Lina: An EDSL for Threat Analysis

```
se_attack :: APAttackTree Double String
se_attack = start_PAT $
  and_node "social engineering attack"
      (base_wa 0.6 "pose as mechanic")
      (base_wa 0.1 "install malware")
```

```
bi_attack :: APAttackTree Double String
bi_attack = start_PAT $
  or_node "break in"
      (base_wa 0.8 "break window")
      (base_wa 0.5 "disable door alarm/locks")
```

```
cv_attack :: APAttackTree Double String
cv_attack = start_PAT $
  seq_node "compromise vehicle"
    (insert bi_attack)
    (base_wa 0.1 "install malware")
```

```
es_attack :: APAttackTree Double String
es_attack = start_PAT $
  seq_node "external sensor attack"
      (base_wa 0.2 "modify street signs to cause
                        wreck")
      (insert se_attack)
```

```
on_attack :: APAttackTree Double String
on_attack = start_PAT $
  seq_node "overnight attack"
      (base_wa 0.05 "Find address where car
                      is stored")
      (insert cv_attack)
```

```
vehicle_attack'' :: APAttackTree Double String
vehicle_attack'' = start_PAT $
  or_node "Autonomous Vehicle Attack"
    (insert es_attack)
    (insert on_attack)
```

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```
-- Internal Attack Tree
data IAT where
    Base :: ID -> IAT
    OR   :: ID -> IAT -> IAT -> IAT
    AND  :: ID -> IAT -> IAT -> IAT
    SEQ  :: ID -> IAT -> IAT -> IAT
```