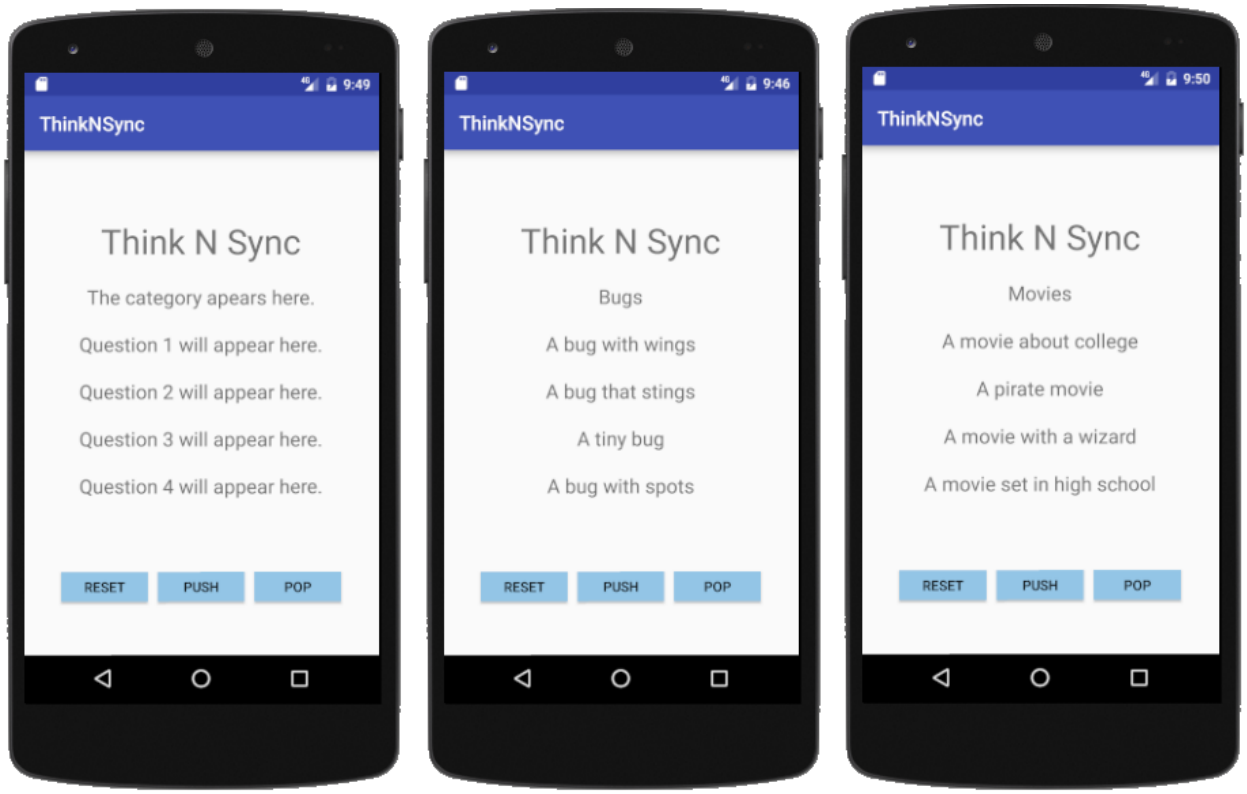
Think N Sync – Loading a Deck of Cards in Random Order

XML

- Set up the screen as needed to display one card (i.e.: as the first picture)




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

    <ImageView
        android:id="@+id/picture"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="center" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="48dp" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center_horizontal"
            android:padding="20dp"
            android:text="Think N Sync"
            android:textSize="35dp" />

        <TextView
            android:id="@+id/Category"
            android:layout_width="wrap_content"
            android:layout_height="48dp"
            android:layout_gravity="center_horizontal"
```

```
            android:text="The category apears here."
            android:textSize="20dp" />

        <TextView
            android:id="@+id/Q1"
            android:layout_width="wrap_content"
            android:layout_height="48dp"
            android:layout_gravity="center_horizontal"
            android:text="Question 1 will appear here."
            android:textSize="20dp" />

        <TextView
            android:id="@+id/Q2"
            android:layout_width="wrap_content"
            android:layout_height="48dp"
            android:layout_gravity="center_horizontal"
            android:text="Question 2 will appear here."
            android:textSize="20dp" />

        <TextView
            android:id="@+id/Q3"
            android:layout_width="wrap_content"
            android:layout_height="48dp"
            android:layout_gravity="center_horizontal"
            android:text="Question 3 will appear here."
            android:textSize="20dp" />

        <TextView
            android:id="@+id/Q4"
            android:layout_width="wrap_content"
            android:layout_height="48dp"
            android:layout_gravity="center_horizontal"
            android:text="Question 4 will appear here."
            android:textSize="20dp" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="48dp" />

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center_horizontal"
            android:orientation="horizontal">

            <Button
                android:id="@+id/button"
                android:layout_width="wrap_content"
                android:layout_height="30dp"
                android:layout_margin="5dp"
                android:background="#93C5E6"
                android:onClick="reset"
                android:text="reset" />

            <Button
                android:layout_width="wrap_content"
                android:layout_height="30dp"
                android:layout_margin="5dp"
                android:background="#93C5E6"
                android:onClick="push"
                android:text="Push" />

            <Button
                android:layout_width="wrap_content"
                android:layout_height="30dp"
                android:layout_margin="5dp"
                android:background="#93C5E6"
                android:onClick="pop"
                android:text="Pop" />
        </LinearLayout>
    </LinearLayout>
</RelativeLayout>
```

Card:

- Insert the instance variables required on your card.
- Create the constructor
- You will need to add all the other methods required too.

```
public class Card {
    private String category;
    private String q1;
    private String q2;
    private String q3;
    private String q4;
    private int score;

    public Card(String c, String ques1, String ques2, String ques3, String ques4){
        category=c;
        q1=ques1;
        q2=ques2;
        q3=ques3;
        q4=ques4;
        score=0;
    }
    public String getCategory(){
        return category;
    }
    public String getQuestion1(){
        return q1;
    }
    public String getQuestion2(){
        return q2;
    }
    public String getQuestion3(){
        return q3;
    }
    public String getQuestion4(){
        return q4;
    }
    public void addtoScore(){
        score++;
    }
    public int getScore(){
        return score;
    }
}
```

Deck

- Based on a Stack
- Only the constructor appears here. You will need the rest of the Stack Code too. I renamed mine to Deck.
- Make the changes indicated in TO DO

```
public class Deck {

    private int count;
    //TO DO: make the length that matches your number of cards
    private Card data[] = new Card[4];

    public Deck() {
        //TO DO: Make an array for each instance variable. A card's pieces are all in the same index
        String cat[]={"At a restaurant", "Fill in the blank", "Movies", "Bugs"};
        String q1[]={"An appetizer", "Stop and ___", "A movie about college", "A bug with wings"};
        String q2[]={"A way potatoes are prepared", "Twist and ___", "A pirate movie", "A bug that stings"};
        String q3[]={"A dessert", "Stars and ___", "A movie with a wizard", "A tiny bug"};
        String q4[]={"A kind of vegetable", "Eat and ___", "A movie set in high school", "A bug with spots"};

        //TO DO: Randomize the order of the arrays
        for (int i = 0; i < 100; i++) {
            int r1 = (int) (Math.random() * cat.length);
            int r2 = (int) (Math.random() * cat.length);
            //TO DO: one swap for each array
            String temp = cat[r1];
            cat[r1] = cat[r2];
            cat[r2] = temp;

            String temp1 = q1[r1];
            q1[r1] = q1[r2];
            q1[r2] = temp1;

            String temp2 = q2[r1];
            q2[r1] = q2[r2];
            q2[r2] = temp2;

            String temp3 = q3[r1];
            q3[r1] = q3[r2];
            q3[r2] = temp3;

            String temp4 = q4[r1];
            q4[r1] = q4[r2];
            q4[r2] = temp4;
        }
        count = 0;
        //TO DO: push all (now in random order) into the Deck
        for (int i = 0; i < cat.length; i++) {
            Card c = new Card(cat[i], q1[i], q2[i], q3[i], q4[i]);
            push(c);
        }

    }
```

In MainActivity, to display a Card:

- Make a global variable

```
Deck d = new Deck();
```

- Add in the pop method to display the cards. Edit it to match your screen and your instance variables.

```
public void pop(View view){
    if(!d.isEmpty()) {
        Card c = d.pop();
        TextView cat = (TextView) findViewById(R.id.Category);
        TextView q1 = (TextView) findViewById(R.id.Q1);
        TextView q2 = (TextView) findViewById(R.id.Q2);
        TextView q3 = (TextView) findViewById(R.id.Q3);
        TextView q4 = (TextView) findViewById(R.id.Q4);
        cat.setText(c.getCategory());
        q1.setText(c.getQuestion1());
        q2.setText(c.getQuestion2());
        q3.setText(c.getQuestion3());
        q4.setText(c.getQuestion4());
    }
}
```