DECLARATIVE PROGRAMMING – 2020
HOMEWORK - II

Write a Prolog program that defines family relations in compliance with the following restrictions:

1. The program shall model a fragment of your own family. However, if required, you are allowed to make additions to or deletions from your family members or relations. (30 points)

2. The program shall consist of only and only the procedures described below: (30 points)

HEAD OF PROCEDURE:	EXPLANATION:
father(X, Y)	(*X* is *Y*'s father)
mother(X, Y)	(*X* is *Y*'s mother)
parent(X, Y)	(*X* is *Y*'s parent)
brother(X, Y)	(*X* is *Y*'s brother)
sister(X, Y)	(*X* is *Y*'s sister)
uncle(X, Y)	(*X* is *Y*'s uncle)
grand_uncle(X, Y)	(*X* is *Y*'s grand uncle)
male(X)	(*X* is male)
female(X)	(*X* is female)

PS: Take one's uncle to be a brother of his/her father or mother and one's granduncle to be an uncle of his father or mother.

3. When the grandnephews or grandnieces of one of your granduncles are queried only and only ten (10) responses shall be generated and the fifth one shall be your name. To give an example, if the family were Gülfide's and *ahmet* were her granduncles, then, she could have question-answer pairs like the following: (20 points)

```
?- grand_uncle(ahmet, X).
X = ishak ;
X = ismail ;
X = melike ;
X = ali ;
X = gülfide ;
X = oya ;
X = suna ;
X = can ;
X = okan ;
X = orhan ;
false.
```

PS: Needless to say, the names above shall each be replaced by the proper name of a person in your (possibly modified) family with one of the fifth one being your own name.

4. A sample query (like the one above) shall be submitted along with the source code of the program. (10 points)

5. The program shall be commented to a sufficient extent. (10 points)