

CSX3004 Programming Languages

Week 12 Worksheet

Instruction:

- Name your file relations_*ID*.pl where ID is your student ID
- Upload it on MS Teams when done.

Given the following facts, define predicates/rules as requested.

```
male(kim) .
male(kent) .
male(herbert) .
female(holly) .
female(margaret) .
female(esther) .
female(jean) .

parent(kim,holly) .
parent(margaret,kim) .
parent(margaret,kent) .
parent(esther,margaret) .
parent(herbert,margaret) .
parent(herbert,jean) .
```

1. Define a **mother** predicate so **mother**(*X*, *Y*) means that *X* is a mother of *Y*.
2. Define a **father** predicate so **father**(*X*, *Y*) means that *X* is a father of *Y*.
3. Define a **sister** predicate so **sister**(*X*, *Y*) means that *X* is a sister of *Y*. Note that a person cannot be her own sister.
4. Define the rule for **brother**(*X*, *Y*). Note that *X* and *Y* are brothers if they are male and have the same parents and a person cannot be her own sister.
5. Define the rule for **sibling**(*X*, *Y*). Note. that *X* and *Y* are siblings if they have the same parents and a person cannot be his/her own sibling.
6. Define the rule for **cousin**(*X*, *Y*). *X* and *Y* are cousins if their parents are siblings.
7. Define the rule for **niece**(*X*, *Y*). *X* is the niece of *Y*.
8. Define the rule for **nephew**(*X*, *Y*). *X* is the nephew of *Y*.