# COMP90048: Workshop 6

Eleanor McMurtry, University of Melbourne

# Logic Programming

#### Intro

 Logic programming allows us to solve problems by specifying what must be true of the answer.

• It is related to declarative programming: strong type systems use the same form of logic.

• Atom: similar to a value, written in lowercase: eleanor

- Atom: similar to a value, written in lowercase: eleanor
- Predicate: a statement that is true or false.

```
?- staffMember(eleanor).
true.
```

- Atom: similar to a value, written in lowercase: eleanor
- Predicate: a statement that is true or false.
- Clause: conjunction of predicates

```
?-staffMember(eleanor), gradStudent(eleanor).
true.
```

- Atom: similar to a value, written in lowercase: eleanor
- Predicate: a statement that is true or false.
- Clause: conjunction of predicates

```
?-staffMember(eleanor) gradStudent(eleanor).

true.
```

Variable: a term of unknown value, starting with a capital letter

- Variable: a term of unknown value, starting with a capital letter
- Prolog uses resolution to try to assign values to variables.

- Variable: a term of unknown value, starting with a capital letter
- Prolog uses resolution to try to assign values to variables.

```
?- staffMember(Person), gradStudent(Person).
Person = eleanor;
Person = mak.
```

- Variable: a term of unknown value, starting with a capital letter
- Prolog uses resolution to try to assign values to variables.

```
?- staffMember(Person), gradStudent(Person).

Person = eleanor; "and"

Person = mak.
```

```
staffMember(eleanor).
staffMember(mak).
staffMember(peter).

Person = eleanor
```

```
staffMember(eleanor).
staffMember(mak).
staffMember(peter).

Person = eleanor

gradStudent(Person)

true
```

```
staffMember(eleanor).
staffMember(mak).
staffMember(peter).

Person = eleanor

gradStudent(Person)
```

```
staffMember(eleanor).
staffMember(mak).
staffMember(peter).

Person = eleanor Person = mak Person = peter

gradStudent(Person) gradStudent(Person)

true true
```

# Continue with Grok Workshop 6 (Week 7).