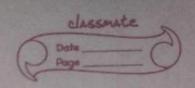
## **DAY 84 - 100 DAYS VERIFICATION CHALLENGE**

**Topic: UVM Sequences & Sequencers** 

#### **DAY 84 CHALLENGE:**

- Explain the below methods in uvm sequence item class:
  - i. get sequence id
  - ii. set sequencer
  - iii. get sequence
- 2. Write a simple uvm sequence template and explain each line.
- 3. What are pre body and post body used in sequence?
- 4. How does a sequence start?
- 5. What are the types of sequencer? Explain each?
- 6. What is p sequencer, and where is it used?
- 7. How do sequence, driver, and sequencer communicate?
- 8. What is the virtual sequence? How is it used?
- 9. Explain the virtual sequencer and its use.
- 10. Is it necessary to have virtual sequencer for virtual sequence?
- 11. What is the difference between sequence & sequencer?

soin a what is pre-body and past-body used in sequences · All sequence cocle is implemented in the task bodyci: · Base class includes prebady and post-body. · sequences can be combined using available sequences · Its an object and has no our prose. · uum pre body and uum post-body macros are used in oum to define the code that should be executed before & often the body of a task or faction, respectively. . The main advantage of using our pre-body & post-body marsos is that they poourde a flexible and efficient way to odel functionality to tosk and function in unm Testberches . while also making it easien to maintain and onderstand the code. Soin & How closs a Sequence stant? · Sequence are started on a Sequencer using the built-in Sequence (stant() method or by using the uum de macros. · Every Sequence has a handle to the sequences that is sunning that soquence. Trant handle is called the m Sequences handle. Soln (5) what are the types of sequences ? Explain each? Omsequences @ Psequences · m sequences: A generic Sequences handle available to allowing sequences by default. This handler is of type our squences bases · pesequences is a user defined sequences or a type specific . This handle is not available by default to a wood sequence . Its organished when we register a sequencer to a sequencer



solo what is p-sequencer and where is it used? · p\_sequences stands for physical sequences ". · A physical Sequences is a bum Component that is responsible for managing to flow of transactions between a DUT & the testberch. · The physical Degumen is typically instantiated as part of the interface Btw the DUI and the testbench and it is responsible for generating the appropriate signals on the interface to Communicate with the DUI. · The p sequence communicate with the driver to send transaction to the DUT & with the monitor to receive transaction from RO DUT. · The p-sequences class is a built-in uum class that extends the num sequences class and provides additional functionally for managing physical intenfaces. · it includes methods for setting & getting the physical interface as well as for managing the ordering and prioritization of transactions on the interface. Sind How do sequences, daiver and sequences Communicate.2 · The Sequences and doiver communicate with each other using a hidisectional Tim intenface to transfer REG & RSP Sequence items . · The driver has our sequitor pull poot which is connected with own\_ soq\_item\_pull export of the associated Sequences. · Sequences send the Stimulus to driver via Sequences using handshaking methods send request and wall-

son explain to violat sequences and its used? · A violual Sequences is a sequences that is used to control and manage the execution of multiple îtem and Sequence Sequencer 3. · It is typically used to coordinate the generation of stimulus for a complex system that involves multiple intenface and protocols. · A violual Sequences & responsible for scheduling and Cooscillating the execution of multiple item and Sequence Sequencers based on a set of oules or constraints provided by the testbench. Soin (1) is it necessary to have violual sequences for violual Sequence ? · If you have only a single doiving agent, you do not need a Viotual Sequences. if you have multiple doiving agents but no stimulus coordination 18 required. 40 do not nood a violage sequences. Sol D what is the difference Btw Sequence & Sequences 2 · A sequence îtem is a transaction that is sent from a geguence to doquer !! . The sequences handles arbitration Both the sequencel doiver part, especially then a sequences is multiple Sequences are sending concurrent sequence itens to the daiver. the Stimulus to das

# **DAY 86 - 100 DAYS VERIFICATION CHALLENGE**

Topic: UVM Agent, config\_db

## **DAY 86 CHALLENGE:**

- 1. Write a uvm agent template and explain each line.
- 2. What are Active and Passive modes in an agent?
- 3. What is get\_is\_active() method in uvm\_agent? Why do we need it?
- 4. What is uvm config db? Why do we need it?
- 5. What is uvm resource db?
- 6. Explain the difference between uvm config db & uvm resource db.
- 7. How set config \* works?
- 8. What is the difference between set config \* and uvm config db?
- 9. Can we use set config and get config in sequence?

#### DAY: 86

# Topic: Um agent . Config do

solo write a un agent template and explain each une.

- agent Act as intermodiates Blow the tostbench and the Dut.

Troy encompass drivens, monitors and sequences and help in

organizing and managing the vanitiration process.

class magent extends uumagent;

abiver dry;

monitor mon;

Sequencen Spr;

Coverage Cou;

' uum\_component\_utils ( m. ogent )

function now (string name, uvm. component parent);
Super. new(name, parent);

end function

clov = driven :: type id :: create ("dru", #is);

mon = monitor: type id:: create ("mon", this);

Sex = Sequences : type\_id :: (reale ("Sex", this);

cov = coverage :: type id :: create ("cov", this);

end function

function, void connect phase (um phase phase);

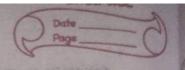
Super- connect phose (prose);

dav. seq item port . connect ( Sqx . Seq item export);

mon · ap-port · Connect (au · analysis\_export);

enclfunction

endclass



5010 what are Active and possible modes in an agent? · in our active made & passive modes have specific meaning related to the way a component responds to events & to ansaction in the Testbench environment. Active mode: in our active made refers to a mode of operation where a component initiales toansactions or events, such as sending request for daiving Signals. An active component typically has a task or function that actually generates stimulus. Such as abiver or Sequences. Or Active agents generate stimulus and drive to Dur. · An active agent shall consists of all three Component daquer, sequencer & monitor. postre mode: Possive agents Sample Out Signals but do not dolle them. · A passive agent consist of only the monitorier Store board Sol " @ what is get is active () method is wom agent? why do we hood it? . The gel-is active a function is used to find out the type of agent it, "veb" ) stoses :: bi sopt :: roules = ve · get is actue () Actums cum active if the agent is acting as an active agent & uvm passive if the agent acting as a possive agent. · The driver, Sequences instance are corrected if its an active agent and monitor instance can be created by default corespective of ogent type.

sol 18 what is cum-config do ? why do we need it? · com config db is a static class that provides a database for storing and retrieving configuration values. . This database con be accessed from anywhere in the venification envicoment & can be used to pass configuration information Both Components that are not alfaerly connected. · The vum Config dB provides two main function : sett) and get . The set() function is used to set a configuration value is the database and takes theree agruments: The first argument is the value to be assigned to that field and the third argument is the hierarchical path of the component the own the field. . The get () function is wed to retrive a Configuration value from the database & take two arguments: first argument is the name of the Configuration field. & the second angument is the hierarchical path of the component that owns the · one of main advantages of using unmantig ab is that it allows Configuration values to be passed Between Companin's that are not directly connected for example , a top-buel testhench component can set a Configuration value using uum configuration set () and this volue can be detailed by a lower-level Component that does not have a direct Connection to the top-lovel testbench. soln 6 what 18 uum resource-clb ? its a mechanism used in handware venification to store & retoive Configuration & other data in a standardized way. · wom resource all is that it allows allflerent components as module within your verification enviouement to easy shall & access data without having to establish direct connection or dependency

8tw thom.

Page D

Sol 10 Exploso the difference Blueen cum configures & cum resourcedo. · All the methods clectared in both them are static in nature so it should be declared with the scope resolution operator os tum configueto : set() and Uum rescurce of : set(). declaration of each one of them: Jum config - cl B:- Jum sessus co-dB; O static function void set ( num comp o static function void set ( input string Cotxt, string inst name, I value, input string name, I value, Stoling Aleld name, input cum object accessor = null) T volue) had toll of @ So uum configado is poi manily @ while uum resource ab should used in places to ocess the be used in places to ocess the resource or parameter whose resource in case of non-hierarchial hierarch is important. Context. 6 wm config de is used when o own resource do is used when you want to sell get resource you want to set get resource within our Component hierarchy except cum Component hierarchy. The number of cum antig ab to while the method for our resourced are comiled many 4 such as are more like get type get by hard get, set, exits and wait modified read by name, read by type, waste by namo, waste by type, Set ano mymous.

Solf How Set config. \* works?

when set config. method is called the data is stored wort string in a table. There is also a global Configurable table.

These function provides a standardirect way to set Configuration provides a standardirect way to set Configuration provides and configurable.

