

Ex. No. 3	Design and Implementation of Shop Application with Custom List View
Date of Exercise	

Aim

To write a Kotlin program to implement CRUD operations using SQLite in Android.

Program

Activity Code

```
import android.content.Intent
import android.os.Bundle
import android.view.View
import android.widget.ListView
import android.widget.Toast
import androidx.appcompat.app.AppCompatActivity
class MainActivity : AppCompatActivity() {
    private lateinit var bookListView: ListView
    private val cart = mutableListOf<Book>()
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        bookListView = findViewById(R.id.bookListView)
        val books = listOf(
            Book("Fiction Book 1", "Delwin", 9.99, R.drawable.cover1),
            Book("Non-Fiction Book 2", "Sharoan", 12.99, R.drawable.cover2),
            Book("Academic Book 3", "Rhenius", 15.99, R.drawable.cover3),
            Book("Fiction Book 4", "Jones", 8.99, R.drawable.cover4),
            Book("Non-Fiction Book 5", "Micheal", 10.99, R.drawable.cover5),
            Book("Academic Book 6", "Felix", 20.00, R.drawable.cover6),
            Book("Fiction Book 7", "Bewin", 11.99, R.drawable.cover7),
            Book("Non-Fiction Book 8", "John", 14.99, R.drawable.cover8),
```

```
        Book("Academic Book 9", "Author I", 18.50, R.drawable.cover9),
        Book("Fiction Book 10", "Author J", 7.99, R.drawable.cover10))
    val bookAdapter = BookAdapter(books) { book ->
        addToCart(book)
    }
    bookListView.adapter = bookAdapter
}
private fun addToCart(book: Book) {
    cart.add(book)
    Toast.makeText(this, "${book.title} added to cart", Toast.LENGTH_SHORT).show()
}
fun viewCart(view: View) {
    val intent = Intent(this, CartActivity::class.java)
    intent.putParcelableArrayListExtra("cartItems", ArrayList(cart))
    startActivity(intent)
}
}
```

Book Code

```
import android.os.Parcel
import android.os.Parcelable
data class Book(
    val title: String,
    val author: String,
    val price: Double,
    val cover: Int
): Parcelable {
    constructor(parcel: Parcel) : this(
        parcel.readString() ?: "",
        parcel.readString() ?: "",
        parcel.readDouble(),
        parcel.readInt())
    override fun writeToParcel(parcel: Parcel, flags: Int) {
        parcel.writeString(title)
        parcel.writeString(author)
```

```
        parcel.writeDouble(price)
        parcel.writeInt(cover)
    }
    override fun describeContents(): Int = 0
    companion object CREATOR : Parcelable.Creator<Book> {
        override fun createFromParcel(parcel: Parcel): Book = Book(parcel)
        override fun newArray(size: Int): Array<Book?> = arrayOfNulls(size)
    }
}
```

Book Adapter code

```
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.BaseAdapter
import android.widget.Button
import android.widget.ImageView
import android.widget.TextView
class BookAdapter(
    private val bookList: List<Book>,
    private val addToCart: (Book) -> Unit
) : BaseAdapter() {
    override fun getCount(): Int = bookList.size
    override fun getItem(position: Int): Any = bookList[position]
    override fun getItemId(position: Int): Long = position.toLong()
    override fun getView(position: Int, convertView: View?, parent: ViewGroup?): View {
        val view = convertView ?: LayoutInflater.from(parent?.context)
            .inflate(R.layout.book_item, parent, false)

        val book = bookList[position]
        view.findViewById<TextView>(R.id.bookTitle).text = book.title
        view.findViewById<TextView>(R.id.bookAuthor).text = book.author
        view.findViewById<TextView>(R.id.bookPrice).text = "$${book.price}"
        view.findViewById<ImageView>(R.id.bookCover).setImageResource(book.cover)

        view.findViewById<Button>(R.id.addToCartButton).setOnClickListener {
```

```
        addToCart(book)
    }
    return view
}
}
```

Cart Activity Code

```
import android.os.Bundle
import android.widget.ListView
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity

class CartActivity : AppCompatActivity() {
    private lateinit var cartListView: ListView
    private lateinit var totalPriceTextView: TextView
    private lateinit var cartAdapter: BookAdapter
    private var cartItems: List<Book> = emptyList()
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_cart)
        cartListView = findViewById(R.id.cartListView)
        totalPriceTextView = findViewById(R.id.totalPrice)
        cartItems = intent.getParcelableArrayListExtra("cartItems") ?: emptyList()
        cartAdapter = BookAdapter(cartItems) {}
        cartListView.adapter = cartAdapter
        val totalPrice = cartItems.sumOf { it.price }
        totalPriceTextView.text = "Total: $$${String.format("%.2f", totalPrice)}"
    }
}
```

Activity XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

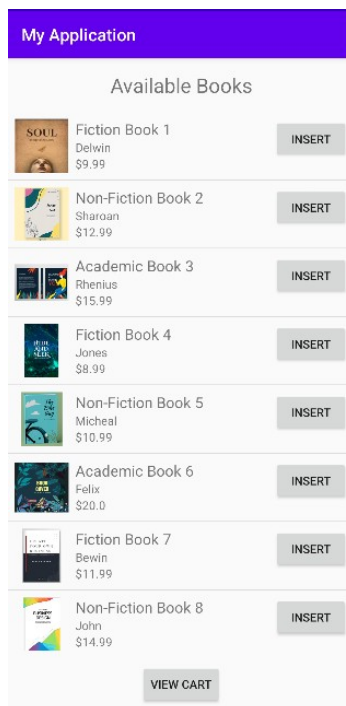
```
        android:orientation="vertical">
        <TextView
            android:id="@+id/title"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Available Books"
            android:textSize="24sp"
            android:padding="16dp"
            android:textAlignment="center"/>
        <ListView
            android:id="@+id/bookListView"
            android:layout_width="match_parent"
            android:layout_height="0dp"
            android:layout_weight="1"/>
        <Button
            android:id="@+id/viewCartButton"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="View Cart"
            android:onClick="viewCart"
            android:layout_gravity="center_horizontal"
            android:layout_margin="16dp"/>
    </LinearLayout>
```

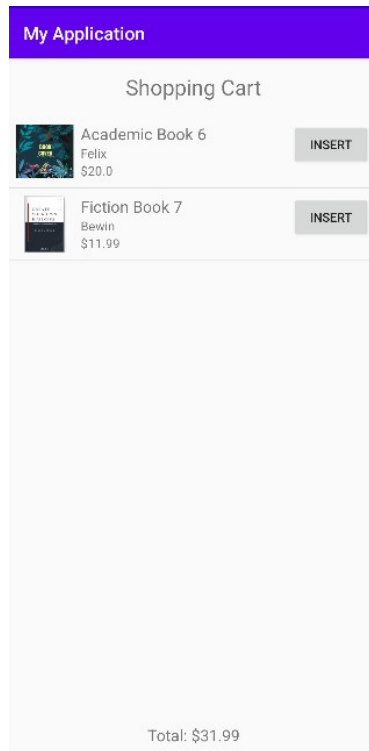
Cart Activity xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/cartTitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Shopping Cart"
        android:textSize="24sp"
```

```
        android:padding="16dp"
        android:textAlignment="center"/>
<ListView
    android:id="@+id/cartListView"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"/>
<TextView
    android:id="@+id/totalPrice"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Total: $0.00"
    android:textSize="18sp"
    android:padding="16dp"
    android:textAlignment="center"/>
</LinearLayout>
```

Output Screenshots





Result

Thus the code is executed successfully and the output is displayed in the console window.