University of Auckland, Department of Computer Science

07.363 — Assignment 1 — The Whanau

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1 Introduction

John Foster (in *He Whakamaarama – A New Course in Maaori*) writes:

> Relationship is very important to the Maaori. Social seniority is claimed by those able to trace their whakapapa or genealogy in the most direct way to illustrious ancestors. Rights to shares in land and entitlement to speak on the marae may also depend on relationship. Because of this, there are special words to indicate elder or younger relations, or senior or younger branches of a family.

This table summarizes the Maaori terms of address:

Maaori	English
au	I
tipuna, tupuna	grandfather, grandmother, grandparent, ancestor
tiipuna	grandparents
matua taane	father
maatua	parents
paapaa	father
whaea, maamaa	mother
whaea kee	aunt
kuia	grandmother, old lady
tuakana	older brother of a man, older sister of a woman
teina	younger brother of a man, younger sister of a woman
tungaane	woman's brother (older or younger)
tuahine	man's sister (older or younger)
kaumaatua	elder (male)
mokopuna	grandchild (male or female)
iraamutu	niece, nephew
taane	husband, man
hunaonga	daughter-in-law, son-in-law
tamaahine	daughter
tama	son
tamaiti	child (male or female)
tamariki	children
wahine	wife, woman

Maaori	English
maataamua	oldest child
pootiki	youngest child
koroheke, koro, koroua	old man
whaiapo	boyfriend, girlfriend[a]
kootiro	girl
tamaiti taane	boy
whanaunga	relatives

[a] Literally: "What you follow at night"

2 Your Task

A program to translate between English and Maaori must take into account the differences in terms of address between the two languages. Your task will therefore be to write a Prolog predicate `calls(X,Y,Z)` which, given a database of family relationships, returns the *all* the words that `X` can use to address or talk about `Y`.

3 An Example

Given this whanau

Name	Sex	Father	Mother	Spouse	Born
Hoone	male	unknown	unknown	Rita	1910
Rita	female	unknown	unknown	Hone	1915
Ranginui	male	unknown	unknown	Reremoana	1915
Reremoana	female	unknown	unknown	Ranginui	1916
Rewi	male	Hoone	Rita	Rahia	1935
Rahia	female	Ranginui	Reremoana	Rewi	1940
Hata	male	Rewi	Rahia	none	1957
Kiri	female	Rewi	Rahia	none	1959
Hiniera	female	Rewi	Rahia	Pita	1960
Aanaru	male	Rewi	Rahia	none	1962
Rapeta	male	Rewi	Rahia	none	1964
Mere	female	Rewi	Rahia	none	1965
Pita	male	unknown	unknown	Hiniera	1960
Moeraa	female	Pita	Hiniera	none	1986
Huia	female	Pita	Hiniera	none	1987
Irihaapeti	female	Pita	Hiniera	none	1988

we might get the following interaction with the Prolog system:

```
?- calls(aanaru, hata, Z).
  Z = tuakana ;
  Z = maataamua ;
  no

?- calls(aanaru, rapeta, Z).
  Z = teina ;
  no
```

4 Administrivia

This assignment is worth 100 marks. It should be handed in by Monday, July 4, 24:00. Use MacJanet to mail your code (consisting of the `calls` predicate and an example database) to **363**. The assignments will be checked electronically to detect duplicates. Anyone caught cheating will receive an automatic **D-** on this part of the paper.