

# Assignment 1

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Implement candidate elimination algorithm. The program should be generic to work on any dataset. The languages allowed and input/output format is described below.

**Languages Allowed:** C, C++, Java

## Input Format:

First line contains N and M. Where N = number records to be read as training data, and M = Number of attributes. The next M lines will contain attribute names and the values it can take. Next N lines give values of M attributes. Last attribute will be target attribute. Its values will be either "Yes" or "No".

## Output Format:

Your code should implement candidate elimination algorithm and show the most specific hypothesis S and maximally general hypotheses G. If S and G both converge to single hypotheses then show it as output. If they don't converge to single hypotheses then output NULL.

## Example:

### Input:

```
4 7
Sky Sunny Rainy Cloudy
AirTemp Warm Cold
Humidity Normal High
Wind Strong Weak
Water Warm Cool
Forecast Same Change
EnjoySport Yes No
Sunny Warm Normal Strong Warm Same Same Yes
Sunny Warm High Strong Warm Same Yes
Rainy Cold High Strong Warm Change No
Sunny Warm High Strong Cool Change Yes
```

### Output:

```
S: {<Sunny, Warm, ?, Strong, ?, ?>}
G: {<Sunny, ?, ?, ?, ?, ?, ?>, <?, Warm, ?, ?, ?, ?>}
{<Sunny, Warm, ?, ?, ?, ?>, <Sunny, ?, ?, Strong, ?, ?>, <?, Warm,
?, Strong, ?, ?>}
```

## Remarks:

1. Though the example given is from textbook, the training in data can be from anywhere. But the input format will be same as specified above. You can refer to datasets in UCI machine learning repository: <https://archive.ics.uci.edu/ml/datasets.html>
2. The training data is guaranteed to be having discrete value attributes.
3. Input will be given from stdin.

**Report:**

Report should contain following things:

1. ID and names of team members
2. Language used
3. Dataset used for testing the code and version space produced by it

**Submission should contain zip file of following documents:**

1. Source code
2. Report

**Deadline: September 6, 23:59**