# Final Project

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# 1 Project description.

# 2 Algorithm 1

## 2.1 Solution ideas and algorithms.

# 3 Factor Analysis (FA)

## 3.1 Pseudo-codes

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**Algorithm 1:** FCM algorithm

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**input**  : A batch of data points.
**output**: Dataset being divided into several groups.

1 Initialize $U = [u_{ij}]$ matirx, $U^0$
2 **while** $||U^{k+1} - U^k|| >= \varepsilon$ **do**
3 $\quad$ At k-step: calculate the centers vectors $C^k = [c_j]$ with $U^k$
4 $\quad$ Update $U^k$,$U^{k+1}$

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# 4 Independent Component Analysis (ICA)

# 5 Causal discovery algorithms

# 6 Causal tree reconstruction