

# Interacting with SQLite Data

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# What to Expect from This Module



**Making Data Changes Fundamentals**

**Updating Data**

**Inserting Data**

**Deleting Data**

**Database Interaction and the Activity UI**

# Making Data Changes

## **Requires connection to database**

- Use open helper's getWritableDatabase
- Returns SQLiteDatabase reference

## **Interaction is still table based**

- Operations performed against a table
- Affects rows & columns within the table



# Making Data Changes

## Update

- Modify column values of existing row(s) in a table

## Insert

- Create a new row in a table

## Delete

- Remove existing row(s) from a table



# Updating Data

## Update

- Modify column values of existing row(s) in a table

## Use SQLiteDatabase update method

- Provide table name
- Names of columns to change
- New column values
- Row selection criteria



# Updating Data

note_info			
_id	note_title	note_text	course_id
1	Intent note	Wow, intents allow components...	android_intents
2	Anonymous classes	Anonymous classes simplify...	java_lang
3	Intent note	PendingIntents are powerful...	android_intents

`update(note_info, note_title: Intent note, course_id = ?, android_intents)`



2



# Updating Data

note_info			
_id	note_title	note_text	course_id
1	Dynamic intent resolution	Wow, intents allow components...	android_intents
2	My new title	Anonymous classes simplify...	android_async
3	Delegating intents	PendingIntents are powerful...	android_intents

```
update(note_info, note_title: My new title , _id = ?, 2)  
course_id: android_async
```



# Updating Data

## Specifying table

- Pass table name

## Specifying selection criteria

- Pass selection clause and arguments

## Specifying columns and values

- Use ContentValues class
- Holds list of column names & values
- Add each name & value with put method





# Inserting Data

## Insert

- Create a new row in a table

## Use SQLiteDatabase insert method

- Table name
- ContentValues with column values



# Inserting Data

note_info			
_id	note_title	note_text	course_id
1	Dynamic intent resolution	Wow, intents allow components...	android_intents
2	Anonymous classes	Anonymous classes simplify...	java_lang
3	Delegating intents	PendingIntents are powerful...	android_intents
4	My new note	I love Android	android_async

**insert**(note\_info, note\_title: My new note )  
note\_text: I love Android  
course\_id: android\_async



# Deleting Data

## Delete

- Remove existing row(s) from a table

## Use SQLiteDatabase delete method

- Provide table name
- Row selection criteria



# Deleting Data

note_info			
_id	note_title	note_text	course_id
1	Dynamic intent resolution	Wow, intents allow components...	android_intents
2	Anonymous classes	Anonymous classes simplify...	java_lang
3	Delegating intents	PendingIntents are powerful...	android_intents
4	My new note	I love Android	android_async
5	Long running operations	Foreground services can be tie...	android_async

`delete( note_info, course_id = ?, android_intents )`



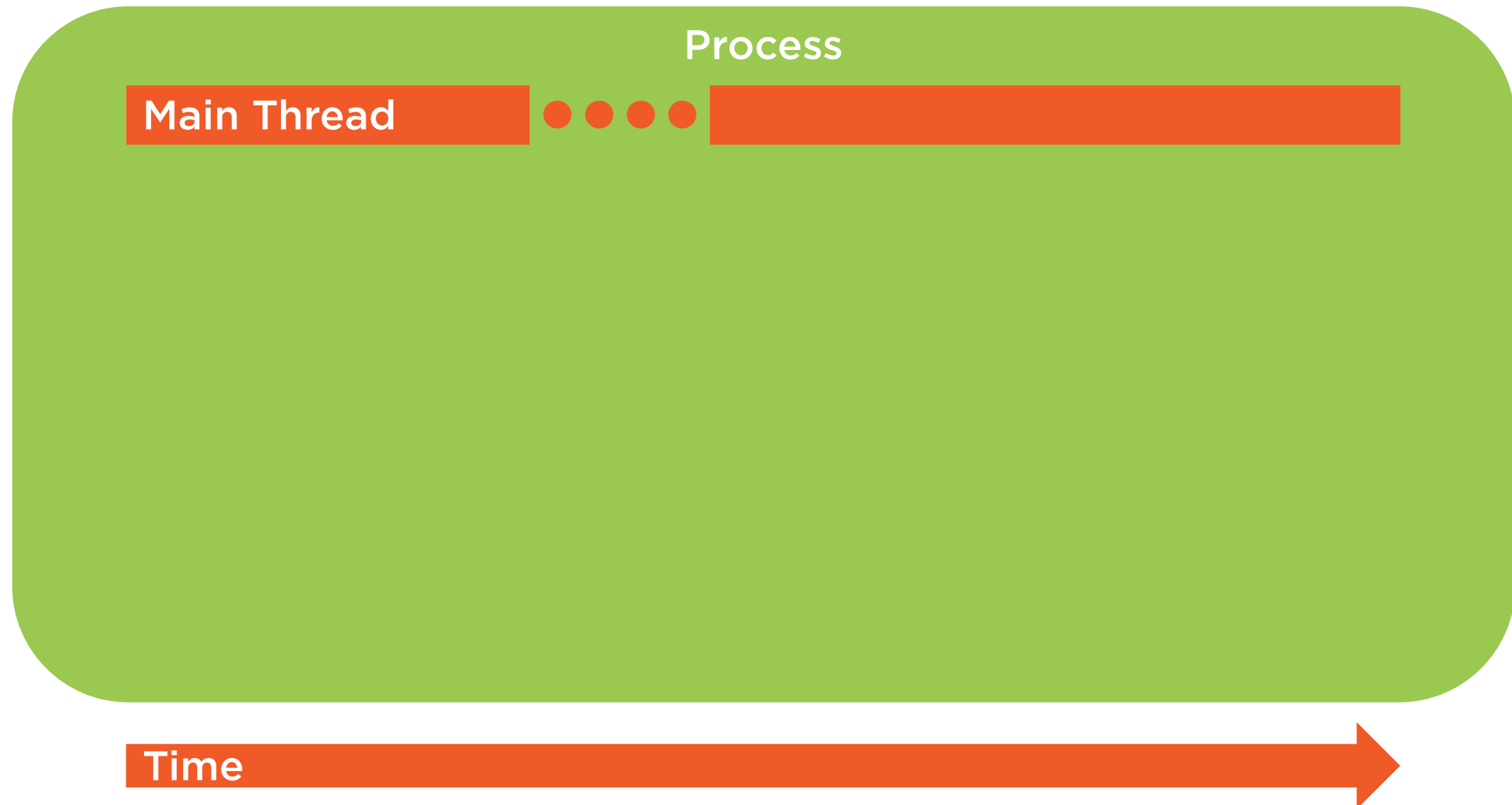
2



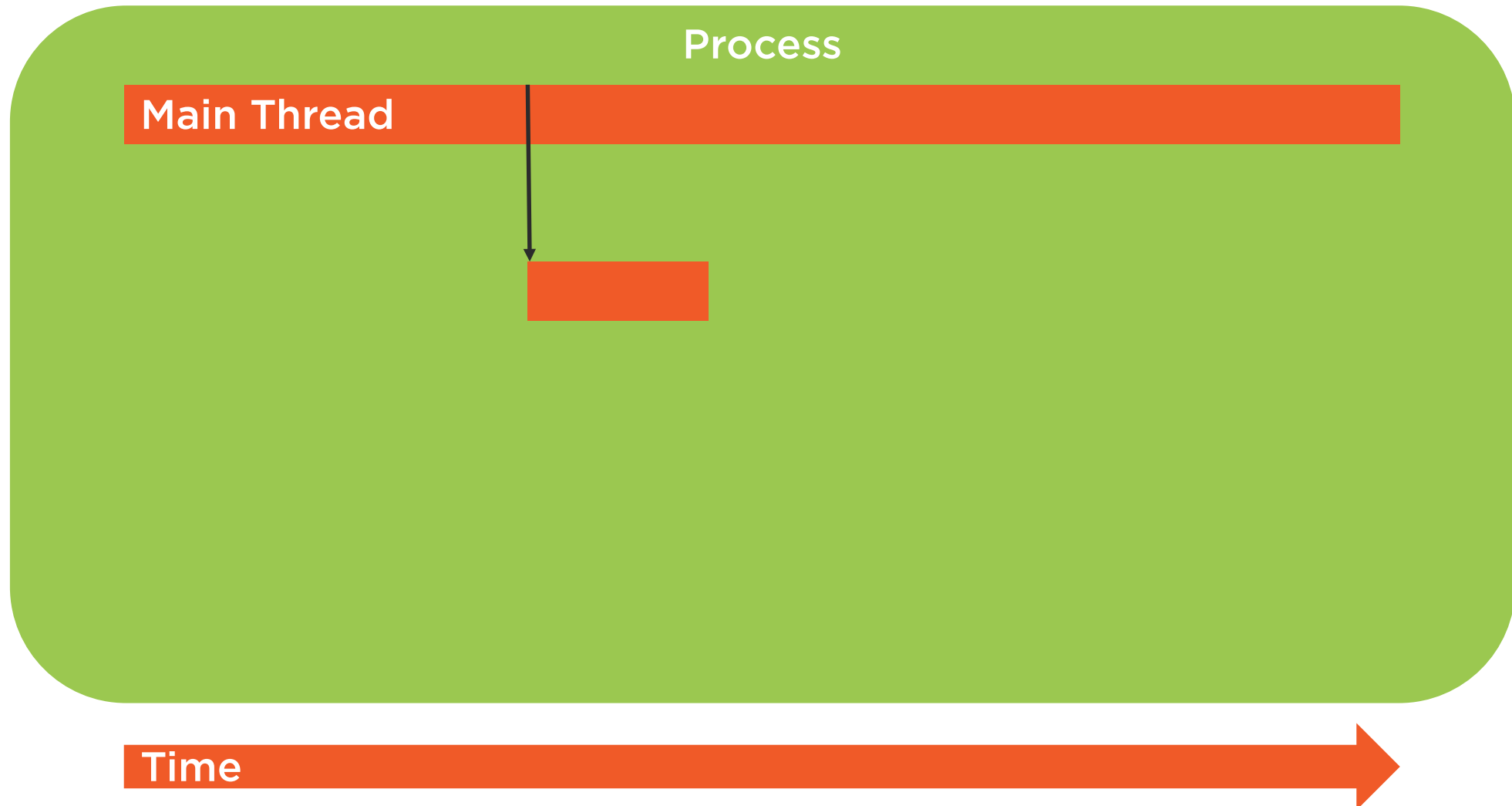
# Note Database Operations in Our App



# Database Interaction and Activity UI



# Database Interaction and Activity UI



# Database Interaction and Activity UI

## **Always avoid database action on UI thread**

- Don't request database connection
- Don't execute database operation

## **Can use a variety of threading solutions**

- Commonly use the AsyncTask class





# AsyncTask

## Implementing database interaction

- Extend AsyncTask
- Override doInBackground method
- Add database code to doInBackground

## Performing interaction in background

- Call execute method
- AsyncTask will execute doInBackground on non-UI thread



# Summary



## Connecting to DB to perform modifications

- Use open helper's `getWritableDatabase`

## Interaction is table based

- Operations performed against a table
- Affects rows & columns within the table



# Summary



## Update

- Modify column values of existing rows
- Values provided with ContentValues
- Will affect all rows that match criteria
- Returns number of rows affected



# Summary



## Insert

- Create new row in a table
- Values provided with ContentValues
- Returns new row's \_ID value

## Delete

- Remove existing row(s)
- Will affect all rows that match criteria
- Returns number of rows affected

# Summary



## **Avoid all database actions on UI thread**

- Don't request database connection
- Don't execute database operation

## **Can use a variety of threading solutions**

- Commonly use the AsyncTask class