

How to search contacts by name in android

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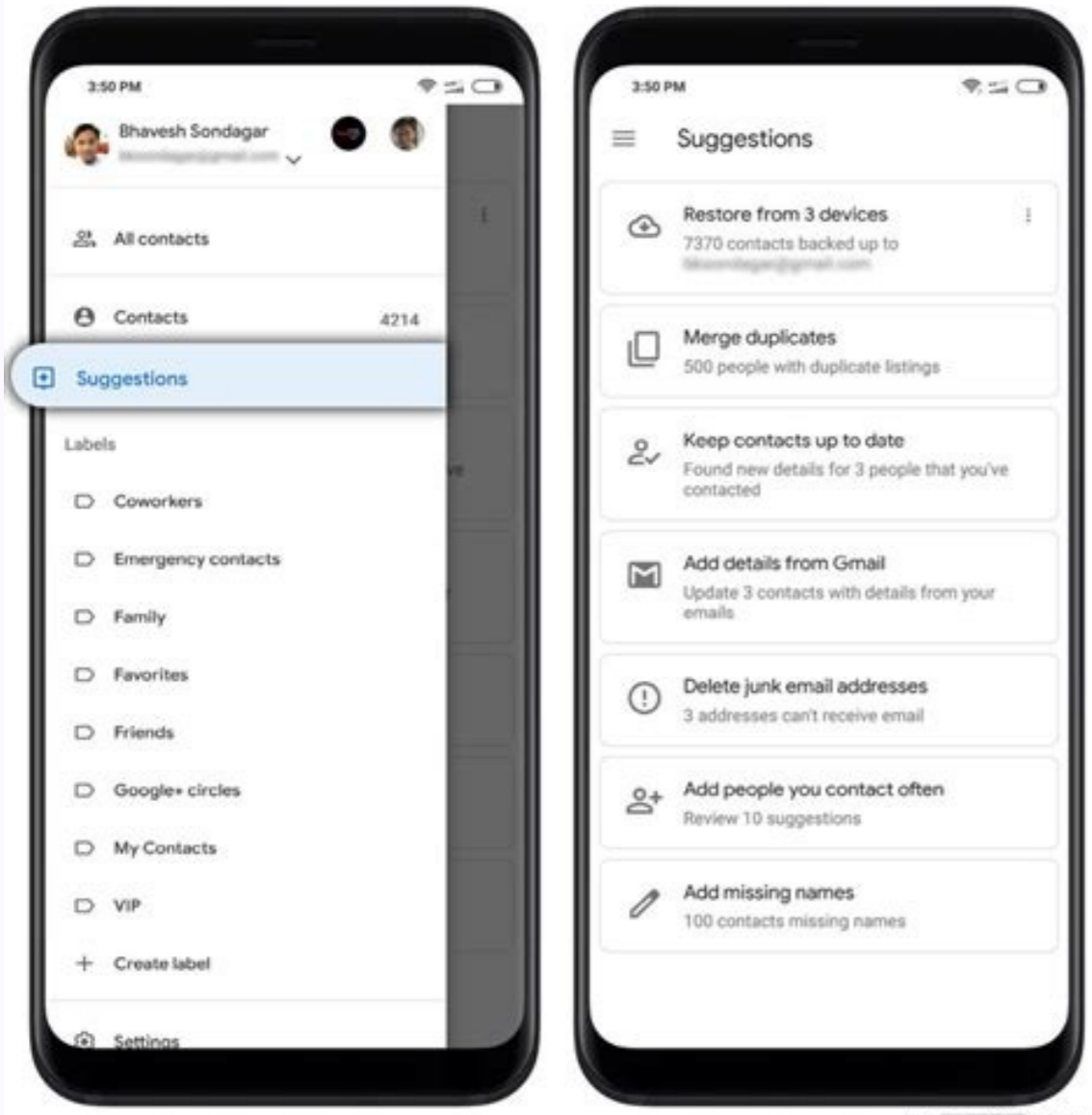


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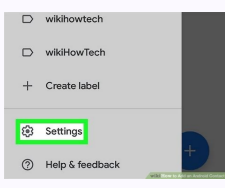
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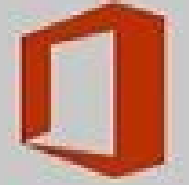
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How to search contacts on google. Search contact list.

Users can browse an alphabetical list in the Contacts view and navigate to details about each contact – or use the Search control to find someone. Other views that show contacts include Favorites (after the user has added favorites) and Recents (once the user has a call history). Users can start a search or place a call from any of these views, or from the Dialpad view. Users can scroll vertically through the top-level Contacts list to browse their contacts, which are imported from their phones. Favorites and preferred phone numbers are not imported; users specify these within Dialer. As users scroll through a list of contacts, the app bar (or app header) at the top of the screen remains fixed in place, and the contact list scrolls behind it. Each list item displays information about the contact and allows for two possible actions: calling the contact or viewing contact details. Elements in each list item: 1. Name of contact 2. Avatar 3. Contact's preferred phone number 4. Contact details icon Users can select any of the first three elements (or the area near them) to place a call to a contact's preferred number, or they can select the contact detail icon to navigate to a more detailed view of the contact. Note: When a user places a call to a contact with multiple phone numbers but no preferred number, Dialer displays a dialog asking the user to select the number to call JUST ONCE or ALWAYS. Selecting ALWAYS sets the selected number as the contact's preferred (default) number within Dialer. When users browse the Contacts view, they can select a contact detail icon to see a more detailed view of a contact. Selecting the details icon to the right of the contact name opens the detail view Note: The contact details icon is also available in the Recents view. The detail view shows the contact's phone numbers and address (if known) In the detail view, users can: Place a call Add a favorite View the route to the contact's address in Google Maps (by selecting the address) Navigate to a contact's address (by selecting the navigation icon) Return to the top-level list of contacts (by using the back arrow) Car makers can decide whether to use Google Maps or their own navigation system to navigate to a contact's address. Another way users can find a specific contact, whether or not they are in the Contacts view, is to select the Search control (magnifying glass icon) on the app bar. Selecting the Search control brings up a search overlay containing a keyboard, a search bar, and a back button How the user can specify search criteria depends on whether the car is parked or moving: When parked: Users enter search criteria on the keyboard touch screen When moving: Users must enter search criteria using speech-to-text As the user enters search criteria, the search string appears in the search bar. Dialer uses the search criteria to filter the contact list in real time as the user types. It displays only those contacts that continue to match the user's search criteria. When the user finds and selects a contact, Dialer displays the contact detail view. There, the user can select from the contact's available numbers to place a call. Except as otherwise noted, the content of this page is licensed under the Creative Commons Attribution 4.0 License, and code samples are licensed under the Apache 2.0 License. For details, see the Google Developers Site Policies. Java is a registered trademark of Oracle and/or its affiliates. Last updated 2020-09-11 UTC. {{ "type": "thumb-down", "id": "missingTheInformationNeed", "label": "Missing the information I need" }, { "type": "thumb-down", "id": "tooComplicatedTooManySteps", "label": "Too complicated / too many steps" }, { "type": "thumb-down", "id": "outOfDate", "label": "Out of date" }, { "type": "thumb-down", "id": "samplesCodeIssue", "label": "Samples / code issue" }, { "type": "thumb-down", "id": "otherDown", "label": "Other" } } { "type": "thumb-up", "id": "easyToUnderstand", "label": "Easy to understand" }, { "type": "thumb-up", "id": "solvedMyProblem", "label": "Solved my problem" }, { "type": "thumb-up", "id": "otherUp", "label": "Other" } } You should use Phone.CONTENT_FILTER_URI instead of Contacts.CONTENT_FILTER_URI Docs say: The filter is applied to display names as well as phone numbers. Try this: Uri filterUri = Uri.withAppendedPath(Phone.CONTENT_FILTER_URI, Uri.encode(searchString)); String[] projection = new String[] { Phone.CONTACT_ID, Phone.DISPLAY_NAME, Phone.NUMBER }; Cursor cur = getContentResolver().query(filterUri, projection, null, null, null); This lesson shows you how to retrieve a list of contacts whose data matches all or part of a search string, using the following techniques: Match contact names Retrieve a list of contacts by matching the search string to all or part of the contact name data. The Contacts Provider allows multiple instances of the same name, so this technique can return a list of matches. Match a specific type of data, such as a phone number Retrieve a list of contacts by matching the search string to a particular type of detail data such as an email address. For example, this technique allows you to list all of the contacts whose email address matches the search string. Match any type of data Retrieve a list of contacts by matching the search string to any type of detail data, including name, phone number, street address, email address, and so forth. For example, this technique allows you to accept any type of data for a search string and then list the contacts for which the data matches the string. Note: All the examples in this lesson use a CursorLoader to retrieve data from the Contacts Provider. A CursorLoader runs its query on a thread that's separate from the UI thread. This ensures that the query doesn't slow down UI response times and cause a poor user experience. For more information, see the Android training class Loading Data in the Background. Request permission to read the provider To do any type of search of the Contacts Provider, your app must have READ_CONTACTS permission. To request this, add this element to your manifest file as a child element of <match a contact by name and list the results This technique tries to match a search string to the name of a contact or contacts in the Contact Provider's ContactsContract.Contacts table. You usually want to display the results in a ListView, to allow the user to choose among the matched contacts. Define ListView and item layouts To display the search results in a ListView, you need a main layout file that defines the entire UI including the ListView, and an item layout file that defines one line of the ListView. For example, you could create the main layout file res/layout/contacts_list_view.xml with the following XML: This XML uses the built-in Android TextView widget android:text1. Note: This lesson doesn't describe the UI for getting a search string from the user, because you may want to get the string indirectly. For example, you can give the user an option to search for contacts whose name matches a string in an incoming text message. The two layout files you've written define a user interface that shows a ListView. The next step is to write code that uses this UI to display a list of contacts. Define a Fragment that displays the list of contacts To inflate the Fragment object's UI in the callback method onCreate(). For example: // A UI Fragment must inflate its View override fun onCreate() { inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle? } View? { // Inflate the fragment layout return inflater.inflate(R.layout.contact_list_fragment, container, false) } // Empty public constructor, required by the system public ContactsFragment() { // A UI Fragment must inflate its View @Override public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) { // Inflate the fragment layout return inflater.inflate(R.layout.contact_list_fragment, container, false) } Set up the contact user selects // The contact's ID value var contactId: Long = 0 // The contact's LOOKUP_KEY var contactKey: String? = null // A content URI for the selected contact var contactUri: Uri? = null // An adapter that binds the result Cursor to the ListView private val cursorAdapter: SimpleCursorAdapter? = null ... // Defines an array that contains column names to move from * the Cursor to the ListView. // @SuppressLint("InlinedApi") private final static String[] FROM_COLUMNS = { Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB ? ContactsContract.Contacts.DISPLAY_NAME_PRIMARY : ContactsContract.Contacts.DISPLAY_NAME } // * Defines an array that contains resource ids for the layout views * that get the Cursor column contents. The id is pre-defined in * the Android framework, so it is prefaced by "android.R.id" private val TO_IDS: IntArray = IntArray.of(android.R.id.text1) ... class ContactsFragment : Fragment() { LoaderManager.LoaderCallbacks, AdapterView.OnItemClickListener { ... import android.support.v4.app.Fragment; import android.support.v4.app.LoaderManager.LoaderCallbacks; import android.support.v4.app.LoaderManager.LoaderAdapter; import android.support.v4.app.LoaderManager.LoaderAdapter; import android.support.v4.app.LoaderManager.LoaderAdapter; import android.support.v4.app.LoaderManager.LoaderAdapter; ... public class ContactsFragment extends Fragment implements LoaderManager.LoaderCallbacks, AdapterView.OnItemClickListener { Define global variables that are used in other parts of the code: ... // * Defines an array that contains column names to move from * the Cursor to the ListView. // @SuppressLint("InlinedApi") private val FROM_COLUMNS: Array = arrayOf ((Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB) { ContactsContract.Contacts.DISPLAY_NAME_PRIMARY } else { ContactsContract.Contacts.DISPLAY_NAME }) // * Defines an array that contains resource ids for the layout views * that get the Cursor column contents. The id is pre-defined in * the Android framework, so it is prefaced by "android.R.id" private val TO_IDS: IntArray = IntArray.of(android.R.id.text1) ... class ContactsFragment : Fragment() { LoaderManager.LoaderCallbacks, AdapterView.OnItemClickListener { ... // Define global mutable variables // Define a ListView object lateinit var contactsList: ListView // Define variables for the contact user selects // The contact's ID value var contactId: Long = 0 // The contact's LOOKUP_KEY var contactKey: String? = null // A content URI for the selected contact var contactUri: Uri? = null // An adapter that binds the result Cursor to the ListView private val cursorAdapter: SimpleCursorAdapter? = null ... // Defines an array that contains column names to move from * the Cursor to the ListView. // @SuppressLint("InlinedApi") private final static String[] FROM_COLUMNS = { Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB ? ContactsContract.Contacts.DISPLAY_NAME_PRIMARY : ContactsContract.Contacts.DISPLAY_NAME } // * Defines an array that contains resource ids for the layout views * that get the Cursor column contents. The id is pre-defined in * the Android framework, so it is prefaced by "android.R.id" private val TO_IDS = { android.R.id.text1 }; // Define global mutable variables // Define a ListView object lateinit var contactsList: ListView // Define variables for the contact user selects // The contact's ID value long contactId; // The contact's LOOKUP_KEY String contactKey; // A content URI for the selected contact Uri contactUri; // An adapter that binds the result Cursor to the ListView private SimpleCursorAdapter cursorAdapter; ... Note: Since Contacts.DISPLAY_NAME_PRIMARY requires Android 3.0 (API version 11) or later, setting your app's minSdkVersion to 10 or below generates an Android Lint warning in Android Studio. To turn off this warning, add the annotation @SuppressWarnings("InlinedApi") before the definition of FROM_COLUMNS. Initialize the Fragment Initialize the Fragment. Add the empty, public constructor required by the Android system, and inflate the Fragment object's UI in the callback method onCreate(). For example: fun onCreate() { inflater: LayoutInflater, container: ViewGroup?, savedInstanceState: Bundle? } View? { // Inflate the fragment layout return inflater.inflate(R.layout.contact_list_fragment, container, false) } // Empty public constructor, required by the system public ContactsFragment() { // A UI Fragment must inflate its View @Override public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) { // Inflate the fragment layout return inflater.inflate(R.layout.contact_list_fragment, container, false) } Set up the SimpleCursorAdapter that binds the results of the search to the ListView. To get the ListView object that displays the contacts, you need to call getActivity().findViewById() using the parent activity of the Fragment. Use the Context of the parent activity when you call setAdapter(). For example: override fun onCreateView(savedInstanceState: Bundle?) { super.onCreate(savedInstanceState) ... // Gets the ListView from the View list of the parent activity activity?also { contactsList = it.findViewById(R.id.contact_list_view) // Gets a CursorAdapter cursorAdapter = SimpleCursorAdapter(it, R.layout.contact_list_item, null, FROM_COLUMNS, TO_IDS, 0) // Sets the adapter for the ListView contactsList.adapter = cursorAdapter } } public void onActivityCreated(Bundle savedInstanceState) { ... // Gets the ListView from the View list of the parent activity contactsList = (ListView) getActivity().findViewById(R.layout.contact_list_view); // Gets a CursorAdapter cursorAdapter = new SimpleCursorAdapter(getActivity(), R.layout.contact_list_item, null, FROM_COLUMNS, TO_IDS, 0); // Sets the adapter for the ListView contactsList.setAdapter(cursorAdapter); } When you display the results of a search, you usually want to allow the user to select a single contact for further processing. For example, when the user clicks a contact you can display the contact's address on a map. To provide this feature, you first defined the current Fragment as the click listener by specifying that the class implements AdapterView.OnItemClickListener, as shown in the section Define a Fragment that displays the list of contacts. To continue setting up the listener, bind it to the ListView by calling the method setOnItemClickListener() in onCreate(). For example: fun onCreate(savedInstanceState: Bundle?) { ... // Set the item click listener to be the current fragment. contactsList.setOnItemClickListener = this ... } public void onActivityCreated(Bundle savedInstanceState) { ... // Set the item click listener to be the current fragment. contactsList.setOnItemClickListener(this); ... } Since you specified that the current Fragment is the OnItemClickListener for the ListView, you now need to implement its required method onItemClick(), which handles the click event. This is described in a succeeding section. Define a projection Define a constant that contains the columns you want to return from your query. Each item in the ListView displays the contact's display name, which contains the main form of the contact's name. In Android 3.0 (API version 11) and later, the name of this column is Contacts.DISPLAY_NAME_PRIMARY; in versions previous to that, its name is Contacts.DISPLAY_NAME. The column Contacts.ID is used by the SimpleCursorAdapter binding process. Contacts.ID and LOOKUP_KEY are used together to construct a content URI for the contact the user selects. ... @SuppressWarnings("InlinedApi") private val PROJECTION: Array = arrayOf ContactsContract.Contacts.ID, ContactsContract.Contacts.LOOKUP_KEY, if (Build.VERSION.SDK_INT >=

```
Build.VERSION_CODES.HONEYCOMB } ContactsContract.Contacts.DISPLAY_NAME_PRIMARY else ContactsContract.Contacts.DISPLAY_NAME } ... @SuppressWarnings("InlinedApi") private static final String[] PROJECTION = { Contacts.ID, Contacts.LOOKUP_KEY, Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB ?
ContactsContract.Contacts.DISPLAY_NAME_PRIMARY : ContactsContract.Contacts.DISPLAY_NAME }; To get data from an individual column in a Cursor, you need the column's index within the Cursor. You can define constants for the indexes of the Cursor columns, because the indexes are the same as the order of the column names in your projection. For example: // The column index for the ID column private const val CONTACT_ID_INDEX = 0 // The column index for the CONTACT_KEY column private const val CONTACT_KEY_INDEX = 1 // The column index for the ID column private static final int CONTACT_ID_INDEX = 0; // The column index for the CONTACT_KEY column private static final int CONTACT_KEY_INDEX = 1; To specify the data you want, create a combination of text expressions and variables that tell the provider the data columns to search and the values to find. For the text expression, define a constant that lists the search columns. Although this expression can contain values as well, the preferred practice is to represent the values with a "?" placeholder. During retrieval, the placeholder is replaced with values from an array. Using "?" as a placeholder ensures that the search specification is generated by binding rather than by SQL compilation. This practice eliminates the possibility of malicious SQL injection. For example: // Defines the text expression @SuppressWarnings("InlinedApi") private val SELECTION: String = if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB) "${ContactsContract.Contacts.DISPLAY_NAME PRIMARY} LIKE ?" else "${ContactsContract.Contacts.DISPLAY_NAME} LIKE ?" ... // Defines a variable for the search string private val searchString: String = ... // Defines the array to hold values that replace the ? private val selectionArgs = arrayOf(searchString) // Defines the text expression @SuppressWarnings("InlinedApi") private static final String SELECTION = Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB ? Contacts.DISPLAY_NAME PRIMARY + " LIKE ?" :
Contacts.DISPLAY_NAME + " LIKE ?"; // Defines a variable for the search string private String searchString; // Defines the array to hold values that replace the ? private String[] selectionArgs = { searchString }; In a previous section, you set the item click listener for the ListView. Now implement the action for the listener by defining the method AdapterView.OnItemClickListener.onItemClickListener() override fun onItemClick(parent: AdapterView, view: View?, position: Int, id: Long) { // Get the Cursor val cursor: Cursor? = (parent.adapter as? CursorAdapter?)?.cursor?.apply { // Move to the selected contact moveToPosition(position) // Get the ID value contactId = getLong(CONTACT_ID_INDEX) // Get the selected LOOKUP_KEY contactKey = getString(CONTACT_KEY_INDEX) // Create the contact's content Uri contactUri = ContactsContract.Contacts.getLookupUri(contactId, mContactKey) /* You can use contactUri as the content URI for retrieving * the details for a contact. */ } } @Override public void onItemClick(AdapterView parent, View item, int position, long rowId) { // Get the Cursor Cursor cursor = parent.getAdapter().getCursor(); // Move to the selected contact cursor.moveToPosition(position); // Get the ID value contactId = cursor.getLong(CONTACT_ID_INDEX); // Get the selected LOOKUP_KEY contactKey = cursor.getString(CONTACT_KEY_INDEX); // Create the contact's content Uri contactUri = Contacts.getLookupUri(contactId, mContactKey); /* You can use contactUri as the content URI for retrieving * the details for a contact. */ } Since you're using a CursorLoader to retrieve data, you must initialize the background thread and other variables that control asynchronous retrieval. Do the initialization in onCreate() as shown in the following example: class ContactsFragment : Fragment() { ... override fun onCreate(savedInstanceState: Bundle?) { // Always call the super method first super.onCreate(savedInstanceState) ... // Initializes the loader loaderManager.initLoader(0, null, this) public class ContactsFragment extends Fragment implements LoaderManager.LoaderCallbacks { ... // Called just before the Fragment displays its UI @Override public void onCreate(Bundle savedInstanceState) { // Always call the super method first super.onCreate(savedInstanceState); ... // Initializes the loader getLoaderManager().initLoader(0, null, this); Implement the method onCreateLoader(), which is called by the loader framework immediately after you call initLoader(). In onCreateLoader(), set up the search string pattern. To make a string into a pattern, insert "%" (percent) characters to represent a sequence of zero or more characters, or "" (underscore) characters to represent a single character, or both. For example, the pattern "%Jefferson%" would match both "Thomas Jefferson" and "Jefferson Davis". Return a new CursorLoader from the method. For the content URI, use Contacts.CONTENT_URI. This URI refers to the entire table, as shown in the following example: ... override fun onCreateLoader(loaderId: Int, args: Bundle?): Loader { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%$mSearchString%" // Starts the query return activity?.let { return CursorLoader(it, ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null) } ? : throw IllegalStateException() } ... @Override public Loader onCreateLoader(int loaderId, Bundle args) { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%" + searchString + "%"; // Starts the query return new CursorLoader(getActivity(), ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null); } Implement the onLoadFinished() method. The loader framework calls onLoadFinished() when the Contacts Provider returns the results of the query. In this method, put the result Cursor in the SimpleCursorAdapter. This automatically updates the ListView with the search results: override fun onLoadFinished(loader: Loader, cursor: Cursor) { // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor) } The method onLoadReset() is invoked when the loader framework detects that the result Cursor contains stale data. Delete the SimpleCursorAdapter reference to the existing Cursor. If you don't, the loader framework will not recycle the Cursor, which causes a memory leak. For example: override fun onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } @Override public void onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } You now have the key pieces of an app that matches a search string to contact names and returns the result in a ListView. The user can click a contact name to select it. This triggers a listener, in which you can work further with the contact's data. For example, you can retrieve the contact's details. To learn how to do this, continue with the next lesson, Retrieve details for a contact. To learn more about search user interfaces, read the API guide Create a search interface. The remaining sections in this lesson demonstrate other ways of finding contacts in the Contacts Provider. Match a contact by a specific type of data This technique allows you to specify the type of data you want to match. Retrieving by name is a specific example of this type of query, but you can also do it for any of the types of detail data associated with a contact. For example, you can retrieve contacts that have a specific postal code; in this case, the search string has to match data stored in a postal code row. To implement this type of retrieval, first implement the following code, as listed in previous sections: Request Permission to Read the Provider. Define ListView and item layouts. Define a Fragment that displays the list of contacts. Define global variables. Initialize the Fragment. Set up the CursorAdapter for the ListView. Set the selected contact listener. Define constants for the Cursor column indexes. Although you're retrieving data from a different table, the order of the columns in the projection is the same, so you can use the same indexes for the Cursor. Define the onItemClick() method. Initialize the loader. Implement onLoadFinished() and onLoadReset(). The following steps show you the additional code you need to match a search string to a particular type of detail data and display the results. Choose the data type and table To search for a particular type of detail data, you have to know the custom MIME type value for the data type. Each data type has a unique MIME type value defined by a constant CONTENT_ITEM_TYPE in the subclass of ContactsContract.CommonDataKinds associated with the data type. The subclasses have names that indicate their data type; for example, the subclass for email data is ContactsContract.CommonDataKinds.Email, and the custom MIME type for email data is defined by the constant Email.CONTENT_ITEM_TYPE. Use the ContactsContract.Data table for your search. All of the constants you need for your projection, selection clause, and sort order are defined in or inherited by this table. Define a projection To define a projection, choose one or more of the columns defined in ContactsContract.Data or the classes from which it inherits. The Contacts Provider does an implicit join between ContactsContract.Data and other tables before it returns rows. For example: @SuppressWarnings("InlinedApi") private val PROJECTION: Array = arrayOf(/* * The detail data row ID. To make a ListView work, * this column is required. */ ContactsContract.Data.ID, // The primary display name if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB) ContactsContract.Data.DISPLAY_NAME_PRIMARY else ContactsContract.Data.DISPLAY_NAME, // The contact's ID, to construct a content URI ContactsContract.Data.CONTACT_ID, // The contact's LOOKUP_KEY, to construct a content URI ContactsContract.Data.LOOKUP_KEY } @Override public void onItemClick(AdapterView loaderId, Bundle args) { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%$mSearchString%" // Starts the query return activity?.let { return CursorLoader(it, ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null) } ? : throw IllegalStateException() } ... @Override public Loader onCreateLoader(int loaderId, Bundle args) { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%" + searchString + "%"; // Starts the query return new CursorLoader(getActivity(), ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null); } Implement the onLoadFinished() method. The loader framework calls onLoadFinished() when the Contacts Provider returns the results of the query. In this method, put the result Cursor in the SimpleCursorAdapter. This automatically updates the ListView with the search results: override fun onLoadFinished(loader: Loader, cursor: Cursor) { // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor) } @Override public void onLoadFinished(loader: Loader, cursor: Cursor) { // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor) } // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor); } The method onLoadReset() is invoked when the loader framework detects that the result Cursor contains stale data. Delete the SimpleCursorAdapter reference to the existing Cursor. If you don't, the loader framework will not recycle the Cursor, which causes a memory leak. For example: override fun onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } @Override public void onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } You now have the key pieces of an app that matches a search string to contact names and returns the result in a ListView. The user can click a contact name to select it. This triggers a listener, in which you can work further with the contact's data. For example, you can retrieve the contact's details. To learn how to do this, continue with the next lesson, Retrieve details for a contact. To learn more about search user interfaces, read the API guide Create a search interface. The remaining sections in this lesson demonstrate other ways of finding contacts in the Contacts Provider. Match a contact by a specific type of detail data This technique allows you to specify the type of data you want to match. 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The following steps show you the additional code you need to match a search string to a particular type of detail data and display the results. Choose the data type and table To search for a particular type of detail data, you have to know the custom MIME type value for the data type. Each data type has a unique MIME type value defined by a constant CONTENT_ITEM_TYPE in the subclass of ContactsContract.CommonDataKinds associated with the data type. The subclasses have names that indicate their data type; for example, the subclass for email data is ContactsContract.CommonDataKinds.Email, and the custom MIME type for email data is defined by the constant Email.CONTENT_ITEM_TYPE. Use the ContactsContract.Data table for your search. All of the constants you need for your projection, selection clause, and sort order are defined in or inherited by this table. Define a projection To define a projection, choose one or more of the columns defined in ContactsContract.Data or the classes from which it inherits. The Contacts Provider does an implicit join between ContactsContract.Data and other tables before it returns rows. For example: @SuppressWarnings("InlinedApi") private val PROJECTION: Array = arrayOf(/* * The detail data row ID. To make a ListView work, * this column is required. */ ContactsContract.Data.ID, // The primary display name if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.HONEYCOMB) ContactsContract.Data.DISPLAY_NAME_PRIMARY else ContactsContract.Data.DISPLAY_NAME, // The contact's ID, to construct a content URI ContactsContract.Data.CONTACT_ID, // The contact's LOOKUP_KEY, to construct a content URI ContactsContract.Data.LOOKUP_KEY } @Override public void onItemClick(AdapterView loaderId, Bundle args) { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%$mSearchString%" // Starts the query return activity?.let { return CursorLoader(it, ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null) } ? : throw IllegalStateException() } ... @Override public Loader onCreateLoader(int loaderId, Bundle args) { /* * Makes search string into pattern and * stores it in the selection array */ selectionArgs[0] = "%" + searchString + "%"; // Starts the query return new CursorLoader(getActivity(), ContactsContract.Contacts.CONTENT_URI, PROJECTION, SELECTION, selectionArgs, null); } Implement the onLoadFinished() method. The loader framework calls onLoadFinished() when the Contacts Provider returns the results of the query. In this method, put the result Cursor in the SimpleCursorAdapter. This automatically updates the ListView with the search results: override fun onLoadFinished(loader: Loader, cursor: Cursor) { // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor) } @Override public void onLoadFinished(loader: Loader, cursor: Cursor) { // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor) } // Put the result Cursor in the adapter for the ListView cursorAdapter.swapCursor(cursor); } The method onLoadReset() is invoked when the loader framework detects that the result Cursor contains stale data. Delete the SimpleCursorAdapter reference to the existing Cursor. If you don't, the loader framework will not recycle the Cursor, which causes a memory leak. For example: override fun onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } @Override public void onLoadReset(loader: Loader) { // Delete the reference to the existing Cursor cursorAdapter.swapCursor(null) } You now have the key pieces of an app that matches a search string to contact names and returns the result in a ListView. The user can click a contact name to select it. This triggers a listener, in which you can work further with the contact's data. For example, you can retrieve the contact's details. To learn how to do this, continue with the next lesson, Retrieve details for a contact. To learn more about search user interfaces, read the API guide Create a search interface. The remaining sections in this lesson demonstrate other ways of finding contacts in the Contacts Provider. Match a contact by a specific type of detail data This technique allows you to specify the type of data you want to match. Retrieving by name is a specific example of this type of query, but you can also do it for any of the types of detail data associated with a contact. For example, you can retrieve contacts that have a specific postal code; in this case, the search string has to match data stored in a postal code row. To implement this type of retrieval, first implement the following code, as listed in previous sections: Request Permission to Read the Provider. Define ListView and item layouts. Define a Fragment that displays the list of contacts. Define global variables. Initialize the Fragment. Set up the CursorAdapter for the ListView. Set the selected contact listener. Define constants for the Cursor column indexes. Although you're retrieving data from a different table, the order of the columns in the projection is the same, so you can use the same indexes for the Cursor. Define the onItemClick() method. Initialize the loader. Implement onLoadFinished() and onLoadReset(). The following steps show you the additional code you need to match a search string to any type of data and display the results. Remove selection criteria Don't define the SELECTION constants or the mSelectionArgs variable. These aren't used in this type of retrieval. Implement the onCreateLoader() method, returning a new CursorLoader. You don't need to convert the search string into a pattern, because the Contacts Provider does that automatically. Use Contacts.CONTENT_FILTER_URI as the base URI, and append your search string to it by calling Uri.withAppendedPath(). Using this URI automatically triggers searching for any data type, as shown in the following example: override fun onCreateLoader(loaderId: Int, args: Bundle?): Loader { /* * Appends the search string to the base URI. Always * encode search strings to ensure they're in proper * format. */ val contentUri: Uri = Uri.withAppendedPath(ContactsContract.Contacts.CONTENT_FILTER_URI, Uri.encode(searchString)) // Starts the query return activity?.let { CursorLoader(it, contentUri, PROJECTION2, null, null) } ? : throw IllegalStateException() } @Override public Loader onCreateLoader(int loaderId, Bundle args) { /* * Appends the search string to the base URI. Always * encode search strings to ensure they're in proper * format. */ Uri contentUri = Uri.withAppendedPath(ContactsContract.CONTENT_FILTER_URI, Uri.encode(searchString)); // Starts the query return new CursorLoader(getActivity(), contentUri, PROJECTION, null, null, null); } These code snippets are the basis of an app that does a broad search of the Contacts Provider. The technique is useful for apps that want to implement functionality similar to the People app's contact list screen.
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