

Module: UVM-1

Section: UVM Concepts Task: UVM Factory

UVM Factory

Task

➤ Question 1:

a. Overriding animal_h2:

```
UVM_INFO @ 0: reporter [RNTST] Running test test...
UVM_INFO /usr/synopsys/vcs-L-2016.06/etc/uvmm-1.2/base/uvmm_factory.svh(1645) @ 0: reporter [UVM/FACTORY/PRINT]
#### Factory Configuration (*)

Instance Overrides:

Requested Type  Override Path      Override Type
-----
animal         uvm_test_top.animal_h2  lion

No type overrides are registered with this factory

All types registered with the factory: 55 total
Type Name
-----
animal
lion
snps_uvm_reg_bank_group
snps_uvm_reg_map
test
(*) Types with no associated type name will be printed as <unknown>

####

UVM_INFO uvm_factory.sv(14) @ 0: uvm_test_top.animal_h1 [animal] I am an animal
UVM_INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h2 [lion] I am a Lion
UVM_INFO /usr/synopsys/vcs-L-2016.06/etc/uvmm-1.2/base/uvmm_report_server.svh(894) @ 0: reporter [UVM/REPORT/SERVER]
--- UVM Report Summary ---
```

b. Overriding animal_h1:

```
No type overrides are registered with this factory

All types registered with the factory: 55 total
Type Name
-----
animal
lion
snps_uvm_reg_bank_group
snps_uvm_reg_map
test
(*) Types with no associated type name will be printed as <unknown>

####

UVM_INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h1 [lion] I am a Lion
UVM_INFO uvm_factory.sv(14) @ 0: uvm_test_top.animal_h2 [animal] I am an animal
UVM_INFO /usr/synopsys/vcs-L-2016.06/etc/uvmm-1.2/base/uvmm_report_server.svh(894) @ 0: reporter [UVM/REPORT/SERVER]
--- UVM Report Summary ---

** Report counts by severity
UVM_INFO : 5
UVM_WARNING : 0
UVM_ERROR : 0
UVM_FATAL : 0
** Report counts by id
[RNTST] 1
[UVM/FACTORY/PRINT] 1
[UVM/RELNOTES] 1
[animal] 1
```

c. Overriding both using set_type_override_by_name:

```

No instance overrides are registered with this factory

Type Overrides:

Requested Type  Override Type
-----
animal         lion

All types registered with the factory: 55 total
Type Name
-----
animal
lion
snps_uvm_reg_bank_group
snps_uvm_reg_map
test
(*) Types with no associated type name will be printed as <unknown>

####

UVM INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h1 [lion] I am a Lion
UVM INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h2 [lion] I am a Lion
UVM INFO /usr/synopsys/vcs-L-2016.06/etc/uvm-1.2/base/uvm_report_server.svh(894) @ 0: reporter [UVM/REPORT/SERVER]
--- UVM Report Summary ---

** Report counts by severity
UVM INFO :      5
UVM WARNING :    0
UVM ERROR :     0
UVM FATAL :     0

```

d. Overriding both using set_type_override_by_type:

```

Requested Type  Override Type
-----
animal         lion

All types registered with the factory: 55 total
Type Name
-----
animal
lion
snps_uvm_reg_bank_group
snps_uvm_reg_map
test
(*) Types with no associated type name will be printed as <unknown>

####

UVM INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h1 [lion] I am a Lion
UVM INFO uvm_factory.sv(31) @ 0: uvm_test_top.animal_h2 [lion] I am a Lion
UVM INFO /usr/synopsys/vcs-L-2016.06/etc/uvm-1.2/base/uvm_report_server.svh(894) @ 0: reporter [UVM/REPORT/SERVER]
--- UVM Report Summary ---

** Report counts by severity
UVM INFO :      5
UVM WARNING :    0
UVM ERROR :     0
UVM FATAL :     0
** Report counts by id
[RNTST]      1
[UVM/FACTORY/PRINT] 1
[UVM/REMARKS] 1

```

- **Question 2: What is the difference between type override and instance override? Explain in your own words when we should use which method.**

In UVM, the main difference between type override and instance override lies in their scope:

- **Type Override:** A global replacement of all instances of a class throughout the testbench with a new class. Use this when you want to change every occurrence of a class (e.g., replacing all drivers).

- **Instance Override:** A local replacement for a specific instance of a class, without affecting other instances. Use this when you need to modify only a particular component (e.g., a specific driver for one interface).

In short, use type override for broad changes across the entire environment and instance override for more targeted, specific modifications.