

Example

- Dependency requirements
 - Numpy (ver A, B, C)
 - Scipy (ver D, E, F)
 - Pytorch (ver X, Y, Z)
- Parallel Build order
 - $A \leftarrow \{B, C\}$
 - $B \leftarrow \{E\}$
 - $C \leftarrow \{D, E, F\}$
 - $D, E, F \leftarrow \{\}$
 - $G \leftarrow \{C\}$

Pre-processing: Constraint propagation

- Node consistency: reduce the domain for unary constraints
- Arc consistency: every element in the domain satisfies binary constraints
- $x_i \in X_i : \exists x_j \in X_j$ such that (x_i, x_j) satisfies binary consistency.