



KENYATTA UNIVERSITY
DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY
SIT 211: LOGIC PROGRAMMING
ASSIGNMENT II

Submission Instructions:

Deadline: 05th February, 2020 11h00.

Submission Type: Hand-written Solution and a Prolog Implementation for both questions.

1. Given the following knowledge base:

mother(ann,henry).	father(francis,louise).
mother(ann,mary).	father(john,mark).
mother(jane,mark).	father(gavin,lucy).
mother(jane,francis).	father(john,francis).
mother(annette,jonathan).	father(martin,david).
mother(mary,bill).	father(martin,janet).
mother(janice,louise).	parent(victoria,george).
mother(lucy,janet).	parent(victoria,edward).
mother(louise,caroline).	parent(elizabeth,charles).
mother(louise,martin).	parent(elizabeth,andrew).
father(henry,jonathan).	parent(X,Y):-mother(X,Y).
father(john,mary).	parent(A,B):- father(A,B).
father(francis,william).	

Implement the above statements in Prolog and carry out the following:

- i)** Write and test a clause or clauses that define the predicate ancestor/2.
- ii)** Write and test a clause or clauses that define the predicate husband/2.
- iii)** Write and test a clause or clauses that define the predicate sister/2.
- iv)** Write and test a clause or clauses that define the predicate brother/2.

2. Type the following program into a file

```
/* Dating Agency Database */
```

```
person(bill,male).
```

```
person(george,male).
```

```
person(alfred,male).
```

```
person(carol,female).
```

```
person(margaret,female).
```

```
person(jane,female).
```

Extend the program with a rule that defines a predicate **couple** with two arguments, the first being the name of a man and the second the name of a woman. Load your revised program into Prolog and test it. Clearly show the queries used in the testing process.