

Using a simplistic example of an automobile, we can view it in two ways: a graph and a tree. The logical graph:

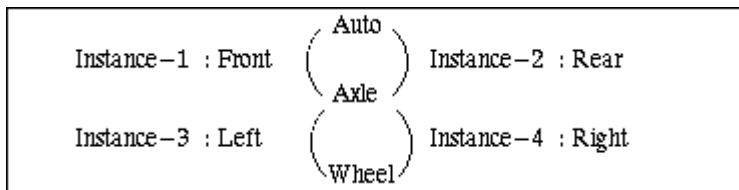


Figure 1-1 Logical Graph

high-lights the "Instances". From it, we get the following occurrence trees:

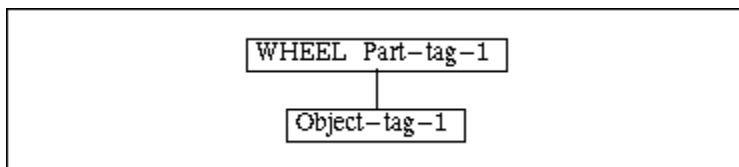


Figure 1-2 WHEEL.PRT

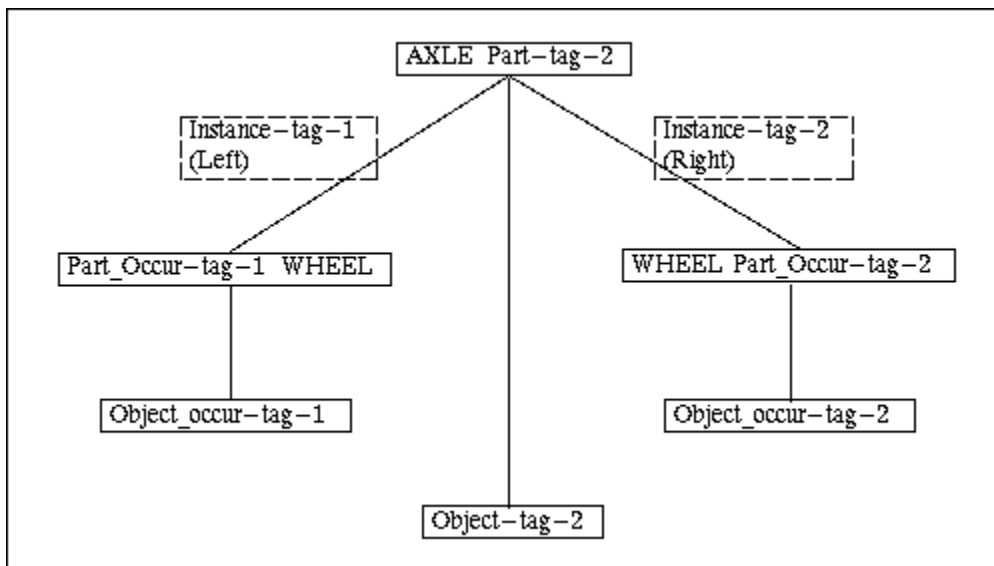


Figure 1-3 AXLE.PRT

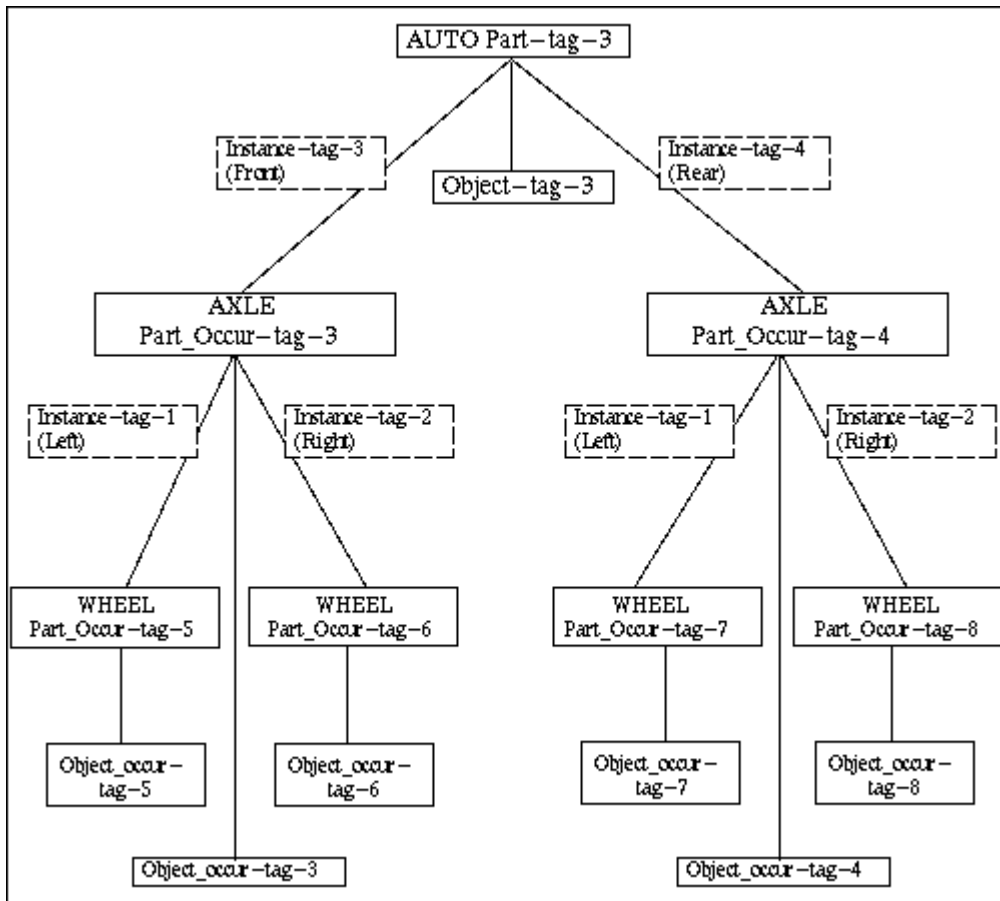


Figure 1-4 AUTO.PRT

which emphasizes the "Part Occurrences".

Explanation:

The part WHEEL is loaded and given the Part tag Part-tag-1. It consists of a single object Object-tag-1.

The part AXLE is loaded and given the Part tag Part-tag-2. It consists of an object Object-tag-2 for the axle and two instances of the WHEEL piece part. Instance-tag-1 represents the Left wheel and Instance-tag-2 represents the Right wheel. Two Part occurrences are created for these and given the tags Part_Occur-tag-1 and Part_Occur-tag-2. Similarly, two Object Occurrences are created for the wheel object, one for each Part Occurrence, and given the tags Object_occur-tag-1 and Object_occur-tag-2.

The part AUTO is loaded as the Displayed Part and given the Part tag Part-tag-3. It consists of an object Object-tag-3 and two instances of the AXLE assembly part. Instance-tag-3 represents the Front axle, and Instance-tag-4 represents the Rear axle.

Since there are two instances of the AXLE part in the AUTO assembly part, two Part Occurrences are created for them and given the tags Part_Occur-tag-3 and Part_Occur-tag-4. Similarly, two Object Occurrences are created for the axle object, 1 for each Part Occurrence, and given the tags Object_occur-tag-3 and Object_occur-tag-4.

Since there are two instances of the wheel part in the AXLE assembly part, two Part Occurrences are created for them for every occurrence of AXLE in the session. Thus, 4 more Part Occurrences are

created for WHEEL. There is a Part Occurrence for the Left wheel Instance (Instance-tag-1) of the Front axle Instance (Instance-tag-3) called Part_Occur-tag-5 and a Part Occurrence for the Right wheel Instance (Instance-tag-2) of the Front axle Instance (Instance-tag-3) called Part_Occur-tag-6. There is also a Part Occurrence for the Left wheel Instance (Instance-tag-1) of the Rear axle Instance (Instance-tag-4) called Part_Occur-tag-7 and a Part Occurrence for the Right wheel Instance (Instance-tag-2) of the Rear axle Instance (Instance-tag-4) called Part_Occur-tag-8. Similarly, 4 more Object Occurrences are created for the wheel object, one for each Part Occurrence of WHEEL. They are named Object_occur-tag-5, Object_occur-tag-6, Object_occur-tag-7, and Object_occur-tag-8.

The following table indicates the routines to access given a particular tag when you want to find a tag of a different type. For example, if you have a "PART tag" and need the "PART name" you would call UF_PART_ask_part_name.

TO FIND	GIVEN	CALL
Part Name	Part tag	UF_PART_ask_part_name()
Part Tag	Part Name	UF_PART_ask_part_tag
Part Tag	Part Occurrence Tag	UF_ASSEM_ask_prototype_of_occ() UF_ASSEM_ask_parent_of_instance() or
Part Tag	Instance tag	UF_ASSEM_ask_child_of_instance() UF_ASSEM_ask_part_occurrence() or
Part Tag	Entity Occurrence Tag	UF_ASSEM_ask_prototype_of_occ()
Part Occurrence Tag	Part tag	UF_ASSEM_ask_occs_of_part() UF_ASSEM_ask_part_occ_children() or
Part Occurrence Tag	Part Occurrence Tag	UF_ASSEM_where_is_part_used() UF_ASSEM_ask_part_occs_of_inst() or
Part Occurrence Tag	Instance tag	UF_ASSEM_ask_part_occ_of_inst()
Part Occurrence Tag	Entity Occurrence Tag	UF_ASSEM_ask_part_occurrence()
Instance Tag	Part tag	UF_ASSEM_cycle_inst_of_part()
Instance Tag	Part occurrence tag	UF_ASSEM_ask_inst_of_part_occ()
Instance Tag	Instance name	UF_ASSEM_ask_instance_of_name() UF_ASSEM_ask_part_occurrence() or
Instance tag	Entity Occurrence tag	UF_ASSEM_ask_inst_of_part_occ()
Entity Tag	Entity occurrence tag	UF_ASSEM_ask_prototype_of_occ()
Entity Tag	Entity handle	UF_TAG_ask_tag_of_handle()
Entity occurrence tag	Part occurrence tag	UF_ASSEM_cycle_ents_in_part_occ() UF_ASSEM_find_occurrence() or
Entity Occurrence tag	Entity tag	UF_ASSEM_ask_occs_of_entity()
Entity Occurrence tag	Entity handle	UF_TAG_ask_tag_of_handle()
Entity Handle	Entity tag	UF_TAG_ask_handle_of_tag()

