# Semantic Templates

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Semantic Template is a semantic structure represented by a DAG as any other semantic structure. Semantic templates are context-dependent – in other words we have different set of active semantic templates in each context. Semantic templates are created through semantic inference capturing previous knowledge of the inference input and output. Semantic templates are tool for generalization based on previously made decisions or on pre-existing knowledge.

The *Semantic Template* is a special kind of semantic structure built by *incomplete V-particles* and *incomplete A-particles*.

Incomplete V-particle

Let us look into an example V-particle which we will name V_1:

```
    V₁


   P₁ P₂  P₃
    \ | /  ..
Pₖ --- o --- Pᵢ
  .. / | \ ..
   Pⱼ₊₁ Pⱼ  Pⱼ₋₁
```
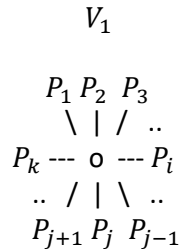
Every V-particle contains a rooted property tree where each property which is not a leaf is connected via property association link to another property (its child). Each property P_j is represented by its property signature $\mathbf{p}_j$ given with
$\mathbf{p}_j = [\mathbf{r}_1, \mathbf{0}, \mathbf{r}_2, \mathbf{0}, \dots, \mathbf{0}, \mathbf{r}_k]^T$ where $\mathbf{r}_i, i = 1..k$ are the proper regions in the property signature.
proper region is such area of the property signature which is created in order to serve particular binding force between this property and another property. No further expansion of this region can increase the binding force between the two properties. The total binding force between two properties is given as the sum of all regional binding forces minus the sum of all regional repulsion forces.