

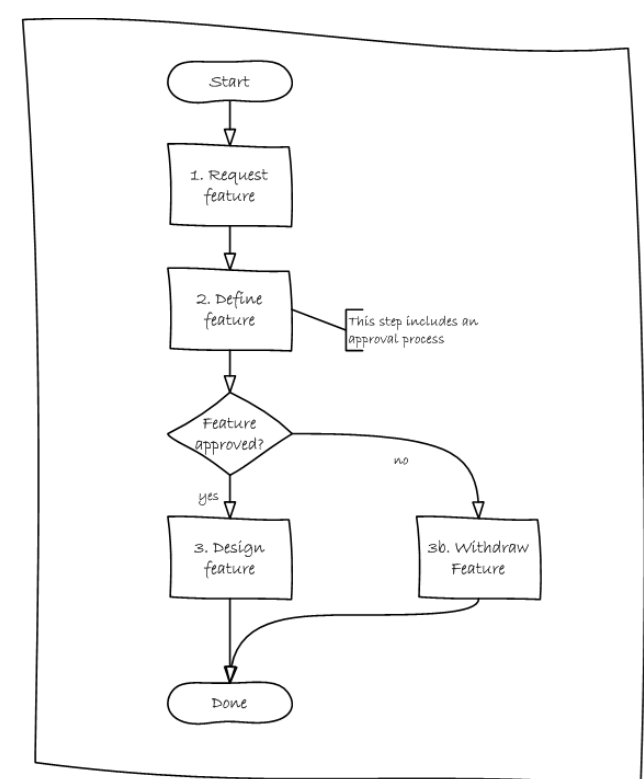


Your Flowchart Secretary

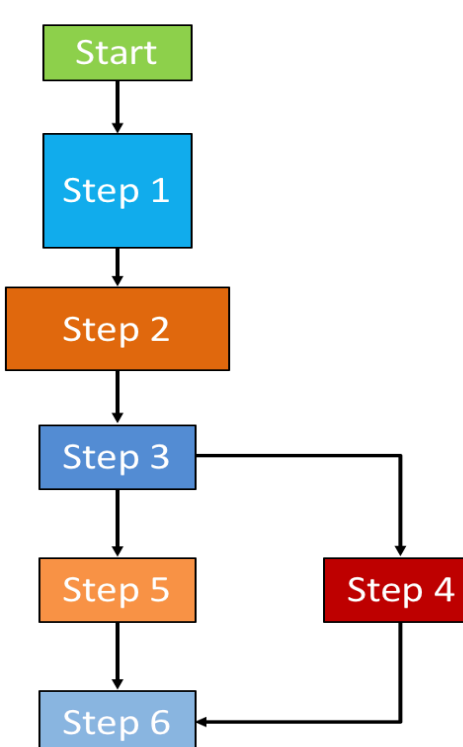
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Motivation

Flowchart is an ideal way to explicit our thoughts. However, drawing up a well organized flowchart can be SUPER time consuming. In that sense, it would be convenient if we can automatically generate the flowchart template. Here we made it become true! A easy mobile app for people to convert handwritten flowchart into electronic version.



Conversion



Methodology

A. Component Extraction

Critical component, for example the rectangles, diamonds, circles and arrows are separated, extracted and classified. The original flowchart will be decomposed.

B. Component Labelling

Label and mark each component in order.

C. Component characterization

Use parameter to determine the position and size.

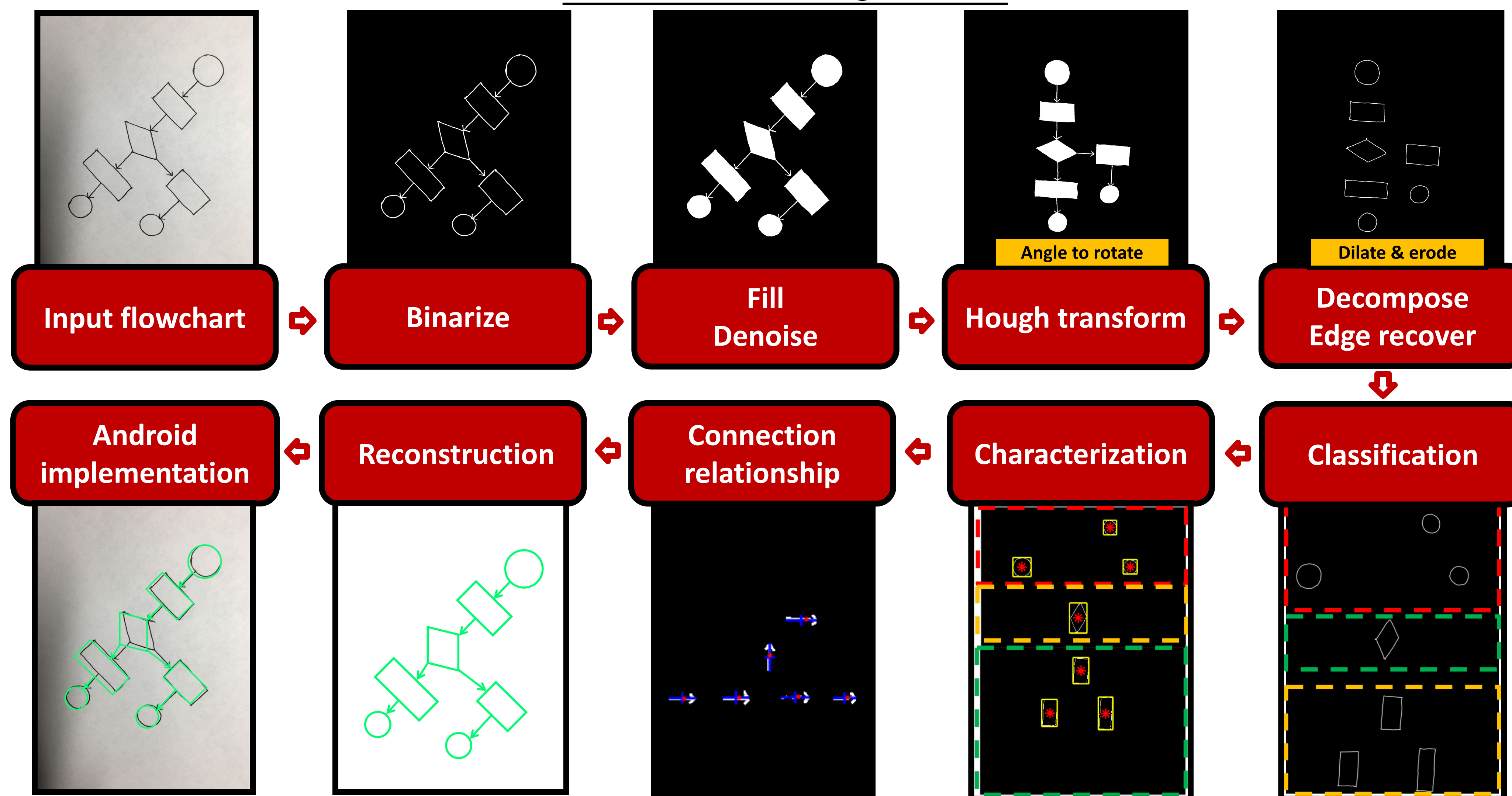
D. Graph Construction

Determine the connection relationship for components and construct output graph.

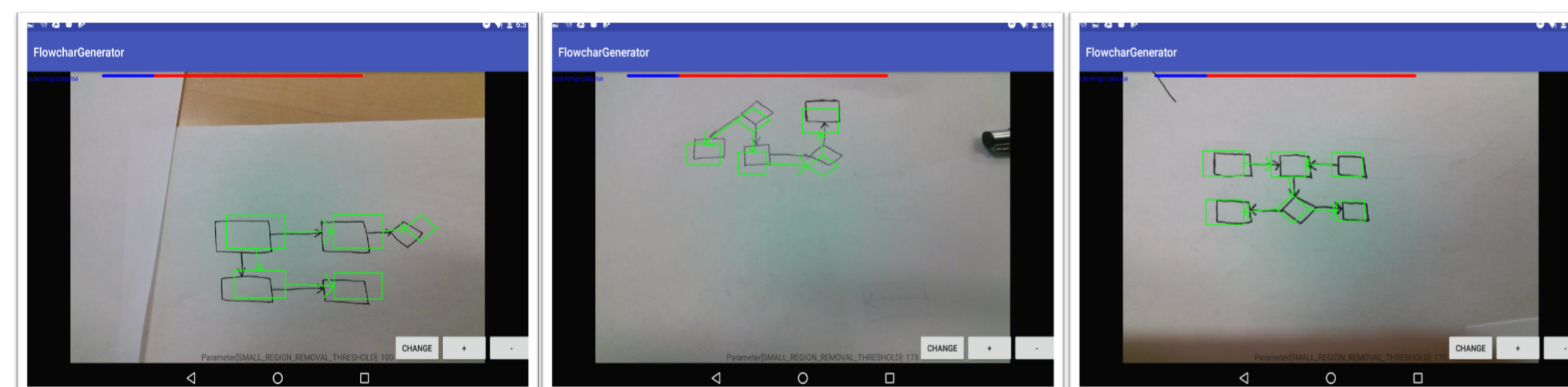
E. Android Implementation

Develop an app that can be used on Android device.

Overview of Algorithm



Experimental Results



- ❑ The product is implemented in Android device for users' convenience. Image processing algorithm is all developed by Java with OpenCV for compatibility.
- ❑ Real-time conversion is achieved. Multithread is implemented in Android Studio to guarantee great user experience.
- ❑ Fitting parameters can be tuned dynamically by users for enhanced flexibility.