Problem Sheet: Seven Bridges of Königsberg Graph Theory
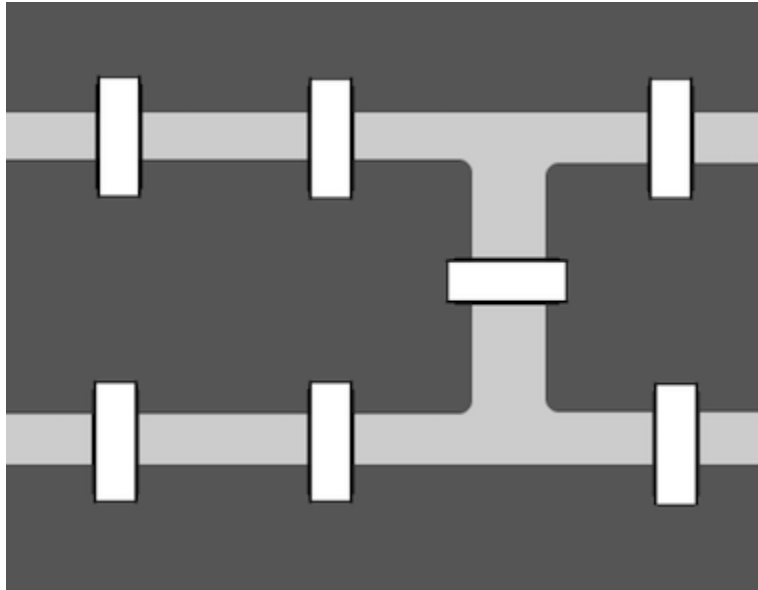
The following problem was first presented by Leonhard Euler [1]. The problem concerns a former city called Königsberg, which is now called Kaliningrad, in Prussia (now in Russia). Take the time to try to solve this problem yourself.

Question

In Königsberg, there were seven bridges linking four different parts of the city. These are depicted in the diagram below. The question is: is it possible to walk through the city crossing each bridge once and only once [2]?

References

[1] Leonard Euler. Solutio problematis ad geometriam situs pertinentis. *Commentarii academiae scientiarum Petropolitanae*, 8:128–140, 1741.

[2] Wikipedia. Seven bridges of königsberg.