**INTRODUCTION TO PROLOG**

**Theory:**

Prolog is a logic programming language associated with artificial intelligence and computational linguistics. It has important role in artifical intelligence. Unlinke many other programming languages, prolog is intended primarily as a declarative programming language. The program logic is expressed in terms of relations, represented as facts and rules. A computation is initiated by running a query over these relations.The language was developedand implemented by Alain Colmerauer with Philippe Roussel in 1972. Prolog is well suited for specific tasks that benefit from rule base logical queries uch as searching bdatabases, voice contril systems and filling templates.

**Syntax:**

In Prolog, we declare some facts. Prolog facts are expressed in definite pattern. Facts contain entities and their relation. Entities are written within the parenthesis separated by comma. Their relation is expressed at the start and outside the paranthesis. Every fact or rule ends with a dot. So, a typical prolog fact goes as follows:

relation(entity1, entity2; ...).

**Example:**

father(Luke, Leo).

mother(Lily,Leo).

A typical Prolog query can be asked as:

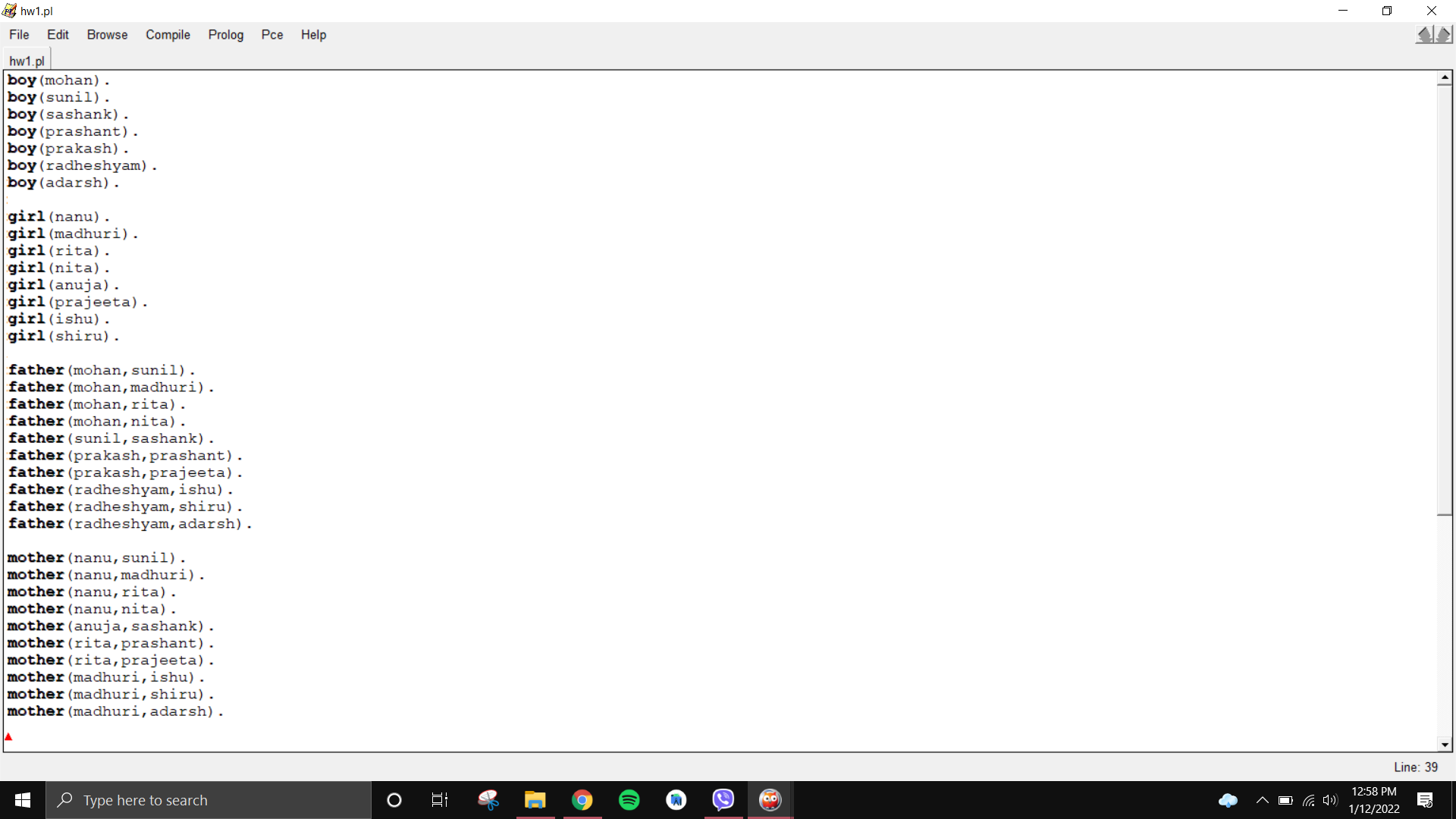
?-mother(Lily).

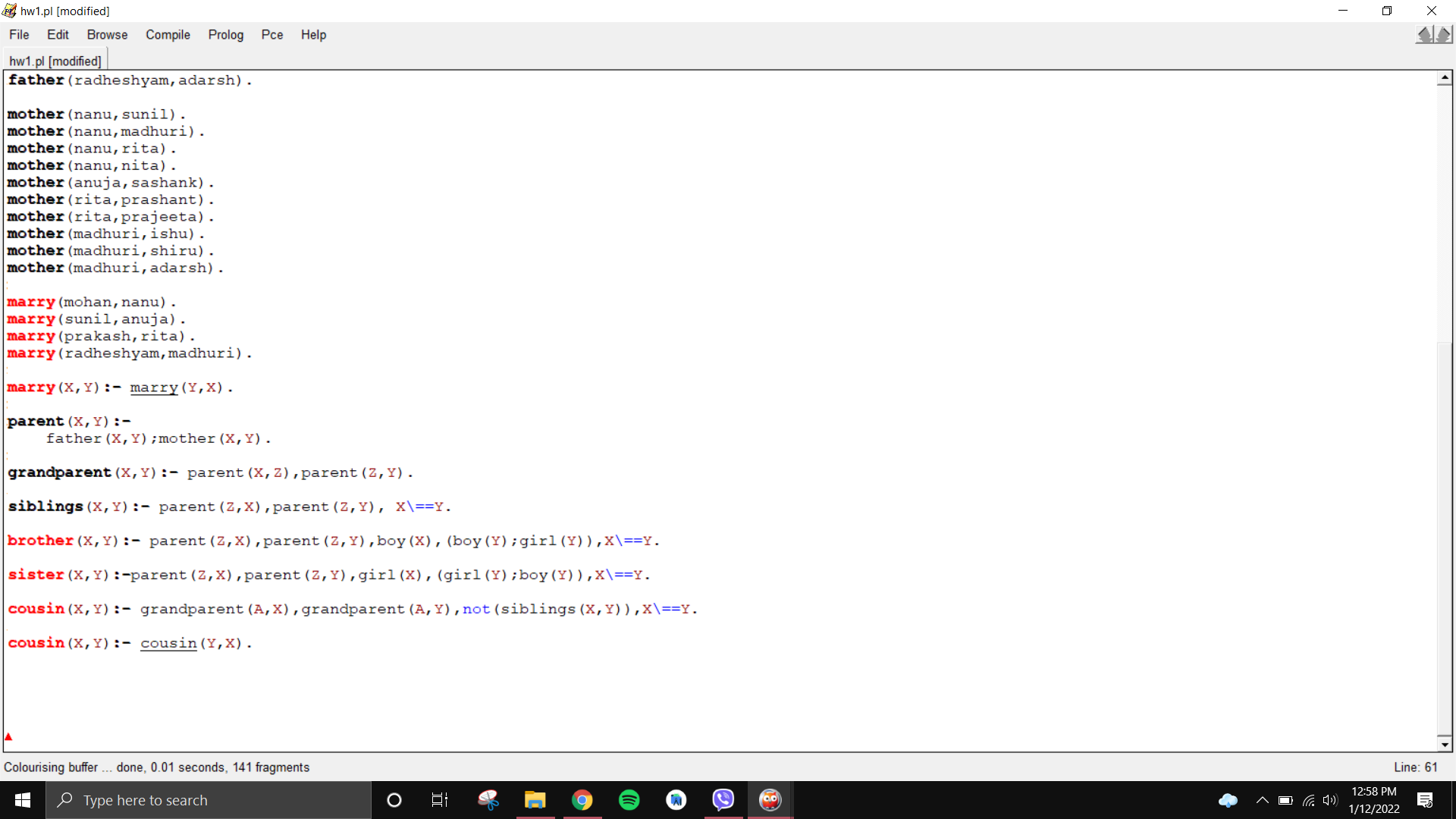
Output: True

**Family tree using Prolog:**

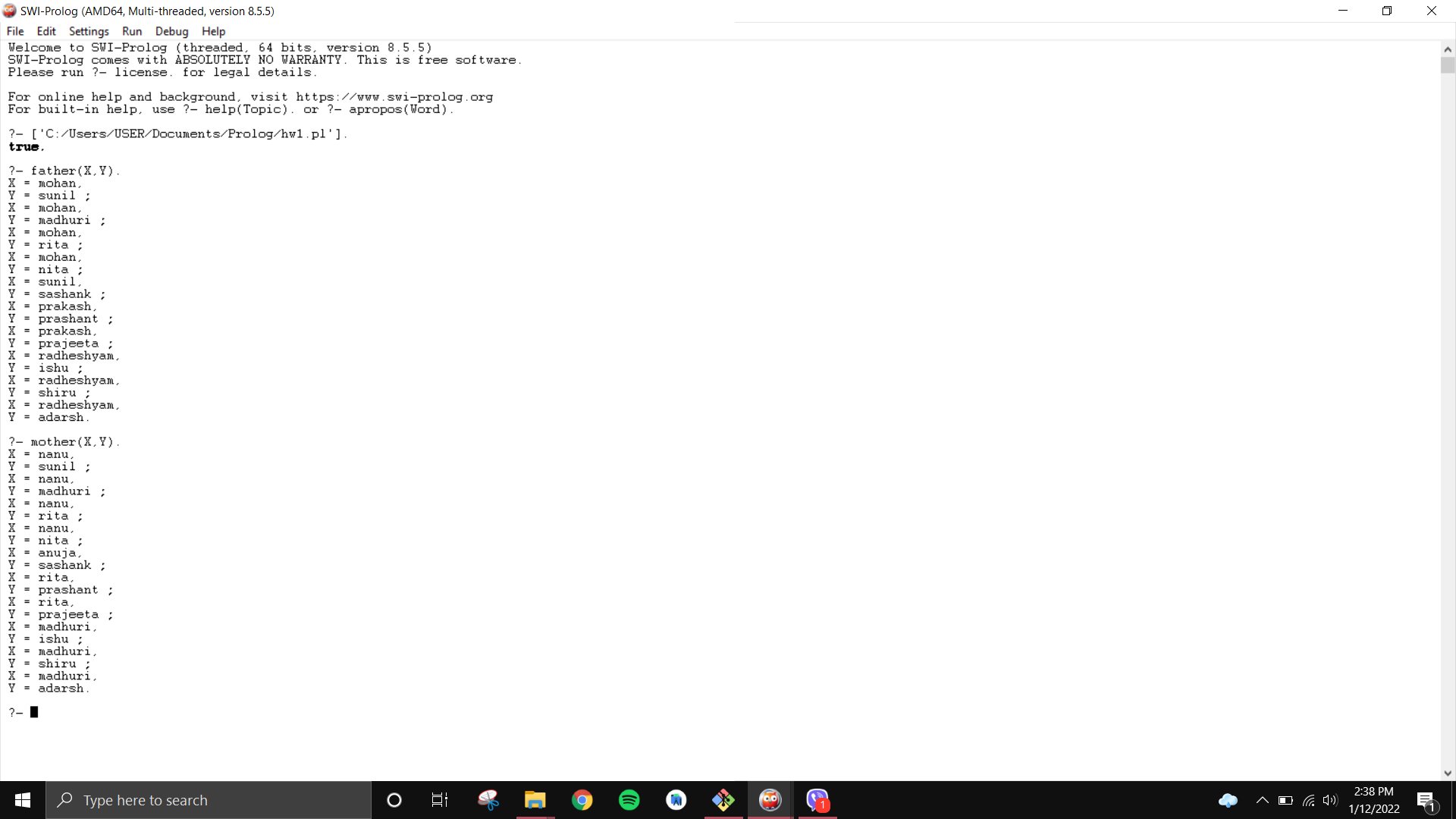
Any facts and relatoions can be listed out as output regarding the family. The relations of family members is written as facts then further relations can be obtained as output.

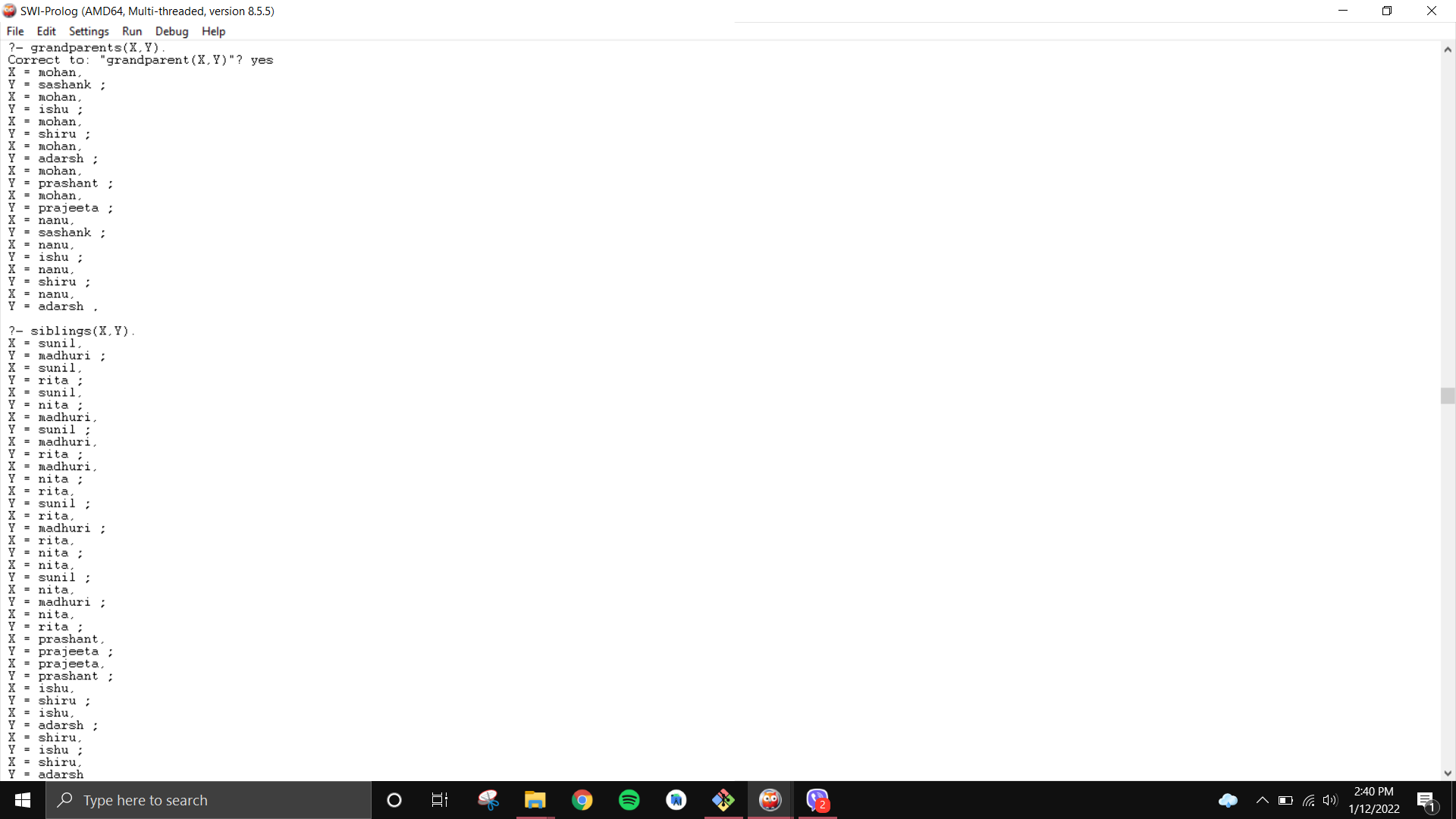
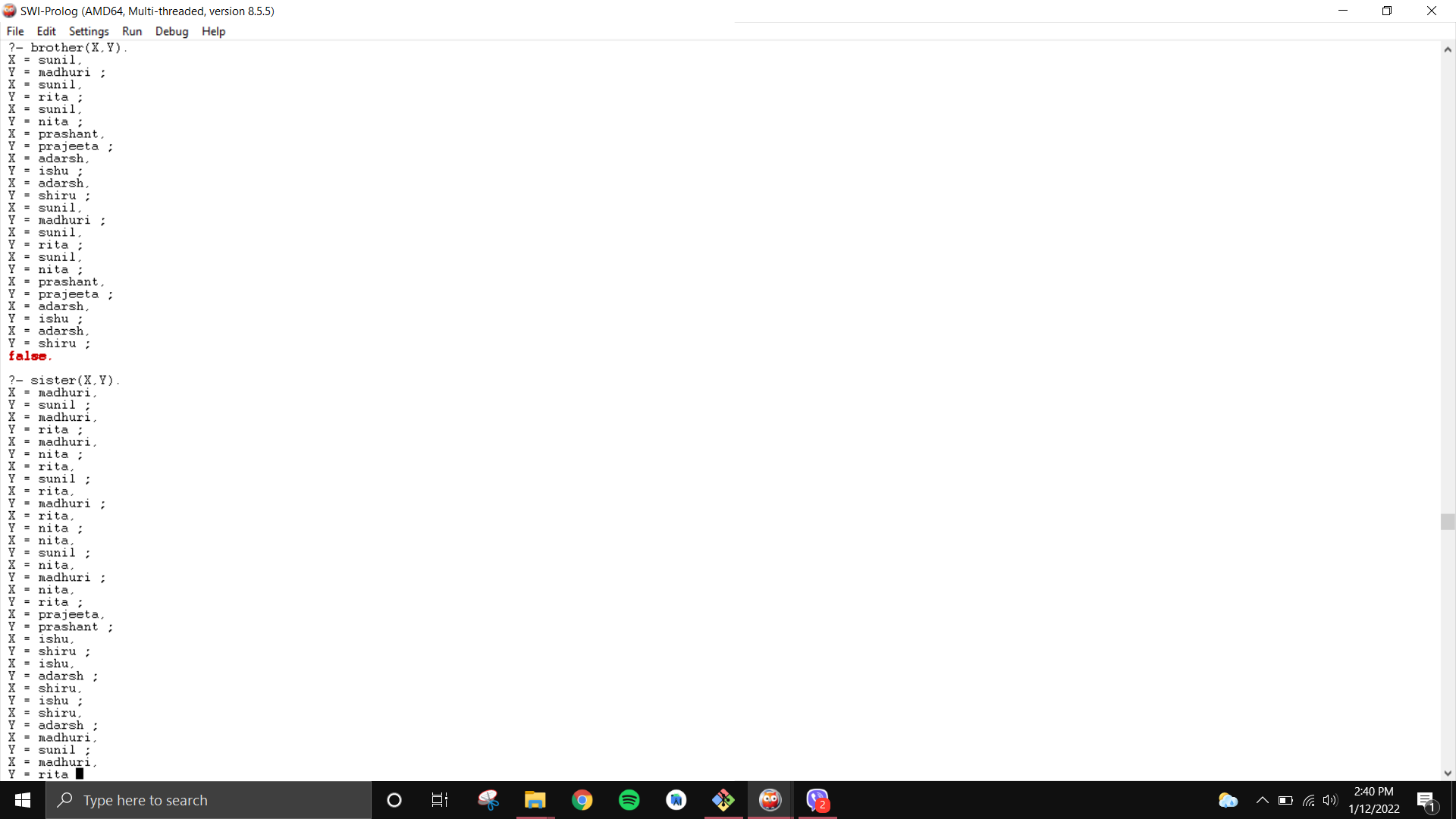
**CODES:**

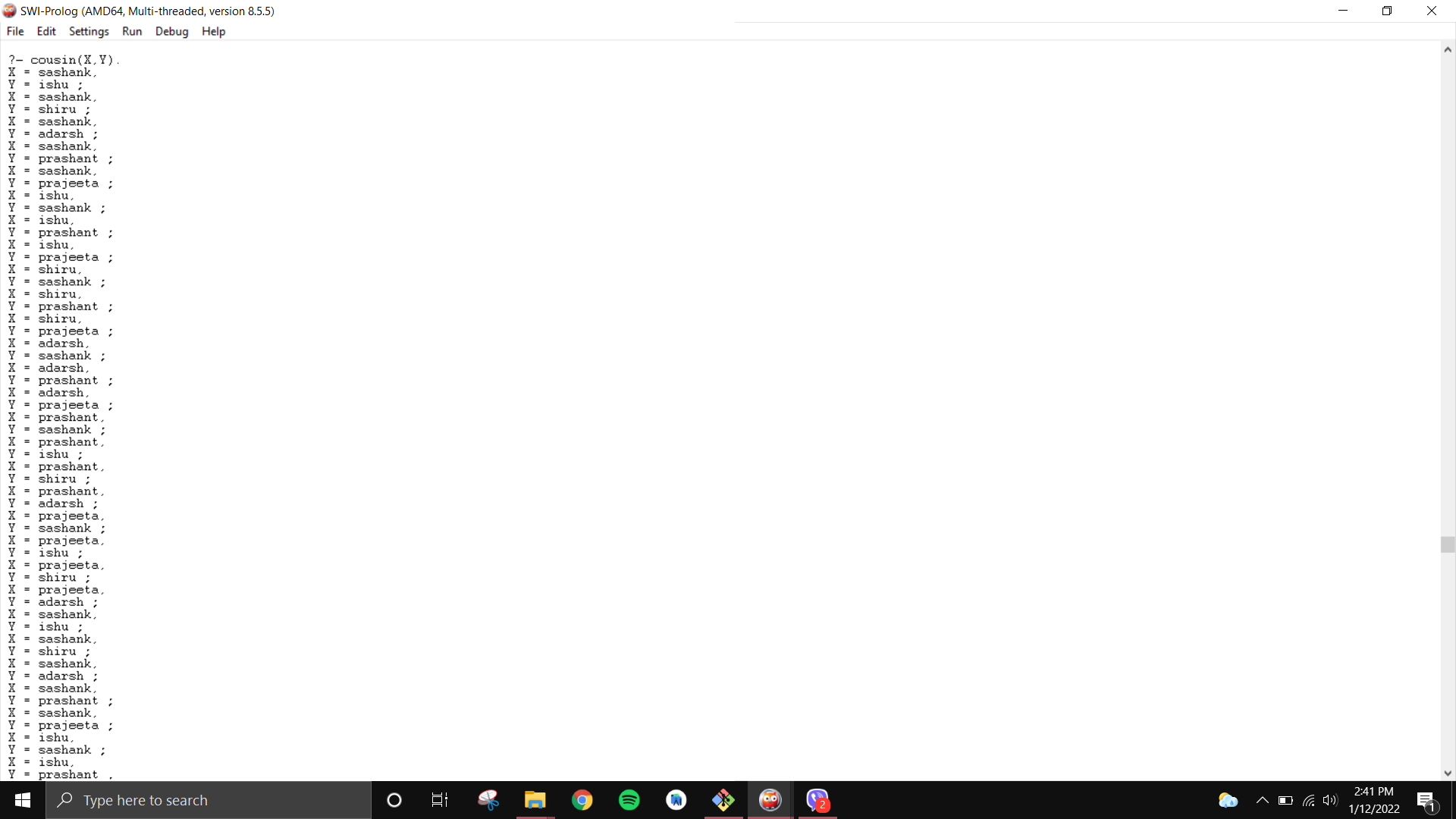


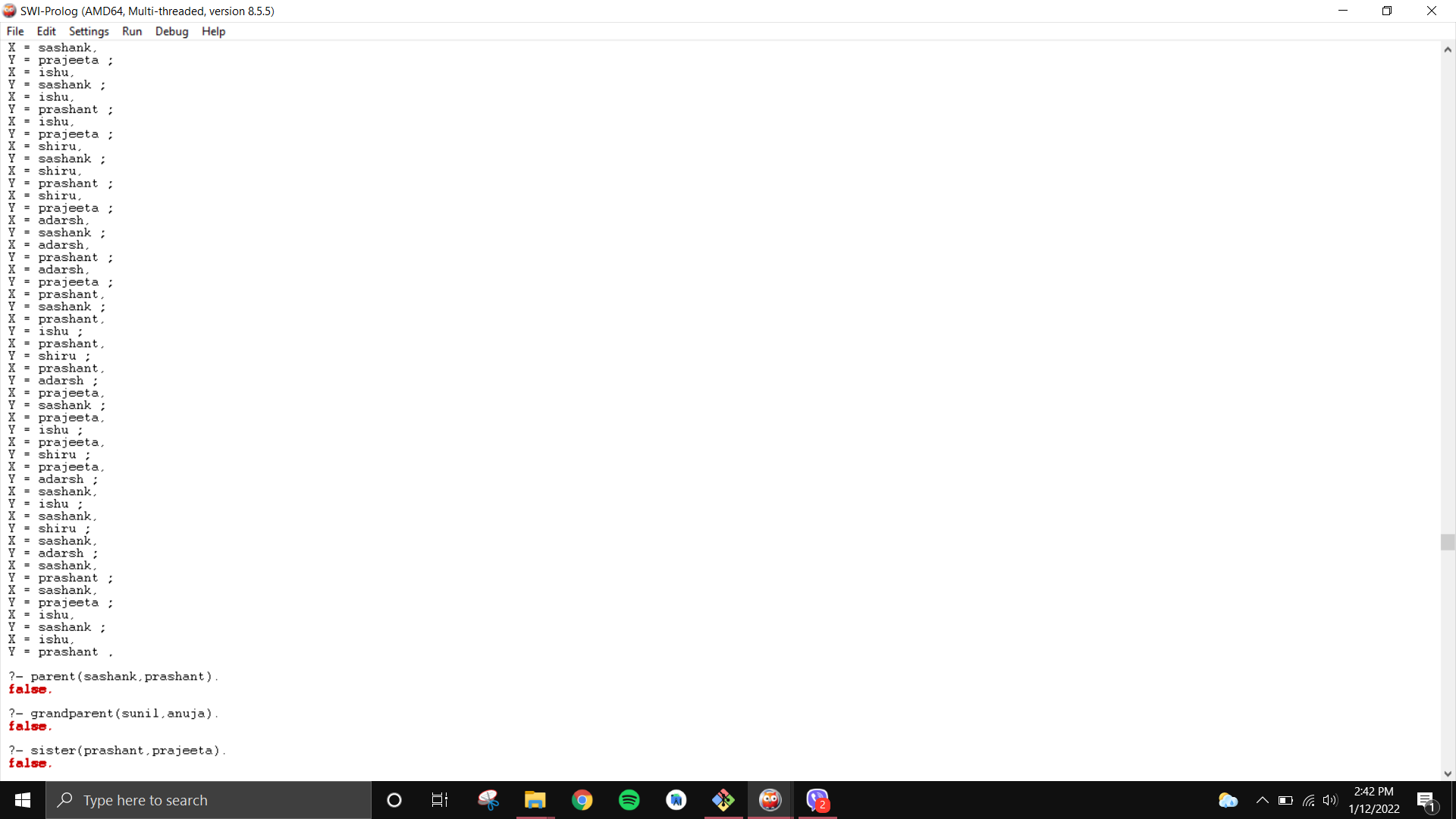


**OUTPUTS:**

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**DISCUSSION**:

In this lab, we learned how to use PROLOG and how to create predicates using PROLOG, and compile the written program. We also checked the truth value for various relations.

**CONCLUSION**:

Hence, in this lab, we learned about creating propositional logic in PROLOG.