CSL 852, Computational Geometry: Practice Problems

Dual transformation and applications

1. Given a set of line segments, how will you preprocess them so that you can answer the following queries efficiently

(i) Given a ray (starting point and a direction), find out the first segment that it hits.

(ii) Does there exist a line, that intersects all the line-segments (called a transversal).

Hint: What is the dual of a line segment ?