Basic formulas :

- **Strict ordering:**

  $$\bigwedge_{XY \in \mathcal{W}} XY.1 \vee \ldots \vee XY.6$$ **at least 1 placement**

  $$\bigwedge_{XY \in \mathcal{W}} \neg(XY.1 \wedge XY.2) \wedge \neg(XY.1 \wedge XY.3) \wedge \ldots \wedge \neg(XY.5 \wedge XY.6)$$ **at most 1 placement**

  $$\bigwedge_{XY, X'Y' \in \mathcal{W}} \bigwedge_{i=1..6} \neg(XY.i \wedge X'Y'.i)$$ **each placement only once**

- **The same for the 6 ends of marriage**

- **Similar for the 6 "jobs"**

  (be carful with the "unk" job)

Code info from the puzzle:

- $CP.6 \wedge CP.dok$
- $\bigvee_{XY \in \mathcal{W}} (XY.4 \wedge XY.gep \wedge \neg XY.bfm)$
- $AB.moh \wedge \neg AB.1 \wedge CH.5$
- $\bigvee_{XY, X'Y' \in \mathcal{W}} ((XY.1 \wedge XY.div \wedge X'Y'.2 \wedge X'Y'.com) \vee \ldots \vee (XY.5 \wedge XY.div \wedge X'Y'.6 \wedge X'Y'.com))$
- $\neg JS.wid$
- $\bigvee_{X_1Y_1, X_2Y_2, X_3Y_3 \in \mathcal{W}} ((X_1Y_1.1 \wedge X_1Y_1.AC \wedge X_2Y_2.2 \wedge X_2Y_2.ard \wedge X_3Y_3.3 \wedge X_3Y_3.moh) \vee (X_1Y_1.1 \wedge X_1Y_1.AC \wedge X_2Y_2.3 \wedge X_2Y_2.ard \wedge X_3Y_3.4 \wedge X_3Y_3.moh) \vee \ldots \vee (X_1Y_1.4 \wedge X_1Y_1.AC \wedge X_2Y_2.5 \wedge X_2Y_2.ard \wedge X_3Y_3.6 \wedge X_3Y_3.moh))$
- $CA.ann$
- $\bigvee_{XY \in \mathcal{W}} (XY.2 \wedge XY.bfi)$

b) Let φ be the conjunction of all formulas. For each of the 108 variables p test whether

$$\varphi \to p \text{ is valid}$$

E.g., if $\varphi \to CA.wid$ holds, then Catherine of Aragon was a widow before marrying Henry.

c) Each decision procedure deciding the satisfiability or validity of propositional formulae does the job: e.g. resolution or tableaux methods