## Quantum Computing in Regional Sciences: An Optimization Problem



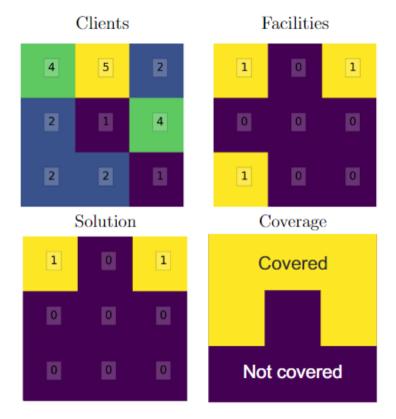
Anton Simen Emilio Pelaez Ved Dharkar

Mentor Team:
Daniel Sierra-Sosa
Juan Guillermo Lalinde
Alejandro Giraldo

## The Background



We are looking to explore the application of Quantum Computing to the Regional Science field, where several optimization formulations have been proposed and solved using heuristic methods that approximate an optimal solution.



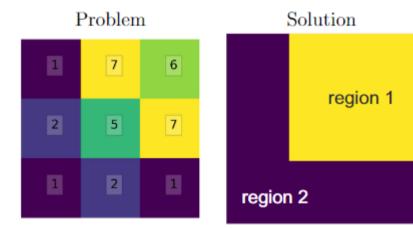
Example of a problem Instance

BM Quantum / © 2021 IBM Corporation

## The Problem



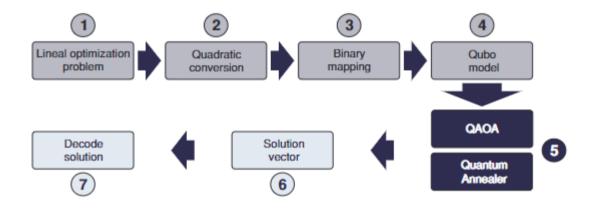
The p-regions problem:
The aggregation or
clustering of n small
areas into p spatially
contiguous
regions as
homogeneous as
possible



IBM Quantum / © 2021 IBM Corporation

## Approach





IBM Quantum / © 2021 IBM Corporation