1. Solution idea

We use a smartphone's camera to take images of the pieces and the frame. Then we use OpenCV library to detect polygons from the input images. Our main algorithm to solve the problem is back - tracking.

2. Back - Tracking

In each step of the back – tracking process we choose one piece and try to put it in the frame. To speed up the process, we sort the pieces by their "compatibility with the frame" value, which is calculated by various method and try the pieces in that order.

3. Programming language

Our team uses C++ and OpenCV library to design the project. Our program is written in Visual Studio 2015 and runs in Window 10 OS.