

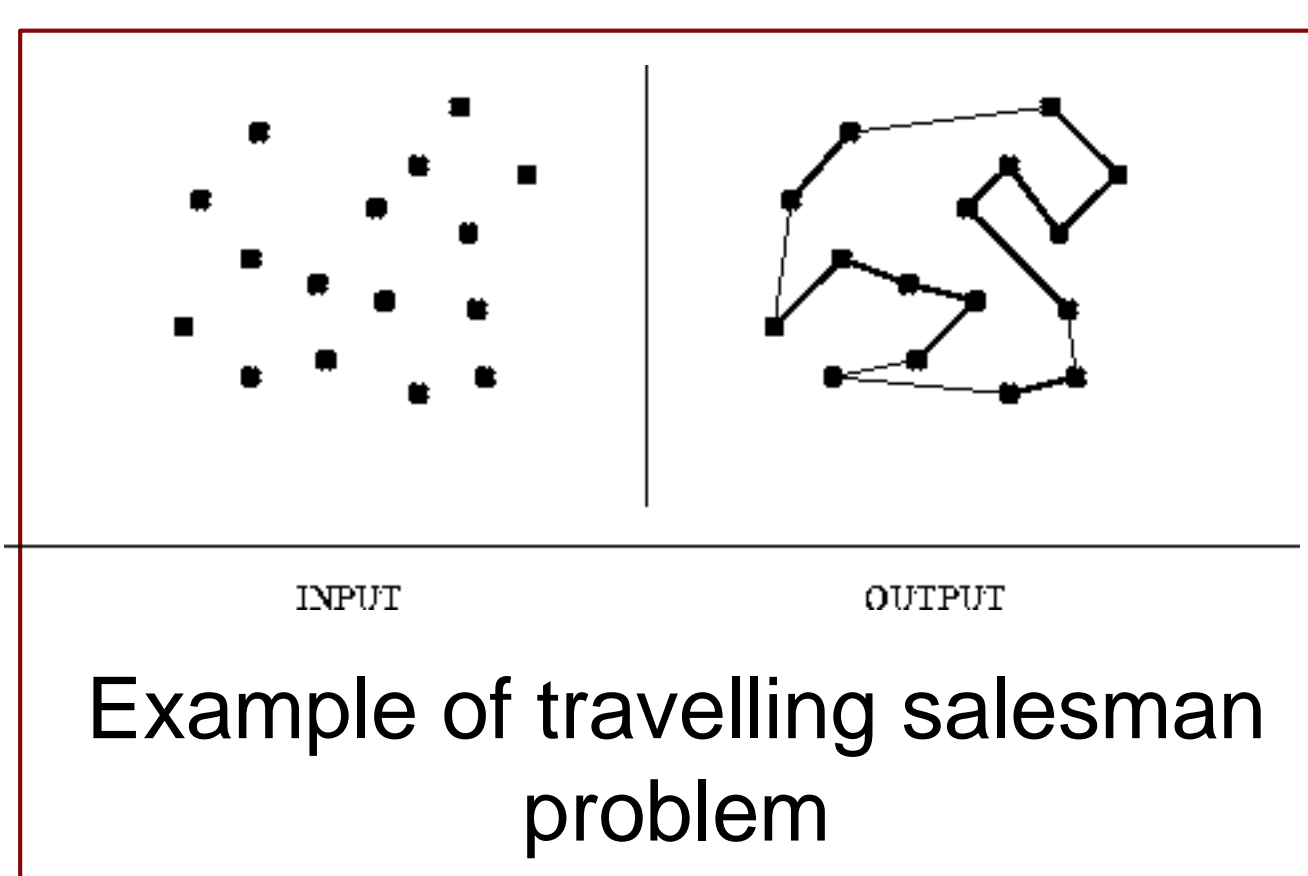
## Research

An artificial intelligence  
Mimics natural processes



Find a Solution to the Travelling Salesman Problem

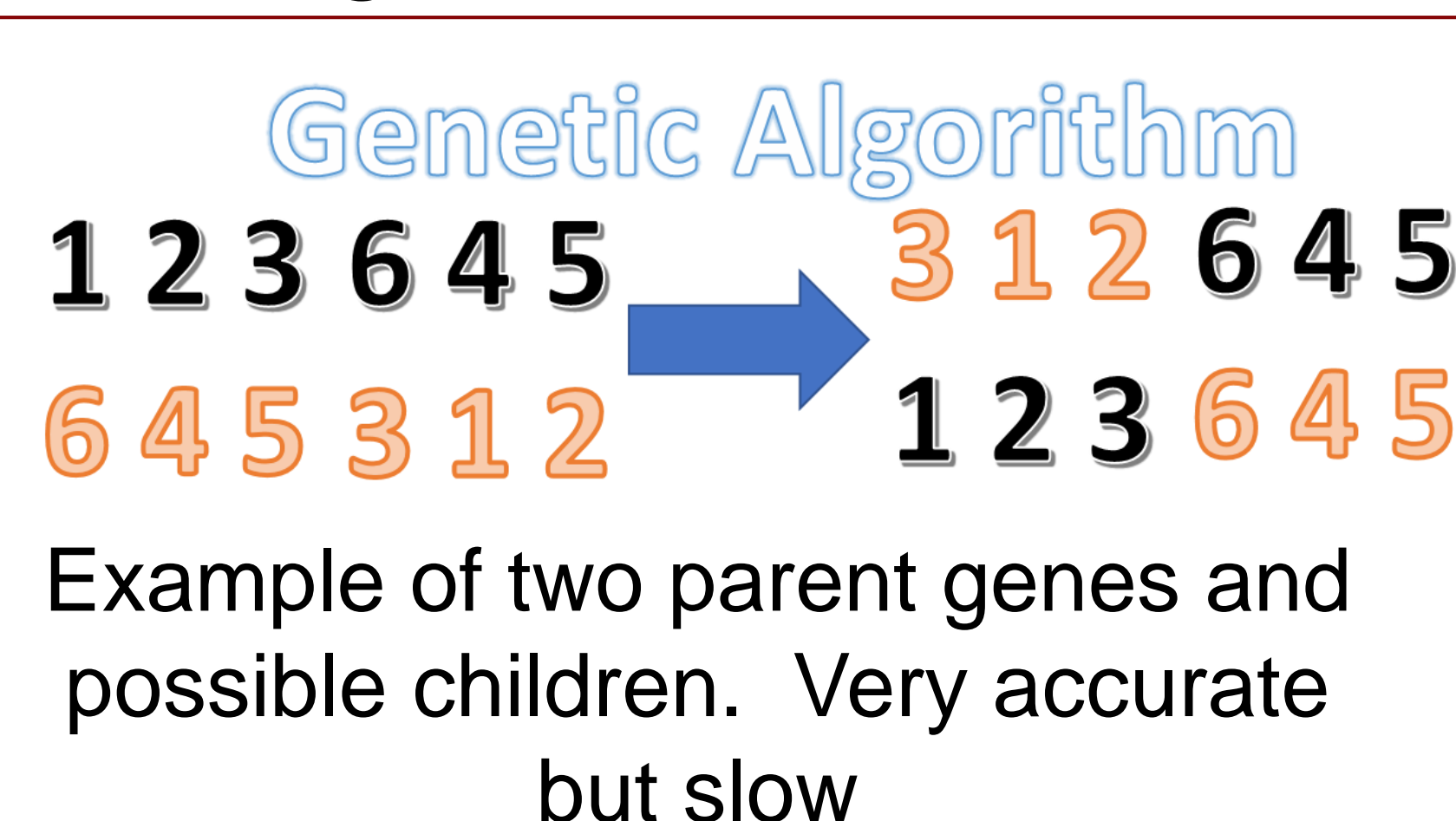
The Travelling Salesman Problem:  
Best Travelling Route



Methods Used:  
The 2-opt method

Genetic Algorithm

Result:  
Hybrid 2-opt/Genetic Algorithm Artificial Intelligence



## Optimization

The ability to get a job done as quickly as possible

Use the fewest resources possible

Genetic modifications are meant to  
Increase the efficiency of food production

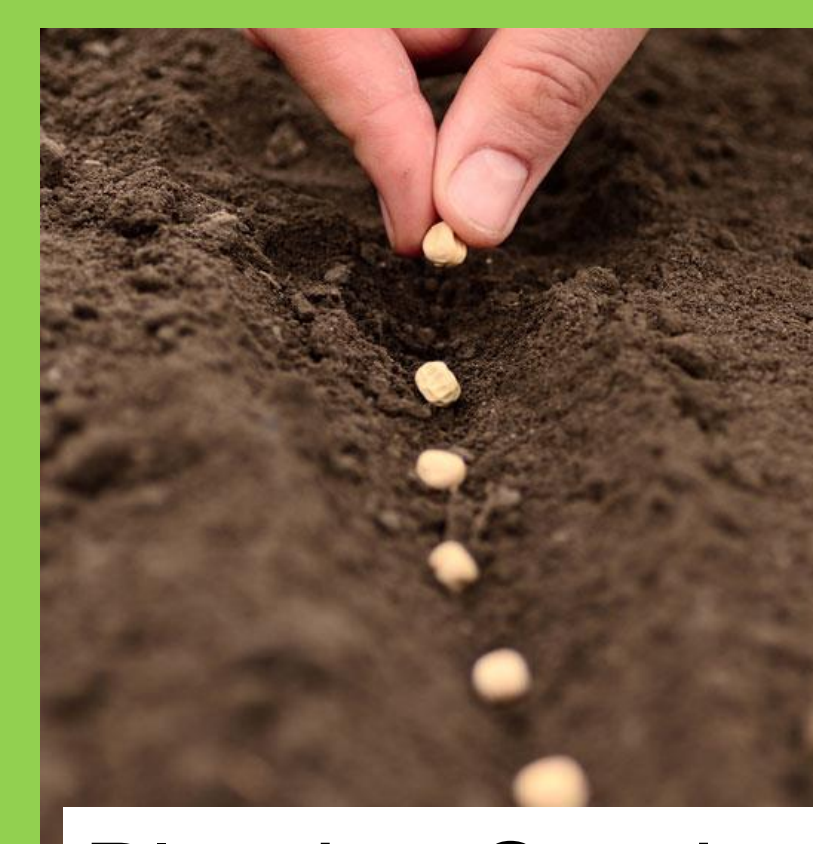
Better use of resources



Grafting



Propagation by Cuttings



Planting Seeds



## Exploration

Methods to modify organisms

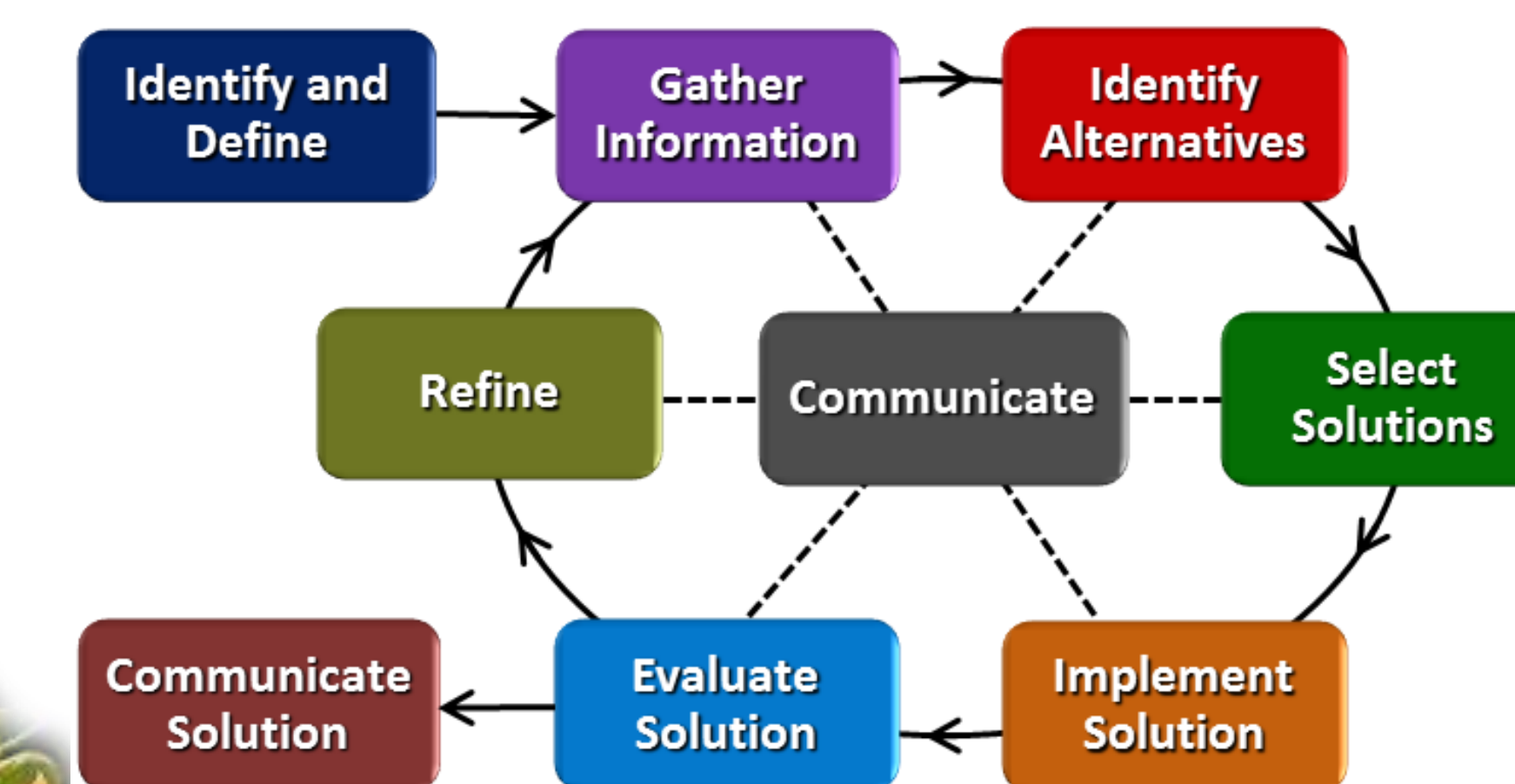
Which method is best?

Do you know which foods that you eat  
Are genetically modified?



You will be working in teams to explore these options and attempting to optimize techniques.

Engineering Design Process



Option 1

Option 2

Or



Example of two opt. Smallest distance chosen.