.id.btnPayment);

    // create the SharedPreferences object for this activity
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);

    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
} // end showCurrentLoan method
} // end MainActivity class
```

MainActivity

Complete the code for showCurrentLoan as shown here

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test)

generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml

Gradle Scripts

Layout Captures

Structure

Favorites

Build Variants

Device File Explorer

```
37 // create the SharedPreferences object for this activity
38
39     sharedPref = PreferenceManager.getDefaultSharedPreferences(this);
40 } // end onCreate method
41
42 // method displays persistent number of years if present
43 private void showCurrentYears()
44 {
45     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
46
47     numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
48
49     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
50     {
51         // convert number of years to (zero-based) yearsSpinner position (index)
52         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
53
54         // set the yearsSpinner selection based on yearsIndex
55         yearsSpinner.setSelection(yearsIndex);
56     }
57 }
58 } // end showCurrentYears method
59
60 // method displays persistent loan amount if present
61 private void showCurrentLoan()
62 {
63     final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
64
65     loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);
66
67     if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
68     {
69         txtLoan.setText(Float.toString(loanAmount));
70     }
71 } // end showCurrentLoan method
72
73 // method display persistent interest rate if present
74 private void showCurrentRate()
75 {
76     [
77 } // end showCurrentRate method
78 } // end MainActivity class
```

MainActivity > showCurrentRate()

For the interest rate:

1. get a reference to the txtInterest text field
2. retrieve the previously-entered loan amount from the sharedPref object
3. if the interest rate had been previously entered:
 - 3a. display the interest rate as a String in the txtInterest text field

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (29 minutes ago)

Event Log

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

```
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);

    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
} // end showCurrentLoan method

// method display persistent interest rate if present
private void showCurrentRate()
{
    final EditText txtInterest= (EditText)findViewById(R.id.txtInterest);

    interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);

    if (interestRate > DEFAULT_RATE) // if the interest rate had been previously stored:
    {
        txtInterest.setText(Float.toString(100 * interestRate));
    }
} // end showCurrentRate method
} // end MainActivity class
```

Complete the code for showCurrentRate as shown here

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
public static final int DEFAULT_YEARS = 0;
public static final float DEFAULT_LOAN = 0;
public static final float DEFAULT_RATE = 0;

private SharedPreferences sharedPref;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // get btnPayment UI component reference
    Button btnPayment = (Button)findViewById(R.id.btnPayment);

    // create the SharedPreferences object for this activity
    sharedPref = PreferenceManager.getDefaultSharedPreferences(this);

    // display persistent data if present
    showCurrentYears();
    showCurrentLoan();
    showCurrentRate();

} // end onCreate method
```

In the onCreate method, add calls to the newly-added helper methods

```
// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method
```

```
// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
```

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1s 109 ms (32 minutes ago)

46:27 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Layout Captures

2:Structure

2:Favorites

Build Variants

Device File Explorer

```
    // display persistent data if present
    showCurrentYears();
    showCurrentLoan();
    showCurrentRate();

    // create listener for btnPayment
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
    int numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
    float loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
} // end showCurrentLoan method

// method display persistent interest rate if present
private void showCurrentRate()
{
    final EditText txtInterest= (EditText)findViewById(R.id.txtInterest);
    float interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);
}
```

Add the OnClickListener for the btnPayment Button
Type 'View' here ...

MainActivity > onCreate()

Logcat TODO Terminal Build

1 Event Log

Source generation ended in 1 s 109 ms (33 minutes ago)

50:9 CRLF ÷ UTF-8 ÷ 4 spaces ÷

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

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```

// display persistent data if present
showCurrentYears();
showCurrentLoan();
showCurrentRate();

// create listener for btnPayment
View
View (android.view)
ViewAnimator (android.widget)
ViewFlipper (android.widget)
ViewSwitcher (android.widget)
ViewModelStoreOwner (android.arch.lifecycle)
ViewModel (android.arch.lifecycle)
ViewModelStore (android.arch.lifecycle)
ViewAnimationUtils (android.view)
ViewBinder (android.widget.SimpleAdapter)
ViewBinder (android.widget.SimpleCursorAdapter)
ViewBinder (android.widget.SimpleCursorTreeAdapter)

... and select the android.view.View class from the code completion menu
er);

seen previously stored:
on (index)

// set the yearsSpinner selection based on yearsIndex
yearsSpinner.setSelection(yearsIndex);
}
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
 final EditText txtLoan = (EditText) findViewById(R.id.txtLoan);

 loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

 if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
 {
 txtLoan.setText(Float.toString(loanAmount));
 }
} // end showCurrentLoan method

// method display persistent interest rate if present
private void showCurrentRate()
{
 final EditText txtInterest= (EditText) findViewById(R.id.txtInterest);

 interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);
}

MainActivity > onCreate()

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (33 minutes ago)

50:13 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Layout Captures

2:Structure

2:Favorites

Build Variants

Device File Explorer

```
    42 // display persistent data if present
    43
    44
    45     showCurrentYears();
    46     showCurrentLoan();
    47     showCurrentRate();
    48
    49 // create listener for btnPayment
    50
    51     View
    52 } // end onCreate method Type a period(.) here ...
    53
    54 // method displays persistent number of years if present
    55 private void showCurrentYears()
    56 {
    57     final Spinner yearsSpinner = (Spinner) findViewById(R.id.yearsSpinner);
    58
    59     int numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
    60
    61     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    62     {
    63         // convert number of years to (zero-based) yearsSpinner position (index)
    64         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
    65
    66         // set the yearsSpinner selection based on yearsIndex
    67         yearsSpinner.setSelection(yearsIndex);
    68     }
    69 } // end showCurrentYears method
    70
    71 // method displays persistent loan amount if present
    72 private void showCurrentLoan()
    73 {
    74     final EditText txtLoan = (EditText) findViewById(R.id.txtLoan);
    75
    76     float loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);
    77
    78     if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    79     {
    80         txtLoan.setText(Float.toString(loanAmount));
    81     }
    82 } // end showCurrentLoan method
    83
    84 // method display persistent interest rate if present
    85 private void showCurrentRate()
    86 {
    87     final EditText txtInterest= (EditText) findViewById(R.id.txtInterest);
    88
    89     interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);
```

MainActivity > onCreate()

Logcat TODO Terminal Build Event Log

1 expected 51:13 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
    // display persistent data if present
    showCurrentYears();
    showCurrentLoan();
    showCurrentRate();

    // create listener for btnPayment
    View.OnClickListener onClickListener = new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            ...
        }
    };
    btnPayment.setOnClickListener(onClickListener);

    // set the yearsSpinner selection based on yearsIndex
    yearsSpinner.setSelection(yearsIndex);
}

// end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);

    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
}

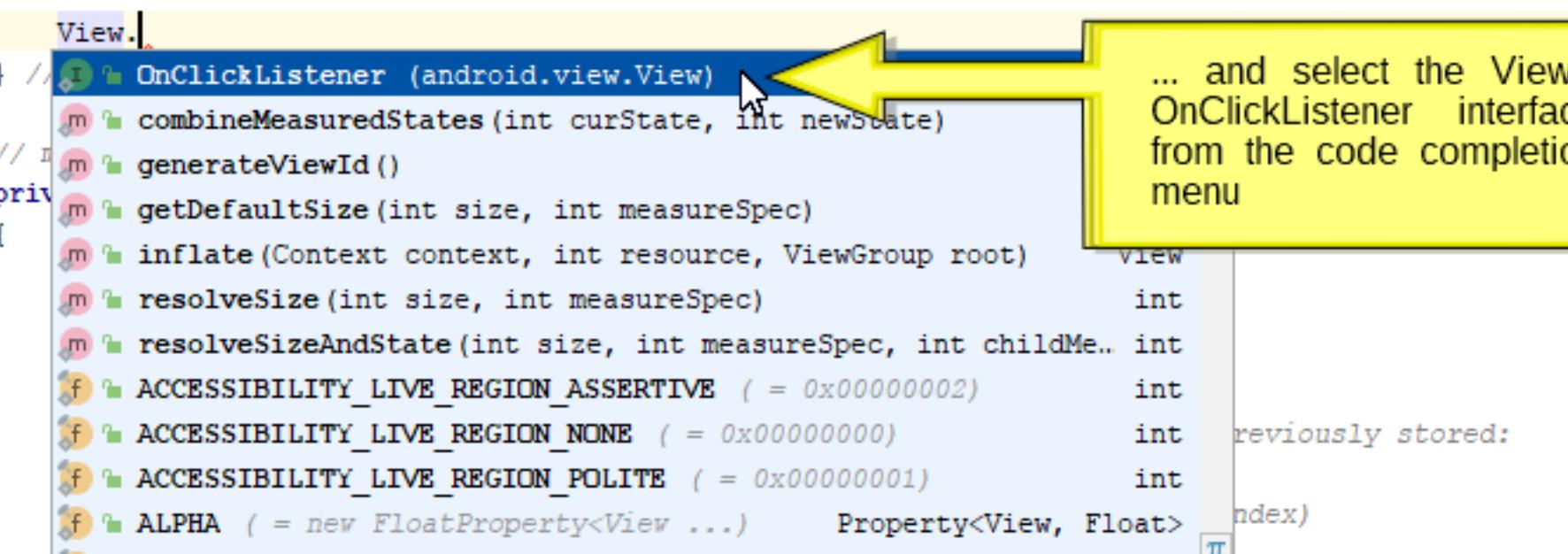
// end showCurrentLoan method

// method display persistent interest rate if present
private void showCurrentRate()
{
    final EditText txtInterest= (EditText)findViewById(R.id.txtInterest);

    interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);
}
```

MainActivity > onCreate()

... and select the View's OnClickListener interface from the code completion menu



ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Layout Captures

2:Structure

2:Favorites

Build Variants

Device File Explorer

```
    42 // display persistent data if present
    43
    44
    45     showCurrentYears();
    46     showCurrentLoan();
    47     showCurrentRate();
    48
    49     // create listener for btnPayment
    50
    51     View.OnClickListener[] View.OnClickListener];
    52 } // end onCreate method
    53
    54     // method displays persistent number of years if pres
    55     private void showCurrentYears()
    56     {
    57         final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
    58
    59         numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
    60
    61         if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    62         {
    63             // convert number of years to (zero-based) yearsSpinner position (index)
    64             int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
    65
    66             // set the yearsSpinner selection based on yearsIndex
    67             yearsSpinner.setSelection(yearsIndex);
    68         }
    69     } // end showCurrentYears method
    70
    71     // method displays persistent loan amount if present
    72     private void showCurrentLoan()
    73     {
    74         final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
    75
    76         loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);
    77
    78         if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    79         {
    80             txtLoan.setText(Float.toString(loanAmount));
    81         }
    82     } // end showCurrentLoan method
    83
    84     // method display persistent interest rate if present
    85     private void showCurrentRate()
    86     {
    87         final EditText txtInterest= (EditText)findViewById(R.id.txtInterest);
    88
    89         interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);

```

MainActivity > onCreate()

Logcat TODO Terminal Build Event Log

1 expected 51:29 CRLF UTF-8 4 spaces

A yellow callout box with a yellow arrow points from the text "After typing a space, type 'btnPaymentListener = new View'" to the word "OnClickListener" in the code.

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
    42 // display persistent data if present
    43
    44
    45     showCurrentYears();
    46     showCurrentLoan();
    47     showCurrentRate();
    48
    49     // create listener for btnPayment
    50
    51     View.OnClickListener btnPaymentListener = new View.OnClickLister
    52 } // end onCreate method
    53
    54     // method displays persistent number of years
    55     private void showCurrentYears()
    56     {
    57         final Spinner yearsSpinner = (Spinner)fir
    58
    59         numberO
    60
    61         if (numberO
    62         {
    63             // convert number of years to (zero-based)
    64             int yearsIndex = numberO
    65
    66             // set the yearsSpinner selection based on yearsIndex
    67             yearsSpinner.setSelection(yearsIndex);
    68
    69     } // end showCurrentYears method
    70
    71     // method displays persistent loan amount if present
    72     private void showCurrentLoan()
    73     {
    74         final EditText txtLoan = (EditText)findViewByI
    75
    76         loanAmount =
    77
    78         if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    79         {
    80             txtLoan.setText(Float.toString(loanAmount));
    81
    82     } // end showCurrentLoan method
    83
    84     // method display persistent interest rate if present
    85     private void showCurrentRate()
    86     {
    87         final EditText txtInterest= (EditText)findViewByI
    88
    89         interestRate = sharedPref.getFloat(RATE_KEY, DEFAULT_RATE);
```

MainActivity > onCreate()

... and select this OnClickListener interface from the code completion menu

Press Ctrl+Shift+Space to show only variants that are suitable by type

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Shared code

```
// display persistent data if present
showCurrentYears();
showCurrentLoan();
showCurrentRate();

// create listener for btnPayment
View.OnClickListener btnPaymentListener = new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // ...
    }
}; // end onCreate method

// method displays persistent years
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);

    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
} // end showCurrentLoan method

// method display persistent interest rate if present
```

Add a semi-colon (;) to the end of the btnPaymentListener's declaration/creation statement

Layout Captures

Structure

Favorites

Build Variants

Device File Explorer

Logcat TODO Terminal Build

Source generation ended in 1 s 109 ms (35 minutes ago)

56:11 CRLF ÷ UTF-8 ÷ 4 spaces ÷

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures Favorites Build Variants Device File Explorer

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
// display persistent data if present
showCurrentYears();
showCurrentLoan();
showCurrentRate();

// create listener for btnPayment
View.OnClickListener btnPaymentListener = new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        } // end onClick handler
    };
} // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);

    if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
    {
        // convert number of years to (zero-based) yearsSpinner position (index)
        int yearsIndex = numberOfYears - NUMBER_OF_TERMS;

        // set the yearsSpinner selection based on yearsIndex
        yearsSpinner.setSelection(yearsIndex);
    }
} // end showCurrentYears method

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);

    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
} // end showCurrentLoan method

// method display persistent interest rate if present
```

Add a line comment to tag the end of the onClick handler

MainActivity > onCreate() > new OnClickListener

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

Shared Preferences

```
42 // display persistent data if present
43
44 showCurrentYears();
45 showCurrentLoan();
46 showCurrentRate();
47
48 // create listener for btnPayment
49
50 View.OnClickListener btnPaymentListener = new View.OnClickListener()
51 {
52     // UI references to the Spinner and text fields
53     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
54     final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
55     final EditText txtInterest = (EditText)findViewById(R.id.txtInterest);
56
57     @Override
58     public void onClick(View v) {
59         // end onClick handler
60     }
61 }
62
63 // end onCreate method
64
65 // method displays persistent number of years if present
66 private void showCurrentYears()
67 {
68     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
69
70     int numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
71
72     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
73     {
74         // convert number of years to (zero-based) yearsSpinner position (index)
75         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
76
77         // set the yearsSpinner selection based on yearsIndex
78         yearsSpinner.setSelection(yearsIndex);
79     }
80 }
81
82 // method displays persistent loan amount if present
83 private void showCurrentLoan()
84 {
85     final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
86
87     float loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);
88
89     if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
```

In the new listener's scope, add reference variables to the yearsSpinner, as well as the txtLoan and txtInterest text fields

Layout Captures Z:Structure Favorites 2:Favorites Device File Explorer

Logcat TODO Terminal Build

Source generation ended in 1s 109 ms (37 minutes ago)

57:13 CRLF UTF-8 4 spaces

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Gradle

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Layout Captures

2:Structure

2:Favorites

Build Variants

Device File Explorer

```
activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java
```

Shared code editor - MainActivity.java

```
42 // display persistent data if present
43
44 showCurrentYears();
45 showCurrentLoan();
46 showCurrentRate();
47
48 // create listener for btnPayment
49
50 View.OnClickListener btnPaymentListener = new View.OnClickListener()
51 {
52     // UI references to the Spinner and text fields
53     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
54     final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
55     final EditText txtInterest = (EditText)findViewById(R.id.txtInterest);
56
57     // helper method to validate interest rate (should be > 0 and <= 100)
58     private boolean validInterestInput(float input)
59     {
60         return (input > 0 && input <= 100);
61     } // end validInterestInput method
62
63
64     @Override
65     public void onClick(View v) {
66
67         } // end onClick handler
68     };
69 }
70 } // end onCreate method
71
72 // method displays persistent number of years if present
73 private void showCurrentYears()
74 {
75     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
76
77     int numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
78
79     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
80     {
81         // convert number of years to (zero-based) yearsSpinner position (index)
82         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
83
84         // set the yearsSpinner selection based on yearsIndex
85         yearsSpinner.setSelection(yearsIndex);
86     }
87 }
88
89 // method displays persistent loan amount if present
90 private void showCurrentLoan()
```

MainActivity > onCreate() > new OnClickListener

In addition, add this helper boolean method to validate the interest rate entered by the user

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Android

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Resource Manager

Gradle

2:Layout Captures

3:Structure

4:Favorites

5:Build Variants

6:Logcat

7:TODO

8:Terminal

9:Build

10:Source generation ended in 1 s 109 ms (41 minutes ago)

11:66 In the onClick method:

1. get the position (index) of the number of years from the yearsSpinner

2. convert the index to the number of years (3, 4 or 5)

3. if the number of years is invalid (highly unlikely), show a Toast error message and end the event handling

4. get the loan amount from txtLoan and convert it to a float, if data was entered; otherwise, show a Toast error message and end the event handling

5. get the interest rate from txtInterest and convert it to a float, if data was entered; otherwise, show a Toast error message and end the event handling

6. if data was entered, validate the interest rate (using the validInterestRate method); if the interest rate is invalid, throw an Exception to end the event handling with a Toast error message

7. get a SharedPreferences.Editor for the sharedPref object and write the persistent data

8. launch the PaymentActivity

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

SharedPref

```
    // display persistent data if present
    showCurrentYears();
    showCurrentLoan();
    showCurrentRate();

    // create listener for btnPayment
    View.OnClickListener btnPaymentListener = new View.OnClickListener()
    {
        // UI references to the Spinner and text fields
        final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
        final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
        final EditText txtInterest = (EditText)findViewById(R.id.txtInterest);

        // helper method to validate interest rate (should be > 0 and <= 100)
        private boolean validInterestInput(float input)
        {
            return (input > 0 && input <= 100);
        } // end validInterestInput method

        @Override
        public void onClick(View v)
        {
            int yearsIndex = yearsSpinner.getSelectedItemPosition();
            int numberOfYears = sharePref.getInt("years", 3);
            if (numberOfYears > 5)
            {
                // convert number of years to index
                int yearsIndex = (int) (Math.floor((years - 3) / 1));
                // set the years spinner
                yearsSpinner.setSelection(yearsIndex);
            }
        } // end onClick method
    }; // end btnPaymentListener
} // end onCreate method

// method displays persistent years
private void showCurrentYears()
{
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
    int years = sharePref.getInt("years", 3);
    yearsSpinner.setSelection(years);
}

// method displays persistent loan amount if present
private void showCurrentLoan()
```

MainActivity > onCreate() > new OnClickListener > onClick()

1 Event Log

66:17 CRLF ï UTF-8 ï 4 spaces ï

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
private boolean validateInterestInput(double input) {
    return (input > 0 && input <= 100);
} // end validateInterestInput method

@Override
public void onClick(View v) {
    // get (zero-based) index of chosen Spinner item
    int yearsIndex = yearsSpinner.getSelectedItemPosition();

    // convert yearsIndex to number of years
    numberOfYears = yearsIndex + NUMBER_OF_TERMS;

    // on the incredibly unlikely chance that the number of years
    // is invalid, show an error message (toast) and we're done here
    if (numberOfYears < 3 || numberOfYears > 5) {
        Toast toast = Toast.makeText(MainActivity.this,
            "Invalid number of years: " + numberOfYears,
            Toast.LENGTH_LONG);
        toast.show();
        return;
    }

    // get loan amount and convert it to a float with error-checking
    String loanAmtInput = txtLoan.getText().toString();

    try {
        loanAmount = Float.parseFloat(loanAmtInput);
    }
    catch (Exception ex) {
        Toast toast = Toast.makeText(MainActivity.this,
            "Invalid loan amount: " + loanAmtInput,
            Toast.LENGTH_LONG);
        toast.show();
        return;
    }
} // end onClick handler
}; // end onCreate method

// method displays persistent number of years if present
private void showCurrentYears() {
    final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);

    numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
}
```

MainActivity > onCreate() > new OnClickListener

Add this code to onClick for steps 1 - 3 of the algorithm shown on the previous page

Add this code to onClick for step 4 of the algorithm shown on the previous page

Layout Captures

Z:Structure

Favorites

Build Variants

Device File Explorer

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager Layout Captures 2:Structure Favorites Build Variants Device File Explorer

```
try {
    loanAmount = Float.parseFloat(loanAmtInput);
}
catch (Exception ex) {
    Toast toast = Toast.makeText(MainActivity.this,
        "Invalid loan amount: " + loanAmtInput,
        Toast.LENGTH_LONG);
    toast.show();
    return;
}

// get interest rate, convert it to a float, and then
// from percentage to decimal, with error-checking

String interestRateInput = txtInterest.getText().toString();

try {
    interestInput = Float.parseFloat(interestRateInput);

    if (validInterestInput(interestInput))
    {
        interestRate = (float) (interestInput / 100.0);
    }
    else
    {
        throw new Exception("invalid interest rate: " + interestRateInput);
    }
}
catch (NumberFormatException ex)
{
    Toast toast = Toast.makeText(MainActivity.this,
        "Invalid interest rate: " + interestRateInput,
        Toast.LENGTH_LONG);
    toast.show();
    return;
}
catch (Exception ex)
{
    Toast toast = Toast.makeText(MainActivity.this,
        ex.getMessage(),
        Toast.LENGTH_LONG);
    toast.show();
    return;
}

} // end onClick handler
}; // end onCreate method
} // method displays_persistent_number_of_years_if_present
```

MainActivity > onCreate() > new OnClickListener

Add this code to onClick for step 5 of the algorithm shown on page 43

Note that we distinguish the exception handling for a NumberFormatException (no data entered) from the exception handling for any Exception (invalid data entered).

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Structure Favorites Build Variants Device File Explorer

```
117 }  
118     catch (NumberFormatException ex)  
119     {  
120         Toast toast = Toast.makeText(MainActivity.this,  
121             "Invalid interest rate: " + interestRateInput,  
122             Toast.LENGTH_LONG);  
123         toast.show();  
124         return;  
125     }  
126     catch (Exception ex)  
127     {  
128         Toast toast = Toast.makeText(MainActivity.this,  
129             ex.getMessage(),  
130             Toast.LENGTH_LONG);  
131         toast.show();  
132         return;  
133     }  
134  
135     // write persistent data to the SharedPreferences object  
136  
137     SharedPreferences.Editor editor = sharedPref.edit();  
138  
139     editor.putInt(YEARS_KEY, numberOfYears);  
140     editor.putFloat(LOAN_KEY, loanAmount);  
141     editor.putFloat(RATE_KEY, interestRate);  
142  
143     editor.commit();  
144  
145     // start the payment activity via an explicit Intent  
146  
147     Intent intent = new Intent(MainActivity.this, PaymentActivity.class);  
148     startActivityForResult(intent);  
149 } // end onClick handler  
150 };  
151 } // end onCreate method  
152  
153 // method displays persistent number of years if present  
154 private void showCurrentYears()  
155 {  
156     final Spinner yearsSpinner = (Spinner) findViewById(R.id.yearsSpinner);  
157  
158     numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);  
159  
160     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:  
161     {  
162         // convert number of years to (zero-based) yearsSpinner position (index)  
163         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;  
164  
165         // set the yearsSpinner selection based on yearsIndex
```

Add this code to onClick for steps 6 and 7 of the algorithm shown on page 43

MainActivity > onCreate() > new OnClickListener

ElectricCarFinancing [C:\Users\nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing > app > src > main > java > edu > udayton > electriccarfinancing > MainActivity

1:Project Resource Manager 2:Layout Captures 3:Structure 4:Favorites 5:Build Variants Device File Explorer

Android

1:Project

app

- manifests
- java
 - edu.udayton.electriccarfinancing
 - MainActivity
 - PaymentActivity
 - edu.udayton.electriccarfinancing (androidTest)
 - edu.udayton.electriccarfinancing (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

```
135 // write persistent data to the SharedPreferences object
136
137 SharedPreferences.Editor editor = sharedPref.edit();
138
139 editor.putInt(YEARS_KEY, numberOfYears);
140 editor.putFloat(LOAN_KEY, loanAmount);
141 editor.putFloat(RATE_KEY, interestRate);
142
143 editor.commit();
144
145 // start the payment activity via an explicit Intent
146
147 Intent intent = new Intent(MainActivity.this, PaymentActivity.class);
148 startActivity(intent);
149 } // end onClick handler
150 }
151
152 // set the btnPaymentListener for the btnPayment object
153 btnPayment.setOnClickListener(btnPaymentListener);
154 } // end onCreate method
155
156 // method displays persistent number of years if present
157 private void showCurrentYears()
158 {
159     final Spinner yearsSpinner = (Spinner)findViewById(R.id.yearsSpinner);
160
161     numberOfYears = sharedPref.getInt(YEARS_KEY, DEFAULT_YEARS);
162
163     if (numberOfYears > DEFAULT_YEARS) // if the number of years had been previously stored:
164     {
165         // convert number of years to (zero-based) yearsSpinner position (index)
166         int yearsIndex = numberOfYears - NUMBER_OF_TERMS;
167
168         // set the yearsSpinner selection based on yearsIndex
169         yearsSpinner.setSelection(yearsIndex);
170     }
171 } // end showCurrentYears method
172
173 // method displays persistent loan amount if present
174 private void showCurrentLoan()
175 {
176     final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
177
178     loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);
179
180     if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
181     {
182         txtLoan.setText(Float.toString(loanAmount));
183     }
184 }
```

MainActivity > onCreate()

At the end of the onCreate method, add this code to set the btnPaymentListener as the btnPayment's click listener

ElectricCarFinancing [C:\Users\Nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing] - ...\\app\\src\\main\\java\\edu\\udayton\\electriccarfinancing\\MainActivity.java [app] - Android Studio

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

ElectricCarFinancing app src main java edu

[app] C:\Users\Nbashias1\Documents\AndroidStudioProjects\ElectricCarFinancing\app\src\main\java\edu\udayton\electriccarfinancing\PaymentActivity.java

1:Project

Resource Manager

Gradle

activity_main.xml activity_payment.xml PaymentActivity.java MainActivity.java

app manifests java edu.udayton.electriccarfinancing MainActivity PaymentActivity

edu.udayton.electriccarfinancing (androidTest) edu.udayton.electriccarfinancing (test)

generatedJava res

drawable layout mipmap values

colors.xml dimens.xml strings.xml styles.xml

Gradle Scripts

Layout Captures

2:Structure

2:Favorites

Build Variants

MainActivity > onCreate()

```
// write persistent data to the SharedPreferences object
SharedPreferences.Editor editor = sharedPref.edit();
editor.putInt(YEARS_KEY, numberOfYears);
editor.putFloat(LOAN_KEY, loanAmount);
editor.putFloat(RATE_KEY, interestRate);
editor.commit();

// start the payment activity via an explicit Intent
Intent intent = new Intent(MainActivity.this, PaymentActivity.class);
startActivity(intent);
} // end onClick handler

// set the btnPaymentListener for the btnPayment object
btnPayment.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent intent = new Intent(MainActivity.this, PaymentActivity.class);
        startActivity(intent);
    }
}); // end onClick

// method displays persistent loan amount if present
private void showCurrentLoan()
{
    final EditText txtLoan = (EditText)findViewById(R.id.txtLoan);
    loanAmount = sharedPref.getFloat(LOAN_KEY, DEFAULT_LOAN);

    if (loanAmount > DEFAULT_LOAN) // if the loan amount had been previously stored:
    {
        txtLoan.setText(Float.toString(loanAmount));
    }
}
```

This concludes Part 3 of this lesson, in which we added code to MainActivity.java that uses the app's default SharedPreferences file to transmit input data to the PaymentActivity, as well as display any previously-entered data.

In Part 4 of Lesson 7, we add the Java code to the PaymentActivity to: retrieve the input data from the SharedPreferences file, calculate and display both the monthly payment, and show the number of years as one of three images.

Device File Explorer