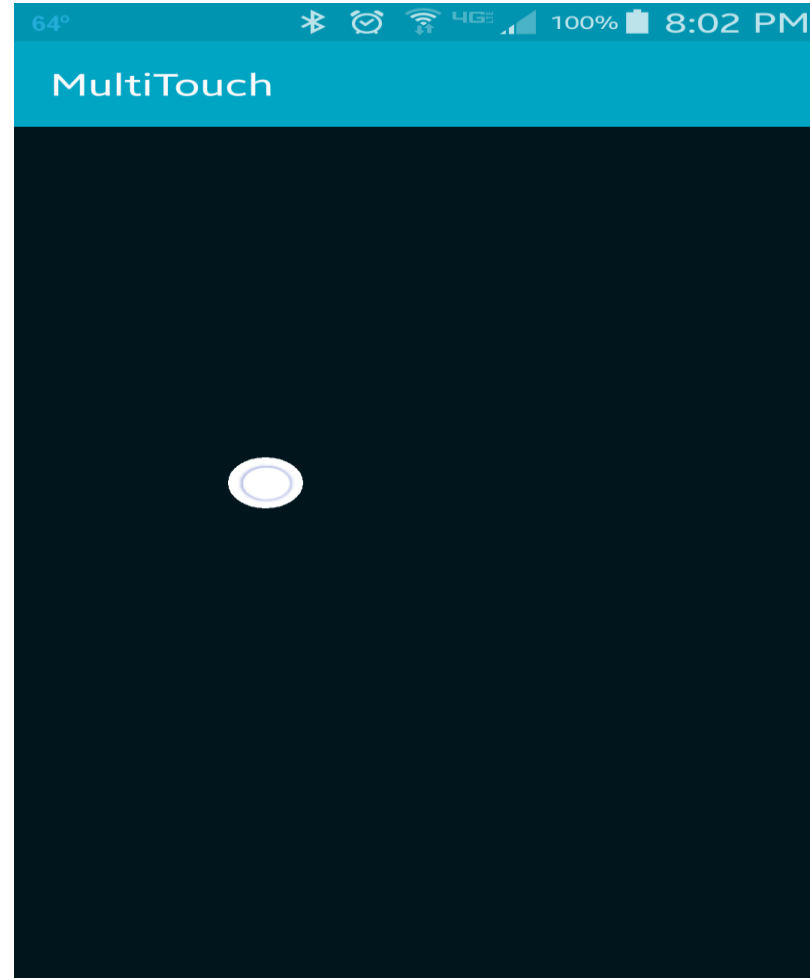
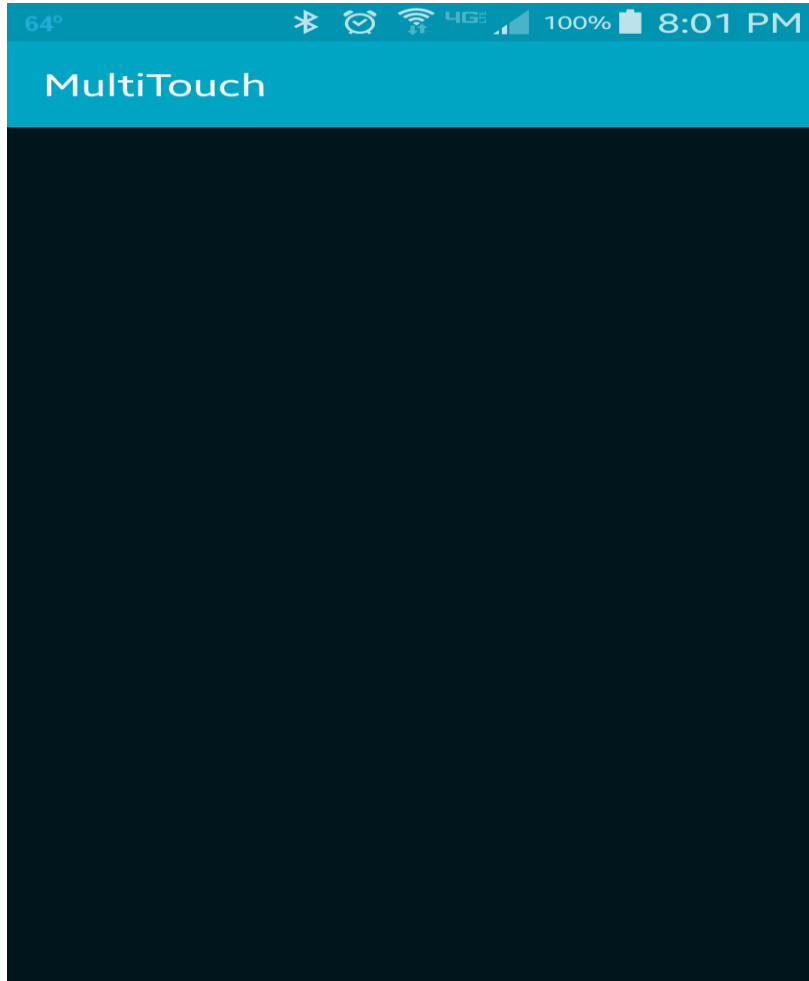


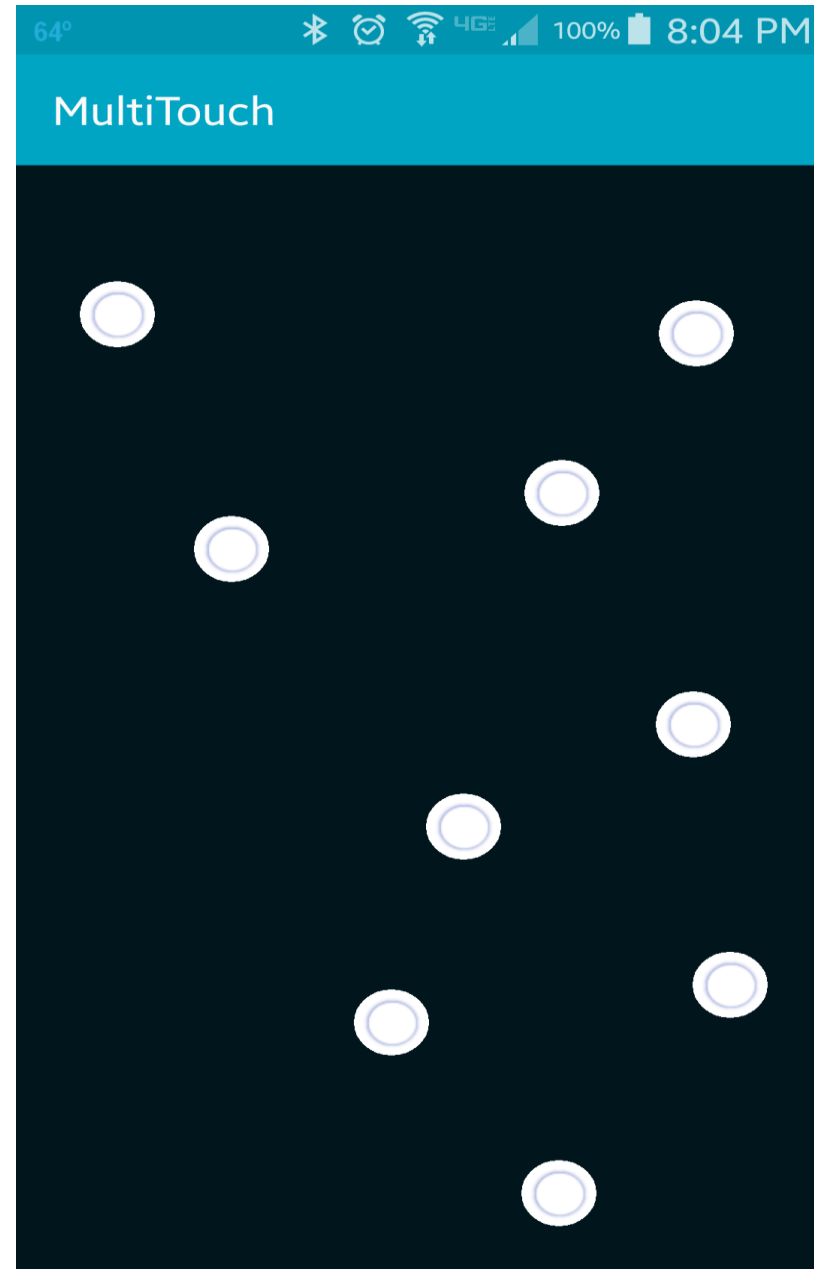
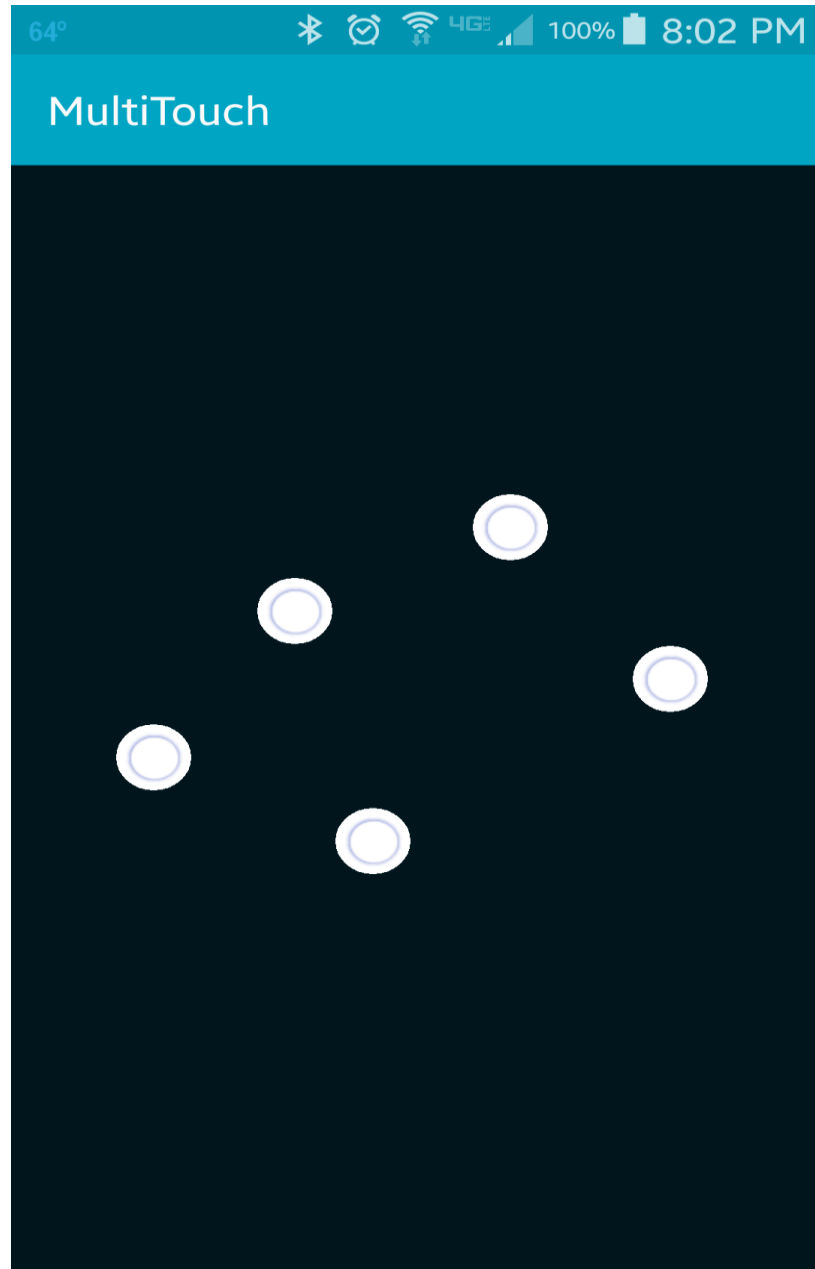
Android - MultiTouch

- Demonstrates multi-touch on Android devices
- A circle is shown where the finger touches
- If there are multiple touches, multiple circles are shown
- The circle follows the finger when the finger is dragged over
- An anonymous class derived from `android.view.View` is used
 - Override :
 - `onDraw()` - to draw circle
 - `onTouchEvent()` - to intercept touch events
- A list of active touch positions is maintained
 - Used by `onDraw()` to draw circles
 - Updated by `onTouchEvent()`

- `onTouchEvent()`
 - Called when new touch event occurs
- `getAction()`
 - Get the type of the motion event
 - Some of the events are:
 - `MotionEvent.ACTION_DOWN`
 - A pressed gesture has started
 - `MotionEvent.ACTION_POINTER_DOWN`
 - User puts finger on screen
 - `MotionEvent.ACTION_MOVE`
 - User moved a finger
 - `MotionEvent.ACTION_UP`
 - A pressed gesture has finished
 - `MotionEvent.ACTION_POINTER_UP`
 - User lifted a finger
- All the active touches are iterated over and added to the list except the event where user lifted his finger is ignored

- A white circle is drawn wherever the finger touches the screen
- The Android emulator can only simulate one touch
- Not all Android devices support multi-touch





References

- [MotionEvent](#)
- [Point](#)
- [View](#)

Exercise

- Change the application so that it draws **one** rectangle that is just large enough to include all active touches. Use red as the filling color of this bounding box.