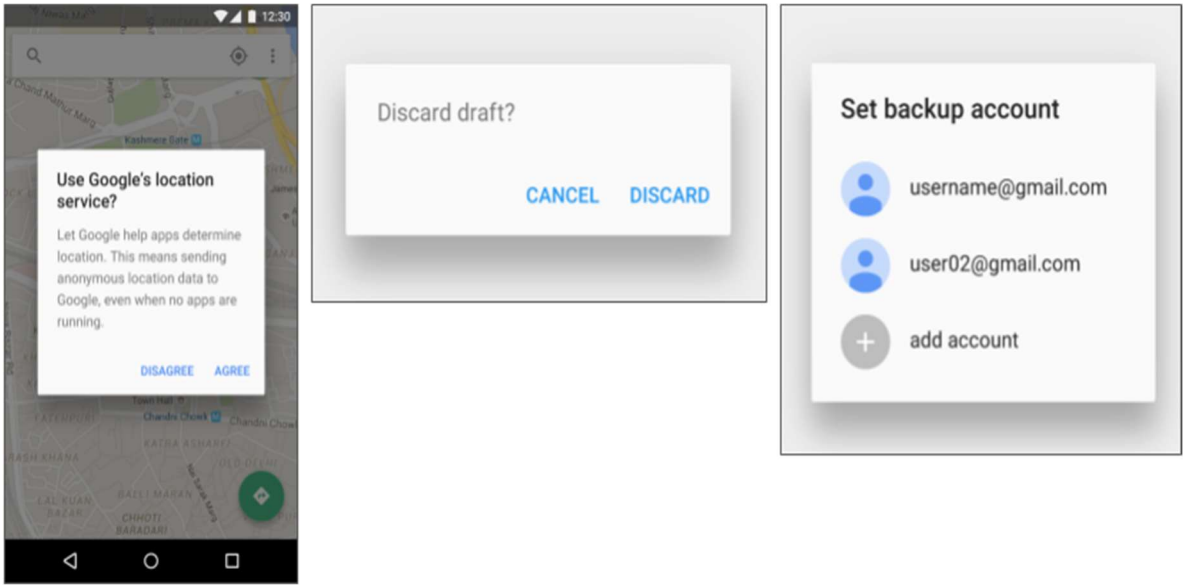
Dialogs and pickers

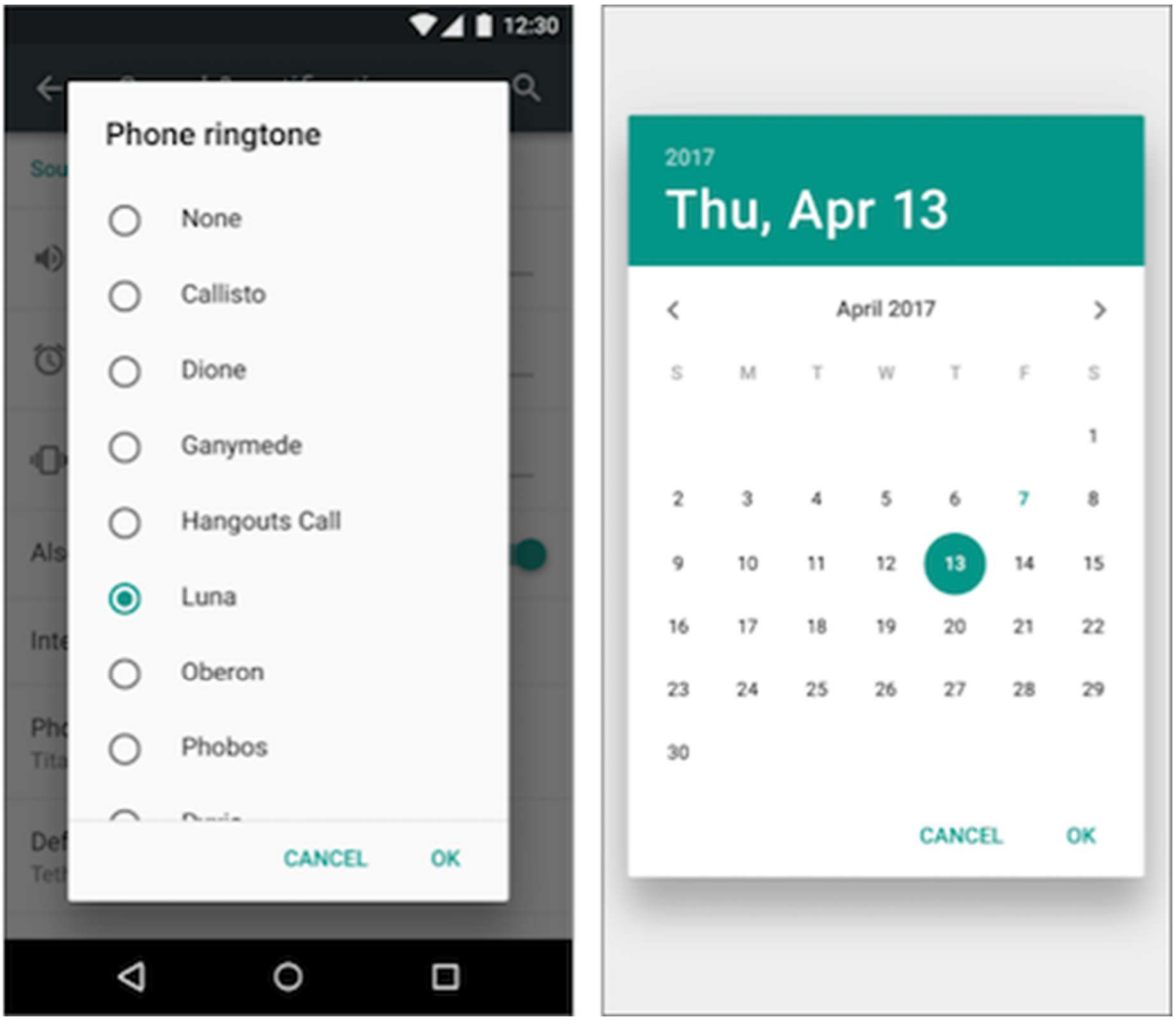
A dialog is a window that appears on top of the display or fills the display, interrupting the flow of *Activity*. Dialogs inform users about a specific task and may contain critical information, require decisions, or involve multiple tasks.

For example, an alert dialog might require the user to click **Continue** after reading it, or give the user a choice to agree with an action by clicking a positive button (such as **OK** or **Accept**), or to disagree by clicking a negative button (such as **Cancel**).

You can also use a dialog to provide choices in the style of radio buttons, as shown on the right side of the figure below.



The base class for all dialog components is a Dialog. There are several useful *Dialog* subclasses for alerting the user on a condition, showing status or progress, displaying information on a secondary device, or selecting or confirming a choice, as shown on the left side of the figure below. The Android SDK also provides ready-to-use dialog subclasses such as pickers for picking a time or a date, as shown on the right side of the figure below. Pickers allow users to enter information in a predetermined, consistent format that reduces the chance for input error.



Dialogs always retain focus until dismissed or a required action has been taken.

Tip: Best practices recommend using dialogs sparingly as they interrupt the user's workflow. Read the Dialogs design guide for additional best design practices, and Dialogs in the Android developer documentation for code examples.

The Dialog class is the base class for dialogs, but you should avoid instantiating *Dialog* directly unless you are creating a custom dialog. For standard Android dialogs, use one of the following subclasses:

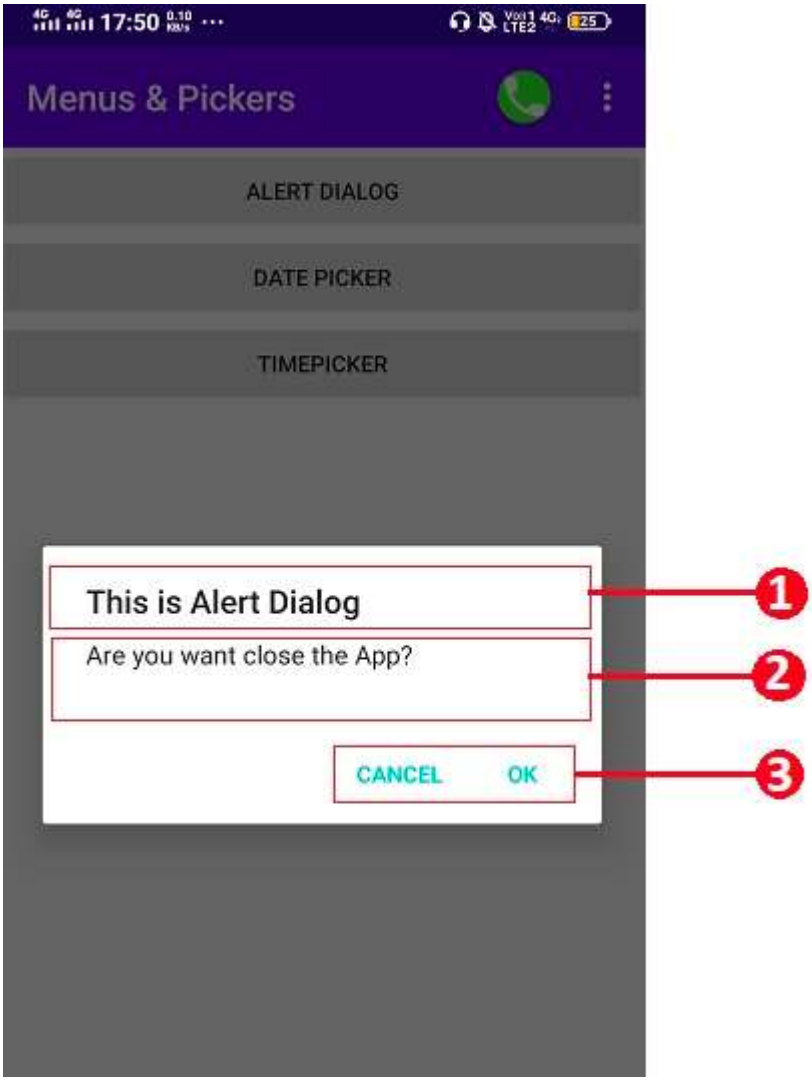
- **AlertDialog**: A dialog that can show a title, up to three buttons, a list of selectable items, or a custom layout.
- **DatePickerDialog**: A dialog with a predefined UI that lets the user select a date.
- **TimePickerDialog**: A dialog with a predefined UI that lets the user select a time.

Showing an alert dialog

Alerts are urgent interruptions, requiring acknowledgement or action, that inform the user about a situation as it occurs, or an action before it occurs (as in discarding a draft). You can provide buttons in an alert to make a decision.

For example, an alert dialog might require the user to click **Continue** after reading it, or give the user a choice to agree with an action by clicking a positive button (such as **OK** or **Accept**), or to disagree by clicking a negative button (such as **Disagree** or **Cancel**).

Use the AlertDialog subclass of the Dialog class to show a standard dialog for an alert. The *AlertDialog* class allows you to build a variety of dialog designs. An alert dialog can have the following regions (refer to the diagram below):



1. ***Title***: A title is optional. Most alerts don't need titles. If you can summarize a decision in a sentence or two by either asking a question (such as, "Discard draft?") or making a statement related to the action buttons (such as, "Click OK to continue"), don't bother with a title. Use a title if the situation is high-risk, such as the potential loss of connectivity or data, and the content area is occupied by a detailed message, a list, or custom layout.
2. ***Content area***: The content area can display a message, a list, or other custom layout.
3. ***Action buttons***: You should use no more than three action buttons in a dialog, and most have only two.

Building the AlertDialog

The AlertDialog.Builder class uses the builder design pattern, which makes it easy to create an object from a class that has a lot of required and optional attributes and would therefore require

a lot of parameters to build. Without this pattern, you would have to create constructors for combinations of required and optional attributes; with this pattern, the code is easier to read and maintain. For more information about the builder design pattern, see Builder pattern.

Use AlertDialog.Builder to build a standard alert dialog, with setTitle() to set its title, setMessage() to set its message, and setPositiveButton() and setNegativeButton() to set its buttons. If *AlertDialog.Builder* is not recognized as you enter it, you may need to add the following *import* statements to the *Activity*:

```
import android.content.DialogInterface;
import android.support.v7.app.AlertDialog;
```

The following creates the dialog object *(alertDialog)* and sets the title (the string resource *alert*title_) and message (the string resource *alert*message_):

```
AlertDialog.Builder alertDialog = new AlertDialog.Builder(this);
alertDialog.setTitle("This is Alert Dialog");
alertDialog.setMessage("Are you want close the App?");
```

Setting the button actions for the alert dialog
Use the setPositiveButton() and setNegativeButton() methods to set the button actions for the alert dialog. These methods require a title for the button and the DialogInterface.OnClickListener class that defines the action to take when the user presses the button:

```
alertDialog.setPositiveButton("Ok", new DialogInterface.OnClickListener() {
    @Override
    public void onClick(DialogInterface dialog, int which) {
      // User clicked OK button.
      // ... Action to take when OK is clicked.
    }
});
alertDialog.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
    @Override
    public void onClick(DialogInterface dialog, int which) {
       // User clicked the CANCEL button.
       // ... Action to take when CANCEL is clicked.
    }
});
```

You can add only one of each button type to an *AlertDialog*. For example, you can't have more than one "positive" button.

Tip: You can also set a "neutral" button with setNeutralButton(). The neutral button appears between the positive and negative buttons. Use a neutral button, such as **Remind me later**, if you want the user to be able to dismiss the dialog and decide later.

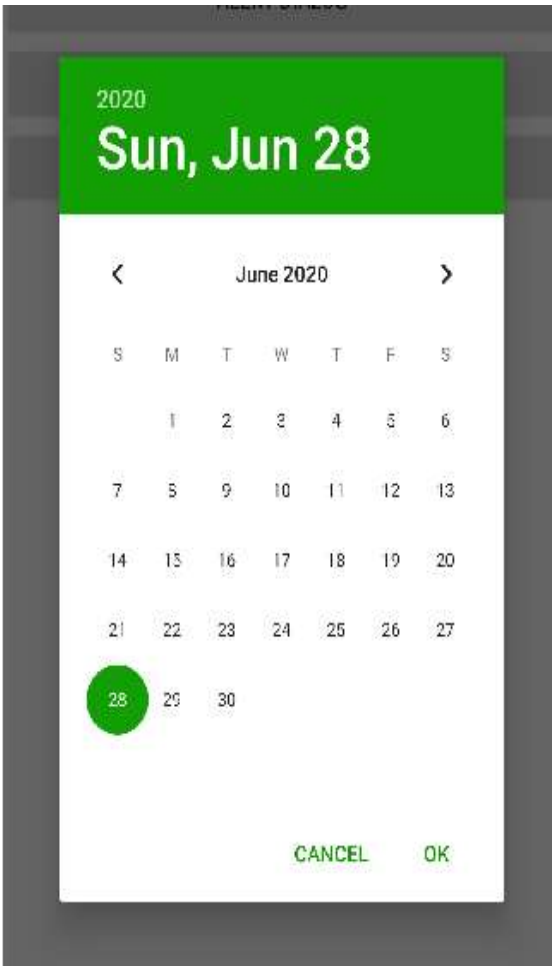
Displaying the dialog

To display the dialog, call its show() method:

alertDialog.show();

Date and Time pickers

Android provides ready-to-use dialogs, called *pickers*, for picking a time or a date. Use them to ensure that your users pick a valid time or date that is formatted correctly and adjusted to the user's locale. Each picker provides controls for selecting each part of the time (hour, minute, AM/PM) or date (month, day, year).



When showing a picker, you should use an instance of DialogPickerDialog, which displays a dialog window floating on top of its Activity window.

Tip: Here you can use fragments insted of for the pickers is that you can implement different layout configurations, such as a basic dialog on handset-sized displays or an embedded part of a layout on large displays.

Create DatePickerDialog

1. Implement DatePickerDialog.OnDateSetListener to create a standard date picker with a listener.
   DatePickerDialog datePicker= **new** DatePickerDialog(**this**, **new** DatePickerDialog.OnDateSetListener() {

```
    // Implement OnDateSetListener
    });
```

2. Click the red bulb icon and choose **Implement methods** from the popup menu. A dialog appears with onDateSet() already selected and the **Insert @Override** option selected. Click **OK** to create the empty onDateSet() method. This method will be called when the user sets the date.

   import android.widget.DatePicker;

   The *onDateSet()* parameters should be *int i, int i1,* and *int i2*. Change the names of these parameters to ones that are more readable:
   public void onDateSet(DatePicker datePicker, int year, int month, int day)
3. You use your version of the callback method to initialize the *year*, *month*, and *day* for the date picker. For example, you can add the following code to *onCreateDialog()* to initialize the *year*, *month*, and *day* from Calendar, and return the dialog and these values to the *Activity*. As you enter **Calendar.getInstance()**, specify the import to be **java.util.Calendar**.

```
// Use the current date as the default date in the picker.
 final Calendar c = Calendar.getInstance();
 int year = c.get(Calendar.YEAR);
 int month = c.get(Calendar.MONTH);
 int day = c.get(Calendar.DAY_OF_MONTH);
```

The Calendar class sets the default date as the current date—it converts between a specific instant in time and a set of calendar fields such as *YEAR, MONTH, DAY*OF_MONTH,_ and *HOUR*. Calendar is locale-sensitive. The *Calendar getInstance()* method returns a *Calendar* whose fields are initialized with the current date and time.

Displaying the Picker

To display the DatePickerDialog, call its show() method:

```
datePicker.show();
```

Implementation of DatePickerDilaog

```
  public void dpd(View view) {
      int c_date,c_month,c_year;
      Calendar c=Calendar.getInstance();
      c_year=c.get(Calendar.YEAR);
      c_date=c.get(Calendar.DATE);
      c_month=c.get(Calendar.MONTH);
      DatePickerDialog datePicker= new DatePickerDialog(this, new DatePickerDialog.OnDateS
etListener() {
          @Override
          public void onDateSet(DatePicker view, int year, int month, int dayOfMonth) {
              Toast.makeText(MainActivity.this, dayOfMonth+"-"+(month+1)+"-"+year, Toast.LEN
GTH_SHORT).show();
          }
      },c_year,c_month,c_date);
      datePicker.show();
```

```
}
```

Time Picker Dialog:

Follow the same procedures outlined above for a date picker, with the following differences:

1. Implement TimePickerDialog.OnTimeSetListener to create a standard date picker with a listener.

```
TimePickerDialog pickerDialog=new TimePickerDialog(this, new TimePickerDialog.OnTimeSetListener() {
        //Implement OnTimeset Listener
});
```

2. Click the red bulb icon and choose **Implement methods** from the popup menu.A dialog appears with onTimeSet() already selected and the **Insert @Override** option selected. Click **OK** to create the empty onTimeSet() method. This method will be called when the user sets the date.

```
import android.widget.TimePicker;
```

The *onTimeSet()* parameters should be *TimePicker view, int hourOfDay, and int minute*. Change the names of these parameters to ones that are more readable:

```
public void onTimeSet(TimePicker view, int hourOfDay, int minute)
```

3. You use your version of the callback method to initialize the *year*, *month*, and *day* for the date picker. For example, you can add the following code to *onCreateDialog()* to initialize the *year*, *month*, and *day* from Calendar, and return the dialog and these values to the *Activity*. As you enter **Calendar.getInstance()**, specify the import to be **java.util.Calendar**.

```
// Use the current date as the default date in the picker.
 final Calendar c = Calendar.getInstance();
 int hours = c.get(Calendar.HOUR_OF_DAY);
 int minute = c.get(Calendar.MINUTE);
```

The Calendar class sets the default time as the current time—it converts between a specific instant in time and a set of calendar fields such as *hourOfDay, minute,* and *HOUR*. Calendar is locale-sensitive. The *Calendar getInstance()* method returns a *Calendar* whose fields are initialized with the current date and time.

Displaying the Picker

To display the TimePickerDialog, call its show() method:

```
timePicker.show();
```

Implementation of TimePickerDilaog

```
public void tpd(View view) {
      int c_hours,c_minute;
      Calendar c=Calendar.getInstance();
      c_hours=c.get(Calendar.HOUR_OF_DAY);
      c_minute=c.get(Calendar.MINUTE);
     TimePickerDialog timePicker=new TimePickerDialog(this, new TimePickerDialog.OnTime
SetListener() {
```

```
            @Override
            public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
                Toast.makeText(MainActivity.this, hourOfDay+":"+minute, Toast.LENGTH_SHORT)
.show();
            }
        },c_hours,c_minute,false);
        timePicker.show();
    }
```