

# Issue of applying the patch to fix LayoutAnimation on Android

## 1. Overview

We've recently tried to apply the patch from FB team to fix several types of crashes about LayoutAnimation on Android for RN 59.8 release. We expected this patch would address all 3 crashes we found so far:

- `com.facebook.react.uimanager.IllegalViewOperationException: Trying to remove a view index above child count 0`  
at `com.facebook.react.uimanager.NativeViewHierarchyManager.manageChildren`  
...
- `java.lang.IllegalStateException: The specified child already has a parent. You must call removeView() on the child's parent first.`  
...  
at `android.view.ViewGroup.addView`  
at `com.facebook.react.uimanager.ViewGroupManager.addView`  
at `com.facebook.react.uimanager.NativeViewHierarchyManager.manageChildren`  
...
- `java.lang.IndexOutOfBoundsException: index=28 count=27`  
...  
at `android.view.ViewGroup.addView`  
at `com.facebook.react.uimanager.ViewGroupManager.addView`  
at `com.facebook.react.uimanager.NativeViewHierarchyManager.manageChildren`  
...

Unfortunately, we are still able to reproduce the second one after applying this patch. Here is the stack trace of that crash:

```
java.lang.RuntimeException: Exception thrown during native module call:
...
    (log for our business code)
...
    at
com.facebook.react.bridge.ReactContext.handleException(ReactContext.java:318)
    at
com.facebook.react.uimanager.GuardedFrameCallback.doFrame(GuardedFrameCallback.java:31)
)
    at
com.facebook.react.modules.core.ReactChoreographer$ReactChoreographerDispatcher.doFrame(ReactChoreographer.java:166)
    at
com.facebook.react.modules.core.ChoreographerCompat$FrameCallback$1.doFrame(ChoreographerCompat.java:84)
    at android.view.Choreographer$CallbackRecord.run(Choreographer.java:979)
    at android.view.Choreographer.doCallbacks(Choreographer.java:790)
    at android.view.Choreographer.doFrame(Choreographer.java:718)
    at
android.view.Choreographer$FrameDisplayEventReceiver.run(Choreographer.java:967)
    at android.os.Handler.handleCallback(Handler.java:808)
    at android.os.Handler.dispatchMessage(Handler.java:101)
    at android.os.Looper.loop(Looper.java:166)
    at android.app.ActivityThread.main(ActivityThread.java:7425)
```

```
    at java.lang.reflect.Method.invoke(Native Method)
    at com.android.internal.os.Zygote$MethodAndArgsCaller.run(Zygote.java:245)
    at com.android.internal.os.ZygoteInit.main(ZygoteInit.java:921)
Caused by: java.lang.IllegalStateException: The specified child already has a parent.
You must call removeView() on the child's parent first.
    at android.view.ViewGroup.addViewInner(ViewGroup.java:4976)
    at android.view.ViewGroup.addView(ViewGroup.java:4807)
    at android.view.ViewGroup.addView(ViewGroup.java:4747)
    at
com.facebook.react.uimanager.ViewGroupManager.addView(ViewGroupManager.java:39)
    at
com.facebook.react.uimanager.NativeViewHierarchyManager.manageChildren(NativeViewHiera
rchyManager.java:513)
    at
com.facebook.react.uimanager.UIViewOperationQueue$ManageChildrenOperation.execute(UIVi
ewOperationQueue.java:230)
    at
com.facebook.react.uimanager.UIViewOperationQueue$1.run(UIViewOperationQueue.java:922)
    at
com.facebook.react.uimanager.UIViewOperationQueue.flushPendingBatches(UIViewOperationQ
ueue.java:1030)
    at
com.facebook.react.uimanager.UIViewOperationQueue.access$2600(UIViewOperationQueue.jav
a:46)
    at
com.facebook.react.uimanager.UIViewOperationQueue$DispatchUIFrameCallback.doFrameGuard
ed(UIViewOperationQueue.java:1090)
    at
com.facebook.react.uimanager.GuardedFrameCallback.doFrame(GuardedFrameCallback.java:29
)
    at
com.facebook.react.modules.core.ReactChoreographer$ReactChoreographerDispatcher.doFram
e(ReactChoreographer.java:166)
    at
com.facebook.react.modules.core.ChoreographerCompat$FrameCallback$1.doFrame(Choreograp
herCompat.java:84)
    at android.view.Choreographer$CallbackRecord.run(Choreographer.java:979)
    at android.view.Choreographer.doCallbacks(Choreographer.java:790)
    at android.view.Choreographer.doFrame(Choreographer.java:718)
    at
android.view.Choreographer$FrameDisplayEventReceiver.run(Choreographer.java:967)
    at android.os.Handler.handleCallback(Handler.java:808)
    at android.os.Handler.dispatchMessage(Handler.java:101)
    at android.os.Looper.loop(Looper.java:166)
    at android.app.ActivityThread.main(ActivityThread.java:7425)
    at java.lang.reflect.Method.invoke(Native Method)
    at com.android.internal.os.Zygote$MethodAndArgsCaller.run(Zygote.java:245)
    at com.android.internal.os.ZygoteInit.main(ZygoteInit.java:921)
```

To make it clear, the patch we are trying to apply contains two commits:

<https://github.com/facebook/react-native/commit/20b4879dfd34716997e92bb5d89b0e4f873fef98#diff-55b8191729d605b79bc0964d365ce96f>

<https://github.com/facebook/react-native/commit/5f027ec64d6764fbbb9813fabb373194dec79db7#diff-55b8191729d605b79bc0964d365ce96f>

## 2. Look into the crash

We have a screen that is using Flatlist to display some music cards in our project, and here is how we setup LayoutAnimation in JS code:

```
update: {
  type: LayoutAnimation.Types.linear,
  property: LayoutAnimation.Properties.scaleXY,
  duration: xxx,
},
delete: {
  type: LayoutAnimation.Types.linear,
  property: LayoutAnimation.Properties.opacity,
  duration: xxx,
},
```

The steps we reproduce this crash is:

1. Play the Flatlist for a while which would trigger LayoutAnimation a couple of times
2. Leave the current screen and then come back immediately
3. Crash happens when application is trying to restore the previous state of this screen

Here are some critical logs when the crash happens:

```
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 0
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 0
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4539, index = 1
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4539, index = 1
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4587, index = 2
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4587, index = 2
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4635, index = 3
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4635, index = 3
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4683, index = 4
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4683, index = 4
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4729, index = 5
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4729, index = 5
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4777, index = 6
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4777, index = 6
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4825, index = 7
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4825, index = 7
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4863, index = 8
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4863, index = 8
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4899, index = 9
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4899, index = 9

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [5], tag = 4905
#### going to add view, tag = 4785, at 0
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4729, delete = true
#### going to add view, tag = 4787, at 0
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4729, delete = true
#### going to add view, tag = 4793, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4729, delete = true
#### going to add view, tag = 4779, at 0
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [5], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4777, delete = true
#### going to add view, tag = 4783, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4777, delete = true
```

```
#### going to add view, tag = 4795, at 2
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4777, delete = true
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [5], tag = 4905
#### going to add view, tag = 4803, at 0
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4825, delete = true
#### going to add view, tag = 4807, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4825, delete = true
#### going to add view, tag = 4813, at 2
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4825, delete = true
#### going to add view, tag = 4817, at 0
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [5], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4863, delete = true
#### going to add view, tag = 4827, at 0
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4863, delete = true
#### going to add view, tag = 4829, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4863, delete = true
#### going to add view, tag = 4839, at 0
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [5], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4899, delete = true
#### going to add view, tag = 4845, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4899, delete = true
#### going to add view, tag = 4849, at 2
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4899, delete = true

----- (UIManager.manageChildren) tag: 4905, moveFrom: [0], moveTo: [1], addTags: [],
atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4493, delete = false
#### going to add view, tag = 4867, at 1
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4493, delete = false
#### going to add view, tag = 4877, at 0
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 1
#### going to add view, tag = 4883, at 1
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 1

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5029], atIndices: [3], removeFrom: [], tag = 4905
#### going to add view, tag = 4729, at 5
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5029, index = 3
#### going to add view, tag = 4777, at 6
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5029, index = 3

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5069], atIndices: [5], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5069, index = 5
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5069, index = 5

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5109], atIndices: [7], removeFrom: [], tag = 4905
#### going to add view, tag = 4949, at 1
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5109, index = 7
#### going to add view, tag = 4957, at 0
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5109, index = 7
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5147], atIndices: [8], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5147, index = 8
#### remove view at 0, normalized index = 0, tag = 4425, parent tag = 4427
#### going to add view, tag = 4927, at 0
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5147, index = 8
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5185], atIndices: [9], removeFrom: [], tag = 4905
#### going to add view, tag = 4959, at 1
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5185, index = 9
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5185, index = 9
#### remove view at 0, normalized index = 0, tag = 4493, parent tag = 4905
#### going to add view, tag = 4493, at 1

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5247], atIndices: [10], removeFrom: [], tag = 4905
```

```
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5247, index = 10
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5247, index = 10
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5285], atIndices: [11], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5285, index = 11
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5285, index = 11
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5323], atIndices: [12], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5323, index = 12
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5323, index = 12
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5359], atIndices: [13], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5359, index = 13
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5359, index = 13
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5397], atIndices: [14], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5397, index = 14
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5397, index = 14
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5435], atIndices: [15], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5435, index = 15
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5435, index = 15
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5473], atIndices: [16], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5473, index = 16
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5473, index = 16
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5509], atIndices: [17], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5509, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5509, index = 17
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5547], atIndices: [18], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5547, index = 18
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5547, index = 18
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5585], atIndices: [19], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5585, index = 19
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5585, index = 19

----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags: [],
atIndices: [], removeFrom: [20], tag = 4905
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5623], atIndices: [20], removeFrom: [], tag = 4905
#### remove view at 0, normalized index = 0, tag = 5113, parent tag = 5125
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5623, index = 20
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5623, index = 20
#### remove view at 0, normalized index = 0, tag = 5149, parent tag = 5163
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5659], atIndices: [21], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5659, index = 21
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5659, index = 21
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5697], atIndices: [22], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5697, index = 22
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5697, index = 22
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5735], atIndices: [23], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5735, index = 23
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5735, index = 23
----- (UIManager.manageChildren) tag: 4905, moveFrom: [], moveTo: [], addTags:
[5769], atIndices: [24], removeFrom: [], tag = 4905
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5769, index = 24
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5769, index = 24

----- (UIManager.manageChildren) tag: 4905, moveFrom: [1], moveTo: [17], addTags:
[], atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4493, delete = false
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 4493, delete = false
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 4493, index = 17
```



```

#### Optimizer, addNonLayoutNode, parent = 4905, child = 5323, index = 17
----- (UIManager.manageChildren) tag: 4905, moveFrom: [0], moveTo: [17], addTags:
[], atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5359, delete = false
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5359, delete = false
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5359, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5359, index = 17
----- (UIManager.manageChildren) tag: 4905, moveFrom: [0], moveTo: [17], addTags:
[], atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5397, delete = false
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5397, delete = false
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5397, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5397, index = 17
----- (UIManager.manageChildren) tag: 4905, moveFrom: [0], moveTo: [17], addTags:
[], atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5435, delete = false
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5435, delete = false
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5435, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5435, index = 17
----- (UIManager.manageChildren) tag: 4905, moveFrom: [0], moveTo: [17], addTags:
[], atIndices: [], removeFrom: [], tag = 4905
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5473, delete = false
#### Optimizer, removeNodeFromParent, parent = 4905, tag = 5473, delete = false
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5473, index = 17
#### Optimizer, addNonLayoutNode, parent = 4905, child = 5473, index = 17

#### remove view at 1, normalized index = 1, tag = 4493, parent tag = 4905
#### going to add view, tag = 4493, at 17
#### remove view at 0, normalized index = 0, tag = 4539, parent tag = 4905
#### going to add view, tag = 4539, at 17
#### remove view at 0, normalized index = 0, tag = 4587, parent tag = 4905
#### going to add view, tag = 4587, at 17
#### remove view at 0, normalized index = 0, tag = 5029, parent tag = 4905
#### going to add view, tag = 5029, at 17
#### remove view at 0, normalized index = 0, tag = 4635, parent tag = 4905
#### going to add view, tag = 4635, at 17
#### remove view at 0, normalized index = 0, tag = 4683, parent tag = 4905
#### going to add view, tag = 5069, at 17

```

These logs reflect the whole flow of the crash happening. To help understanding, view 4905 is the view container of the list which is *ReactHorizontalScrollView* on Android, and crash happens at the last line when adds view 5069, which already has a parent, into view 4905 at index 17.

The code run into this situation due to inconsistent view hierarchy between *ReactShadowNode* and *NativeViewHierarchyManager* when there are pending deletion animations.

In *UIImplementation*, views will be added into the latest view hierarchy without any pending state calculation, but it does consider the pending state if the view to be added is equal to or larger than the starting position of deleting items in *NativeViewHierarchyManager*.

Relevant code snippet in *UIImplementation*:

```

if (numToMove > 0) {
    Assertions.assertNotNull(moveFrom);
    Assertions.assertNotNull(moveTo);

    for (lastIndexRemoved = 0; lastIndexRemoved < numToMove; ++lastIndexRemoved) {
        i = moveFrom.getInt(lastIndexRemoved);
        indexToRemove = cssNodeToManage.getChildAt(i).getReactTag();
        viewsToAdd[lastIndexRemoved] = new ViewAtIndex(indexToRemove, moveTo.getInt(lastIndexRemoved));
        indicesToRemove[lastIndexRemoved] = i;
        tagsToRemove[lastIndexRemoved] = indexToRemove;
    }
}

if (numToAdd > 0) {
    Assertions.assertNotNull(addChildTags);
    Assertions.assertNotNull(addAtIndices);

    for (lastIndexRemoved = 0; lastIndexRemoved < numToAdd; ++lastIndexRemoved) {
        i = addChildTags.getInt(lastIndexRemoved);
        indexToRemove = addAtIndices.getInt(lastIndexRemoved);
        viewsToAdd[numToMove + lastIndexRemoved] = new ViewAtIndex(i, indexToRemove);
    }
}

for (i = 0; i < viewsToAdd.length; ++i) {
    ViewAtIndex viewAtIndex = viewsToAdd[i];
    ReactShadowNode cssNodeToAdd = this.mShadowNodeRegistry.getNode(viewAtIndex.mTag);
    if (cssNodeToAdd == null) {
        throw new IllegalArgumentException("Trying to add unknown view tag: " + viewAtIndex.mTag);
    }
    cssNodeToManage.addChildAt(cssNodeToAdd, viewAtIndex.mIndex);
}

```

And code snippet in *NativeViewHierarchyManager*:

```

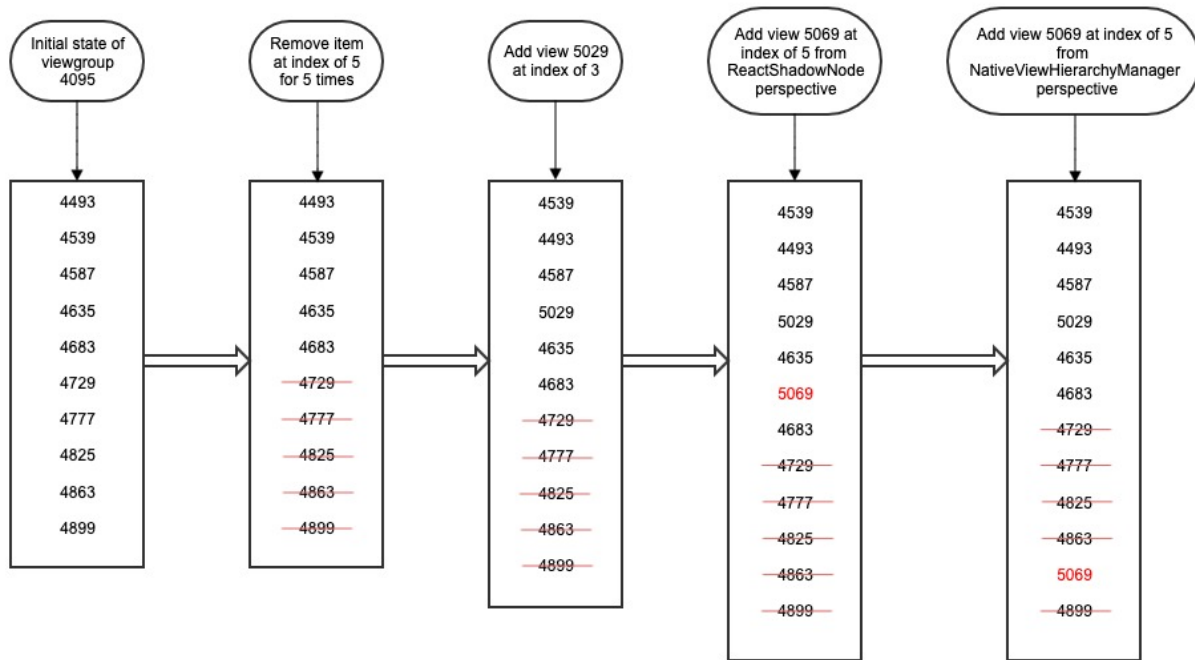
if (viewsToAdd != null) {
    for (i = 0; i < viewsToAdd.length; ++i) {
        ViewAtIndex viewAtIndex = viewsToAdd[i];
        View viewToAdd = (View) this.mTagsToViews.get(viewAtIndex.mTag);
        if (viewToAdd == null) {
            throw new IllegalArgumentException("Trying to add unknown view tag: " + viewAtIndex.mTag);
        }

        int normalizedIndexToAdd = this.normalizeIndex(viewAtIndex.mIndex, pendingIndicesToDelete);
        viewManager.addView(viewToManage, viewToAdd, normalizedIndexToAdd);
    }
}

```

See the flow shown in the picture below:





So, when the state gets inconsistent and we try to move views at those particular indices, crash will happen.