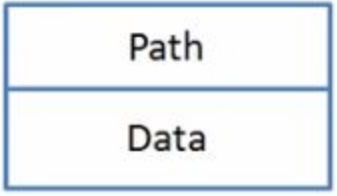
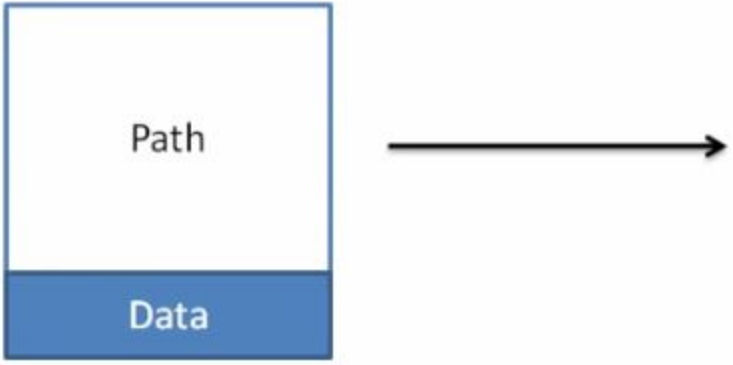
DSR-Disadvantage



As the network size grow length of path also increase.



As network size grows, route path also increased.
Data packet's header also increase.

AODV-Concept

Reactive routing
- Pure on-demand route acquisition system
- The routes are created when needed, so called "on-demand"

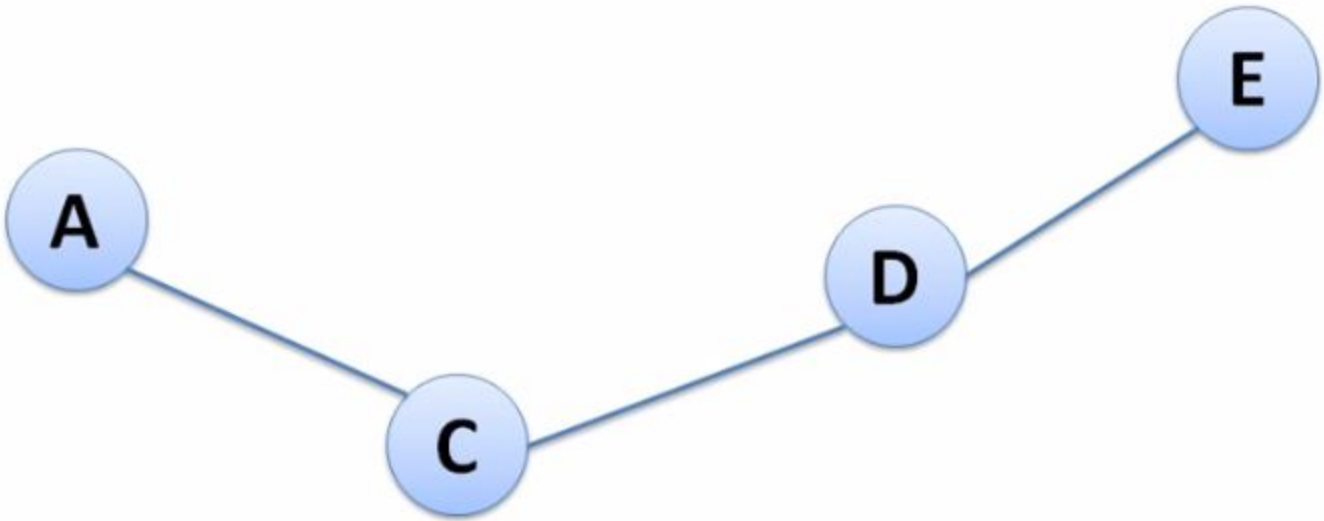
A broadcast route discovery mechanism
RREQ (Route Request packet) broadcasting to find a route
RREP (Route Reply packet) is used to set up forward path

Dynamic establishment of route table entries
Nodes lie on active paths only maintain routing information

Maintenance of timer-based states
A routing table entry is expired if not used recently

Destination sequence number
Prevention of routing loops
Avoidance of old and broken routes

AODV-Concept



Objective: A wants to send data to E.

Route Discovery

1. Every Node maintain two counters

- Sequence Number
- Broadcast_id: increments whenever the source issues a new RREQ

2. Source broadcast RREQ data packet for searching route

<source_addr, source_sequence#, broadcast_id, dest_addr, dest_sequence#, hop_cnt>

it is a time stamp. When destination send RREP it increase sequence number, when it send RREQ.

AODV-Concept

3. Destination replies using RREP (Route Reply) unicasting

<source_addr, dest_addr, dest_sequence#, hop_cnt, lifetime>

RREP contains the current sequence number, hop count = 0, full lifetime

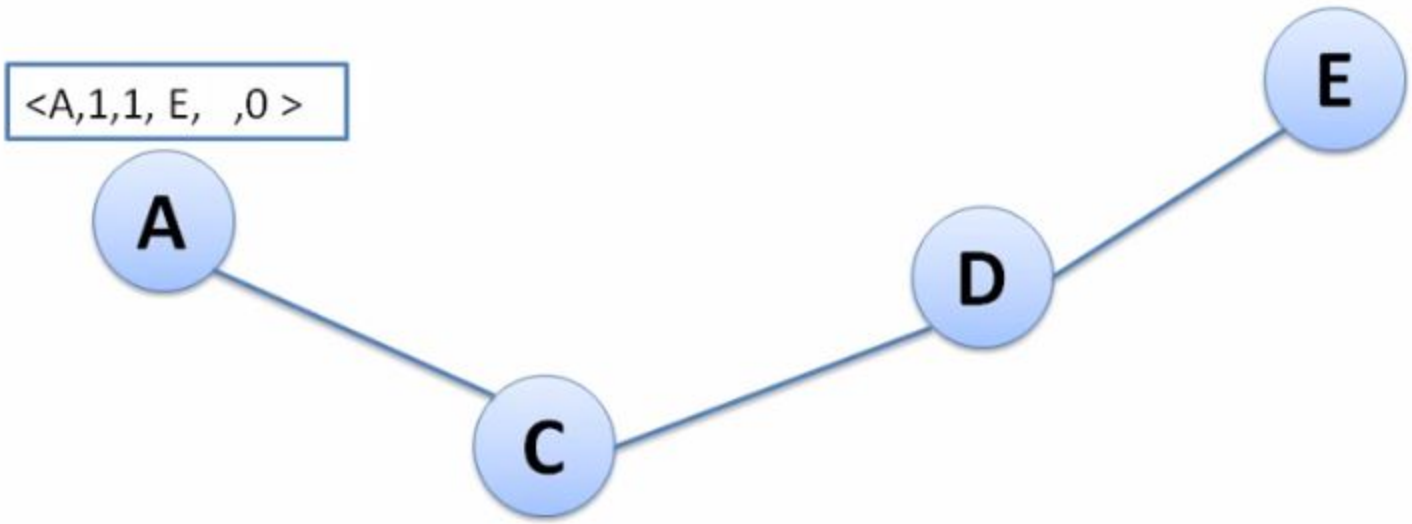
4. Intermediate Node

Discard duplicate packet

Send RREP if it has active route with higher sequence number.

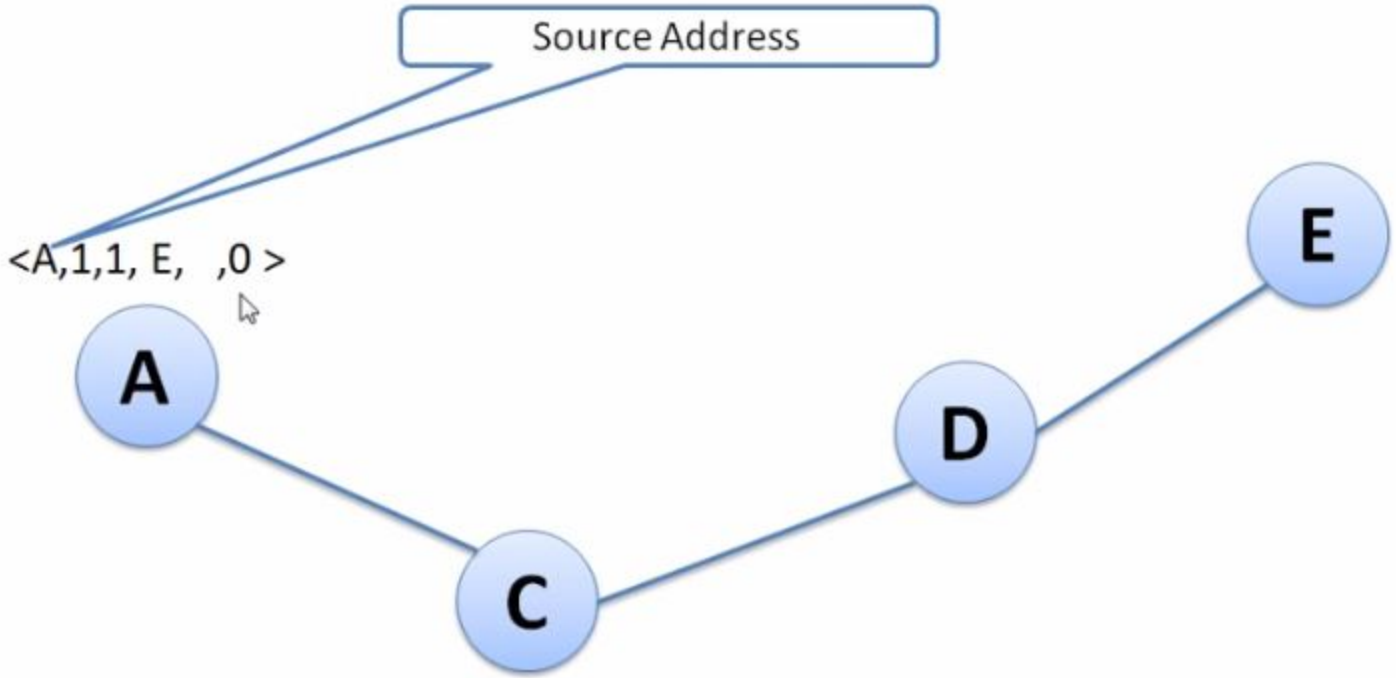
Otherwise broadcast packet.

AODV-Route Discovery [RREQ]



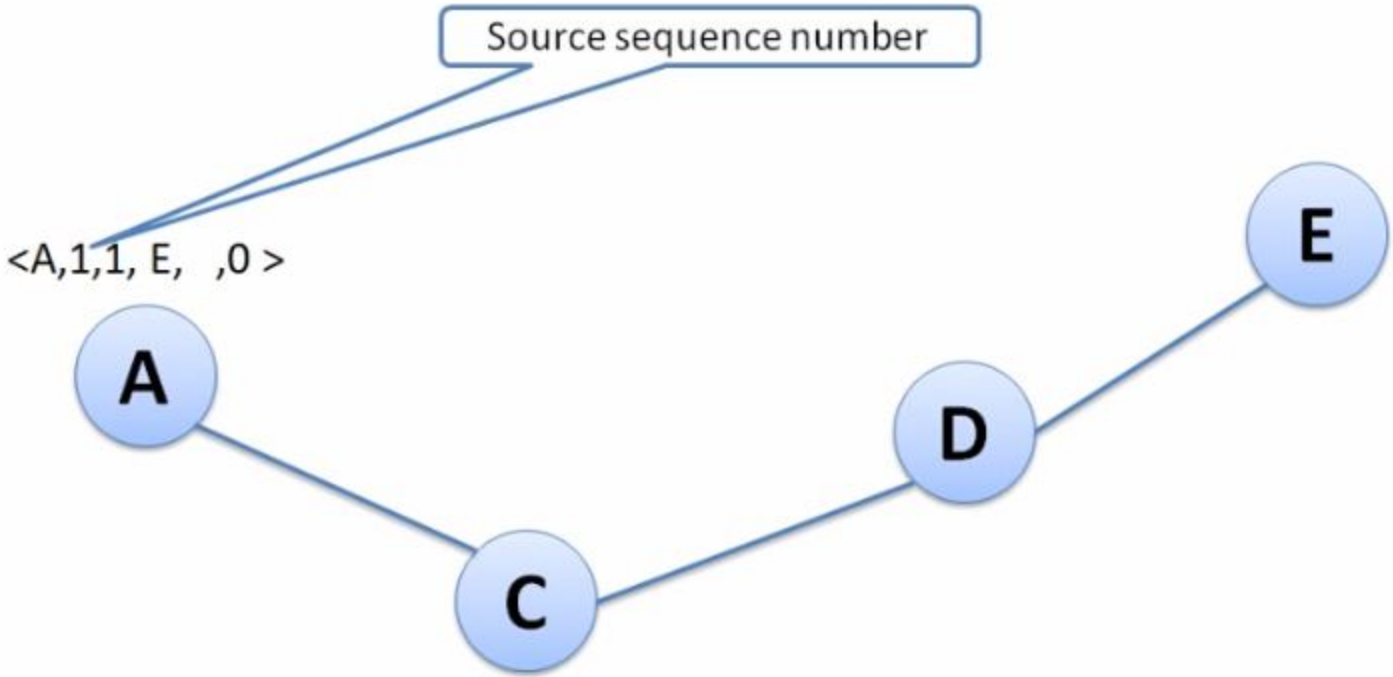
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



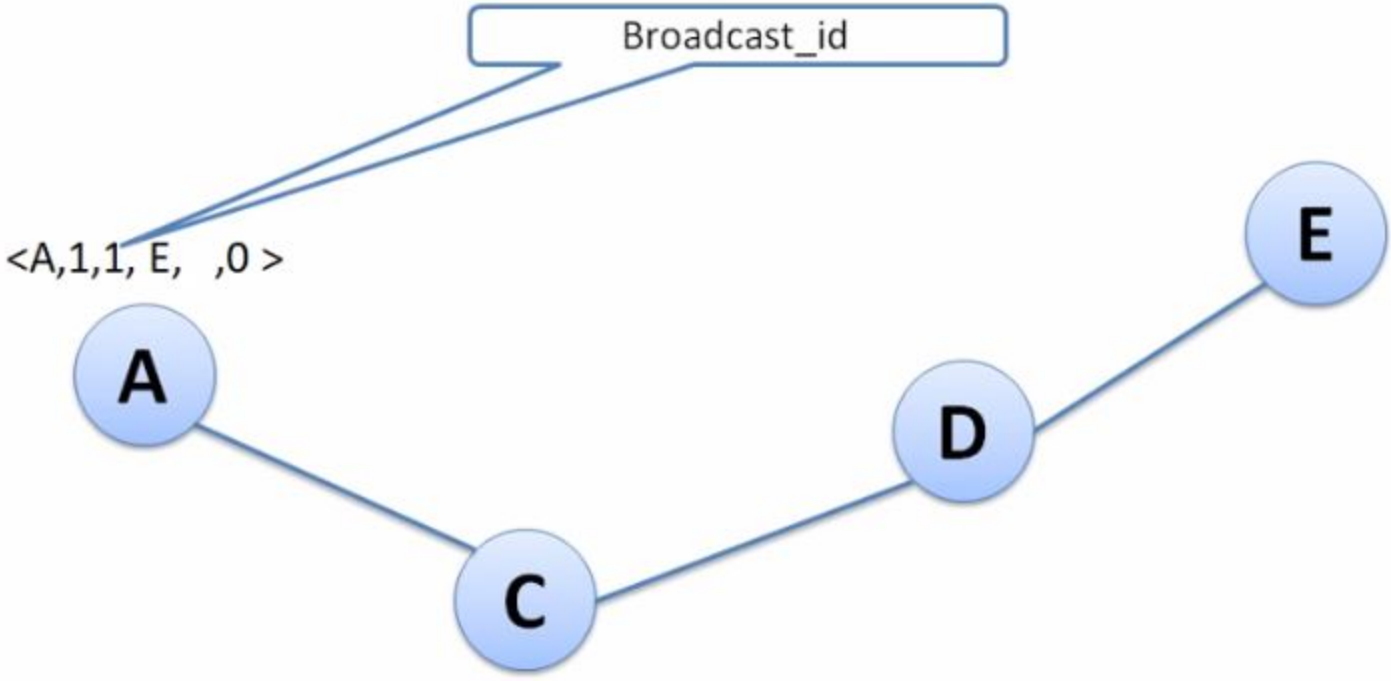
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



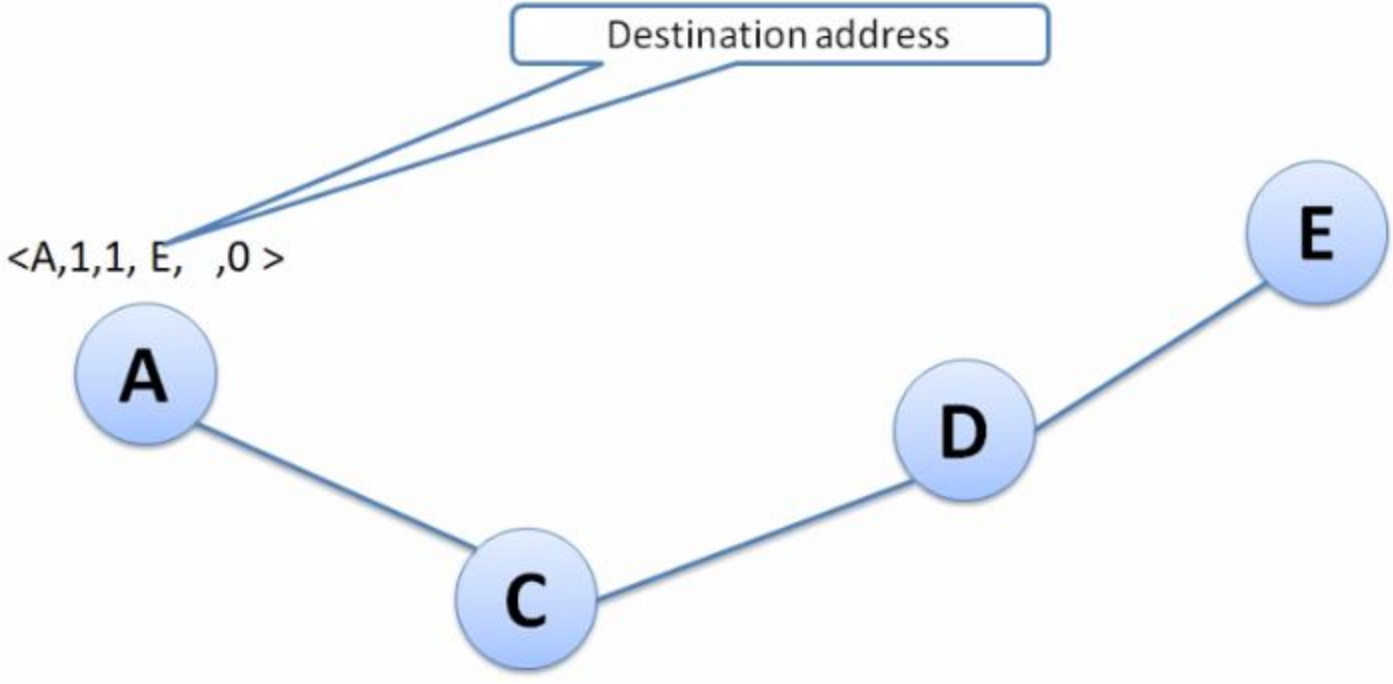
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



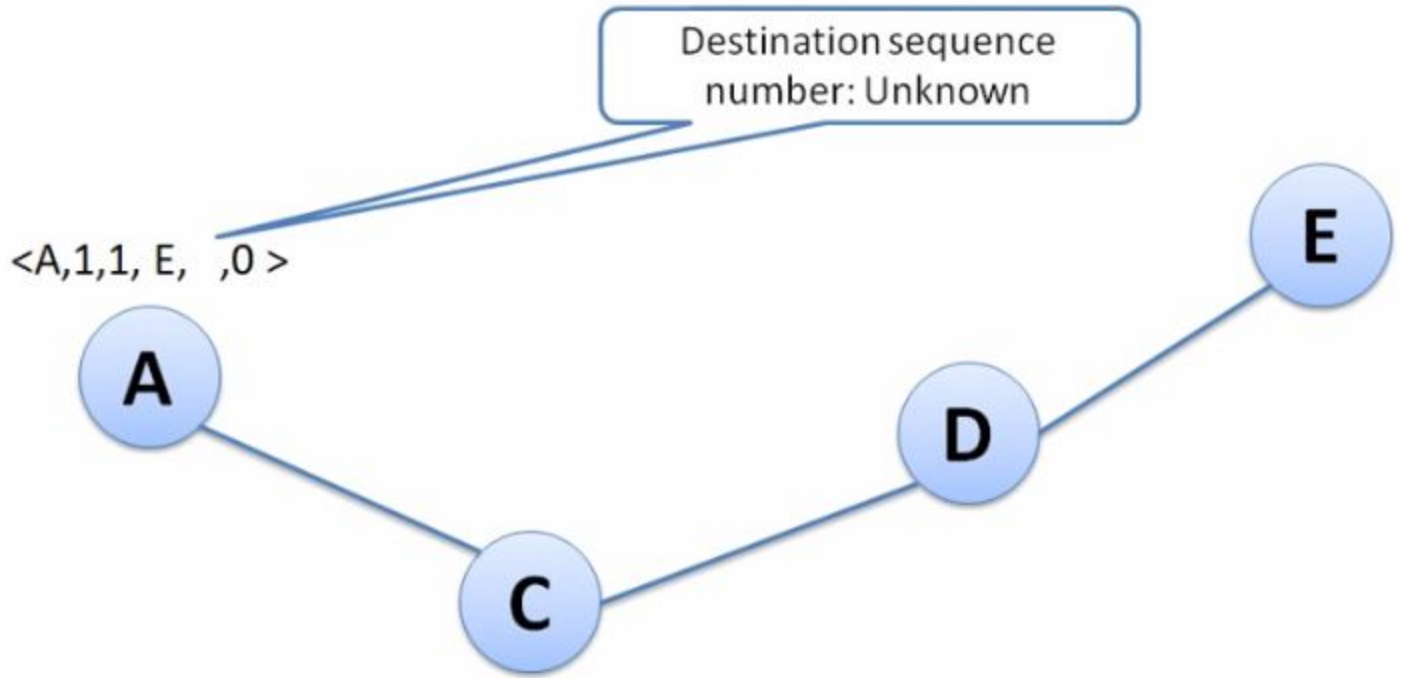
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



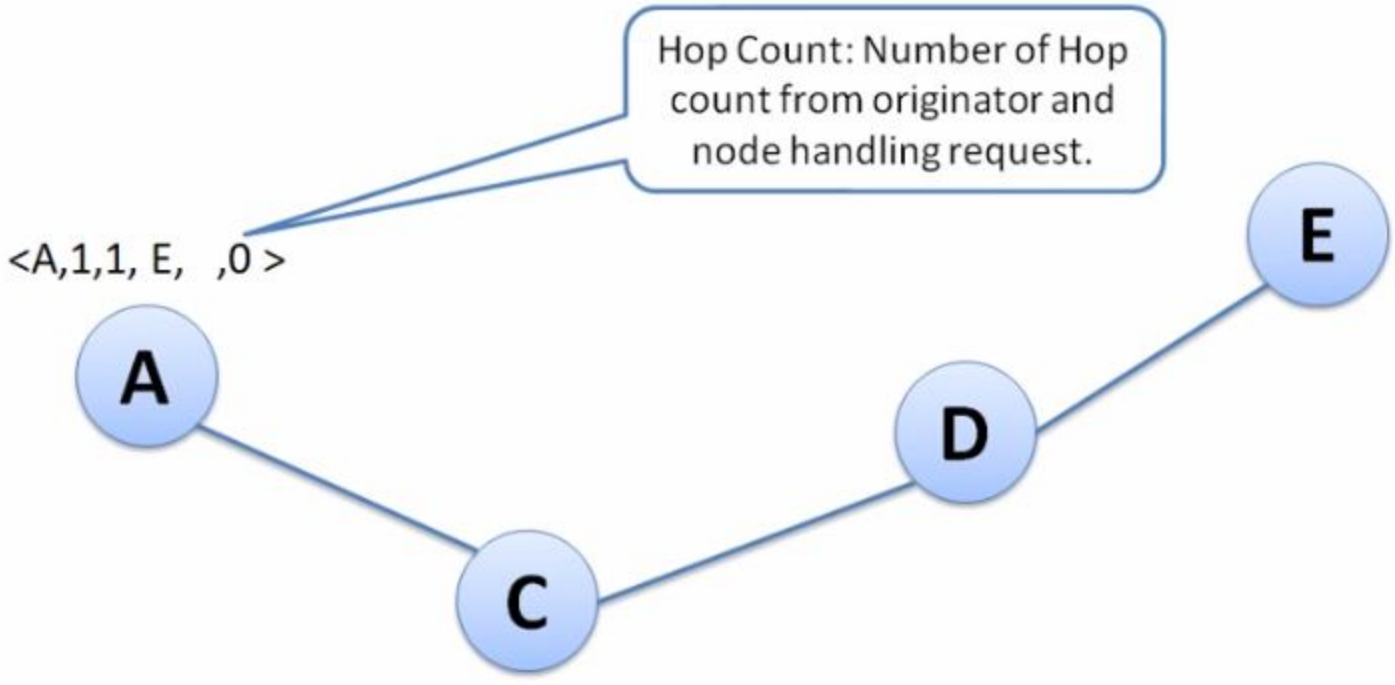
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



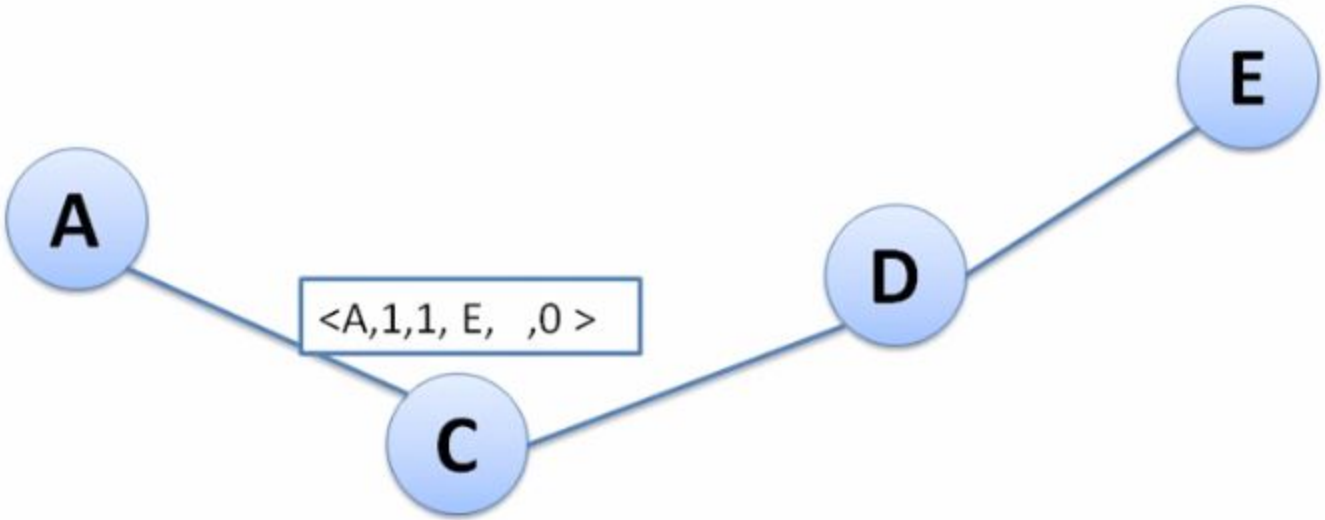
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



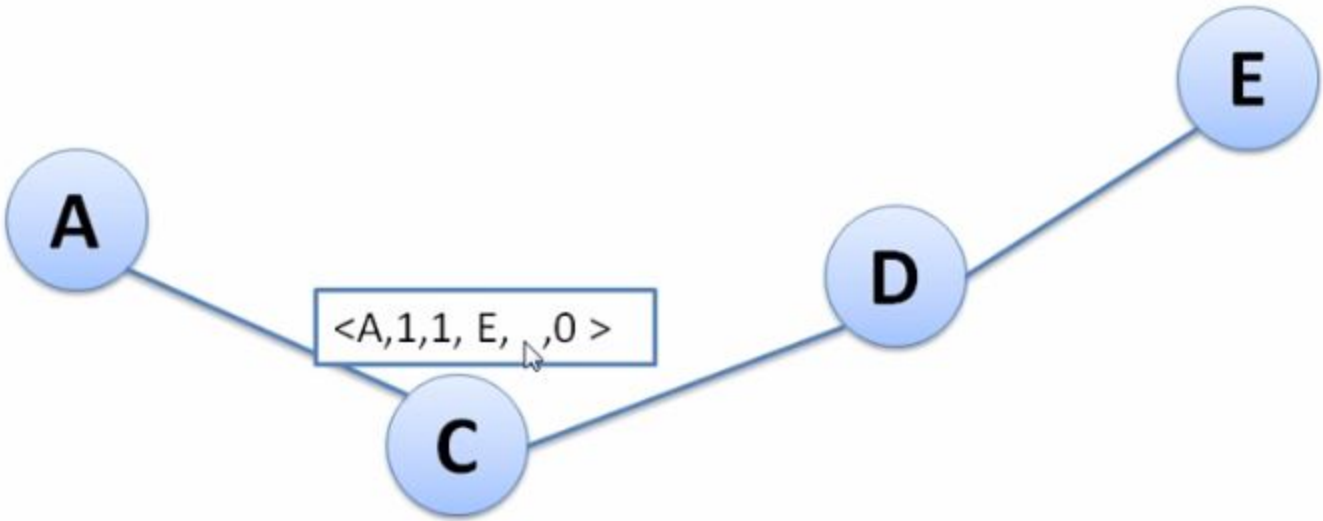
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]



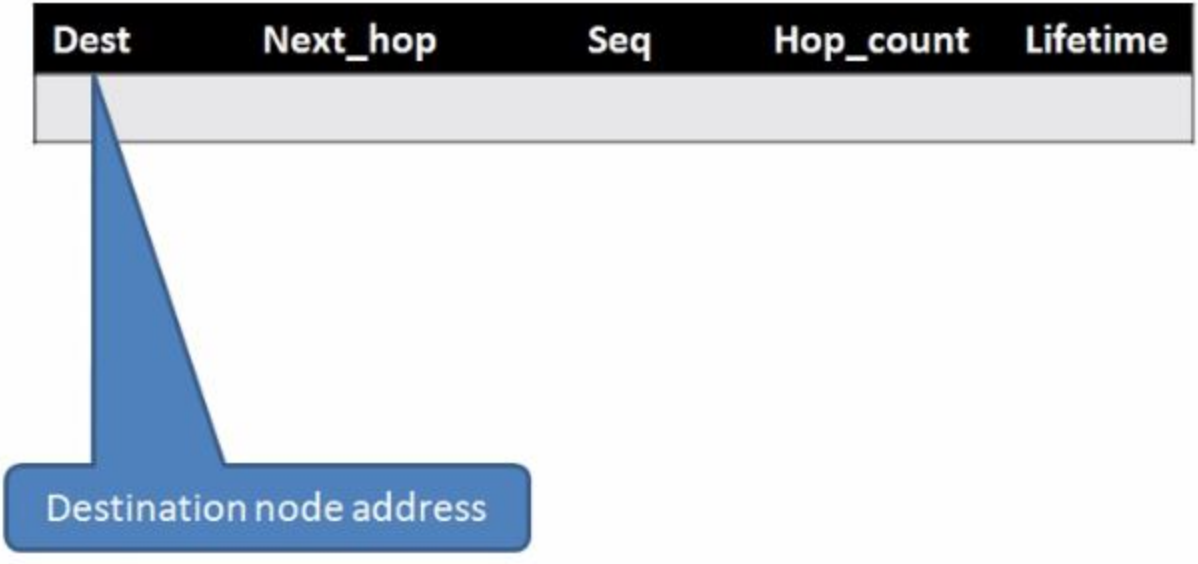
A will send RREQ packet to all it's neighbour.

AODV-Route Discovery [RREQ]

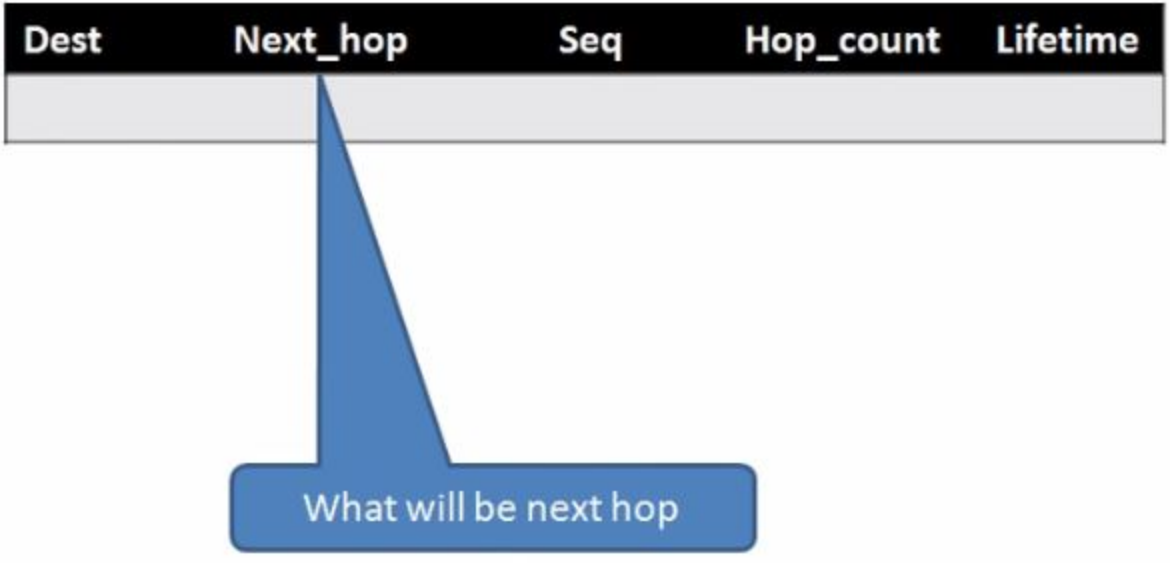


C will set a reverse path to node from which it is receiving RREQ. C store information in table.

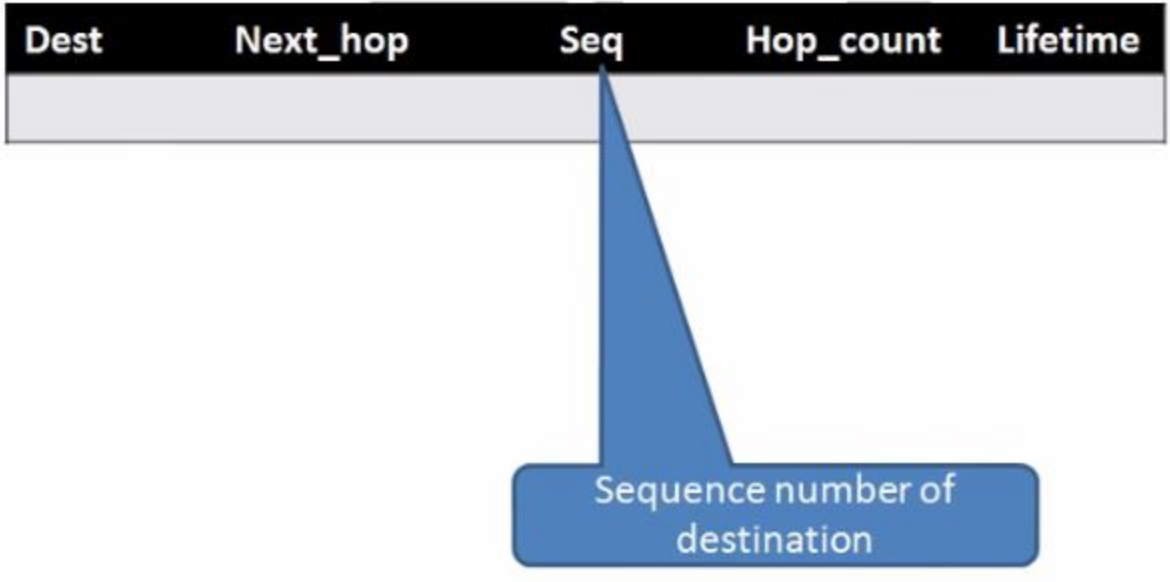
AODV-Routing Table Entry



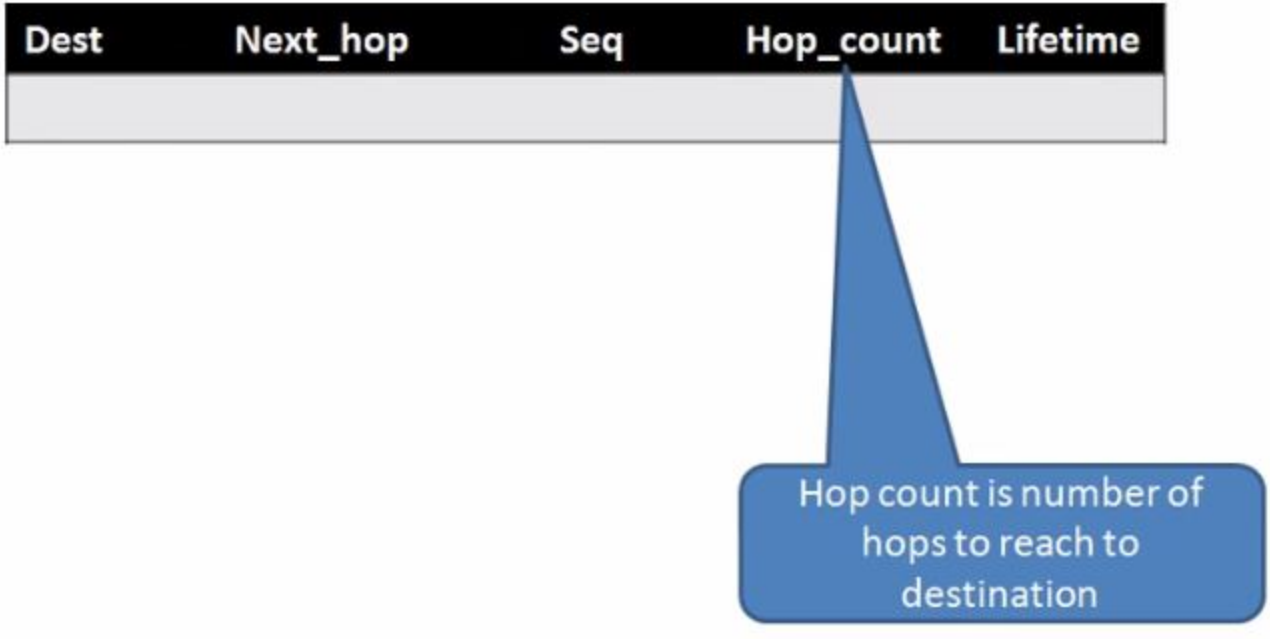
AODV-Routing Table Entry



AODV-Routing Table Entry



AODV-Routing Table Entry



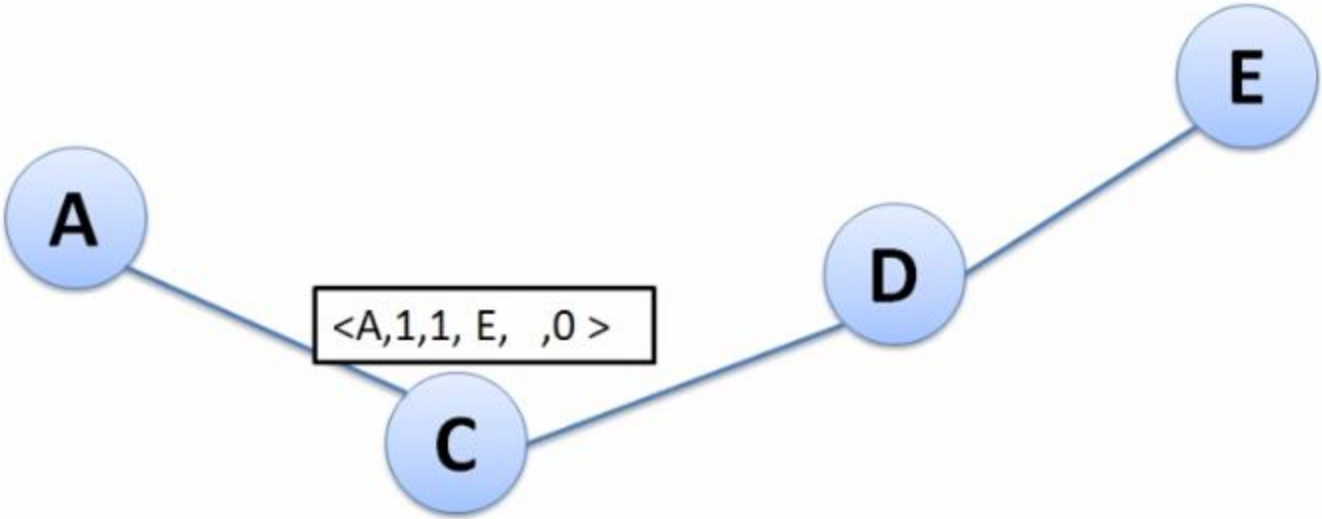
AODV-Routing Table Entry

Dest	Next_hop	Seq	Hop_count	Lifetime

After how much time route entry going to be expired.

AODV-Route Discovery [RREQ]

C increase hop count in RREQ.
C check it's routing table if it has a valid route to E it reply.

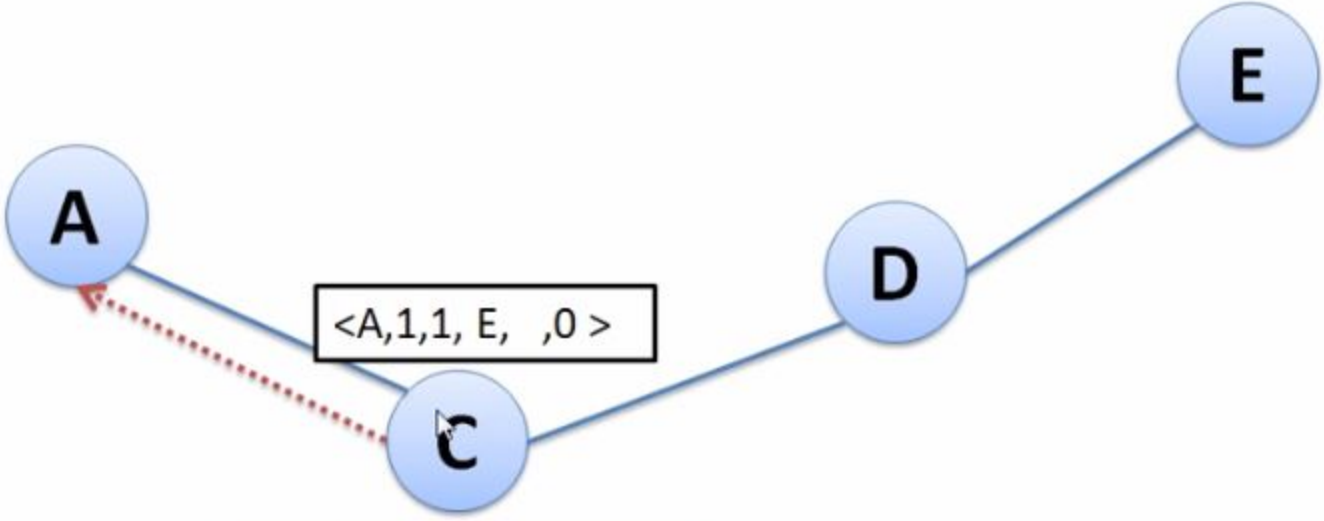


Dest	Next	Hop	Seq
A	A	1	1

C check it's routing table and finds nothing.
C add a entry for reverse path to source.

AODV-Route Discovery [RREQ]

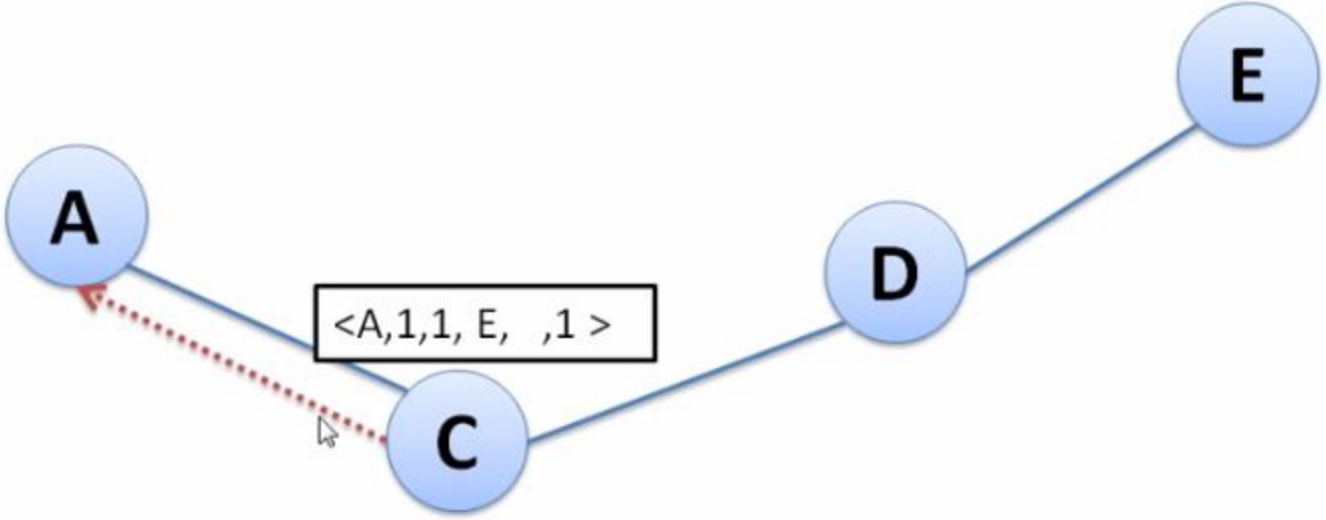
C increase hop count in RREQ.
C check it's routing table if it has a valid route to E it reply.



Dest	Next	Hop	Seq
A	A	1	1

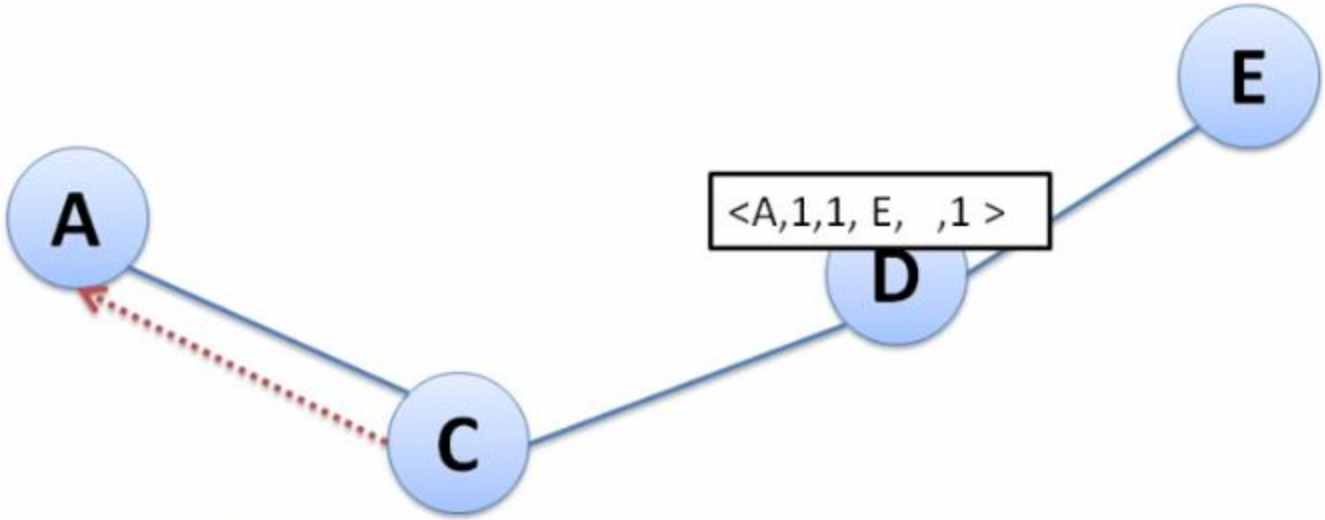
C check it's routing table and finds nothing.
C add a entry for reverse path to source.

AODV-Route Discovery [RREQ]



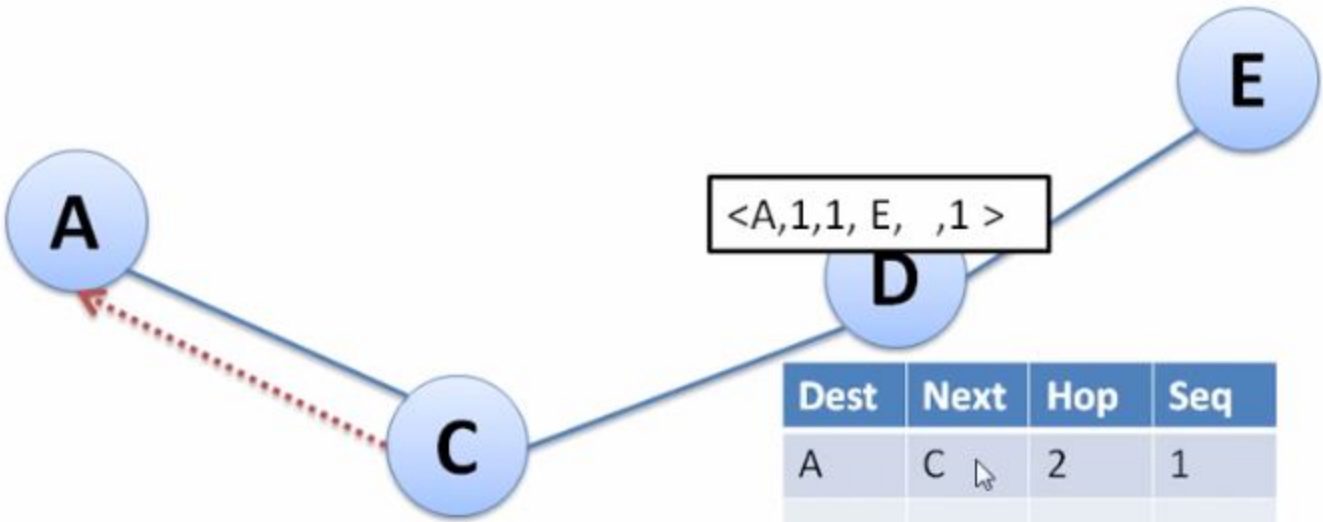
Dest	Next	Hop	Seq
A	A	1	1

AODV-Route Discovery [RREQ]



Dest	Next	Hop	Seq
A	A	1	1

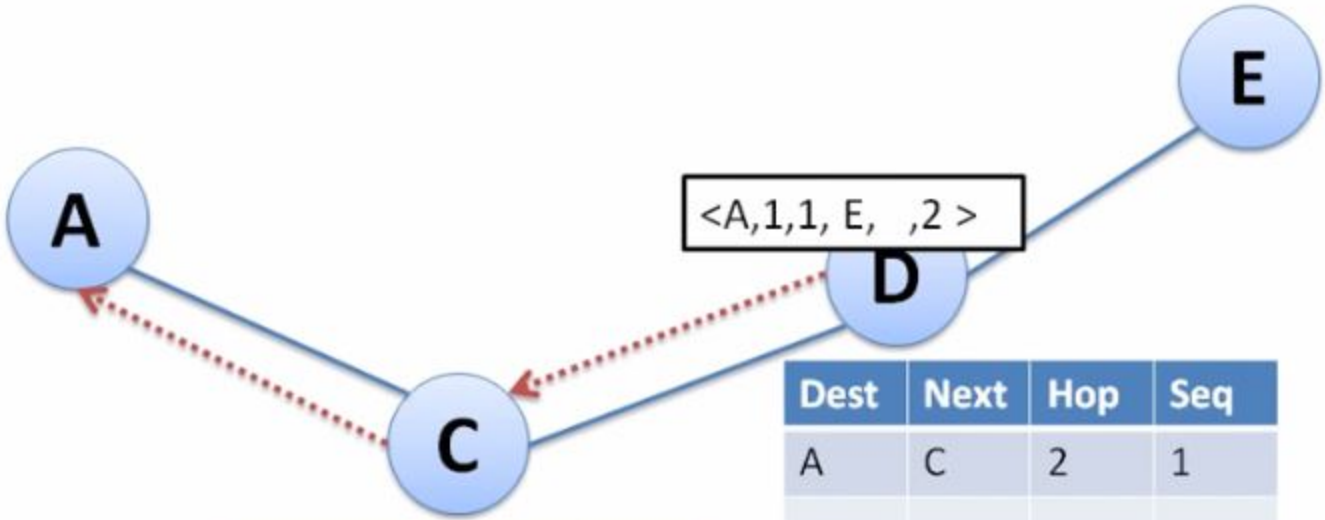
AODV-Route Discovery [RREQ]



Dest	Next	Hop	Seq
A	A	1	1

Dest	Next	Hop	Seq
A	C	2	1

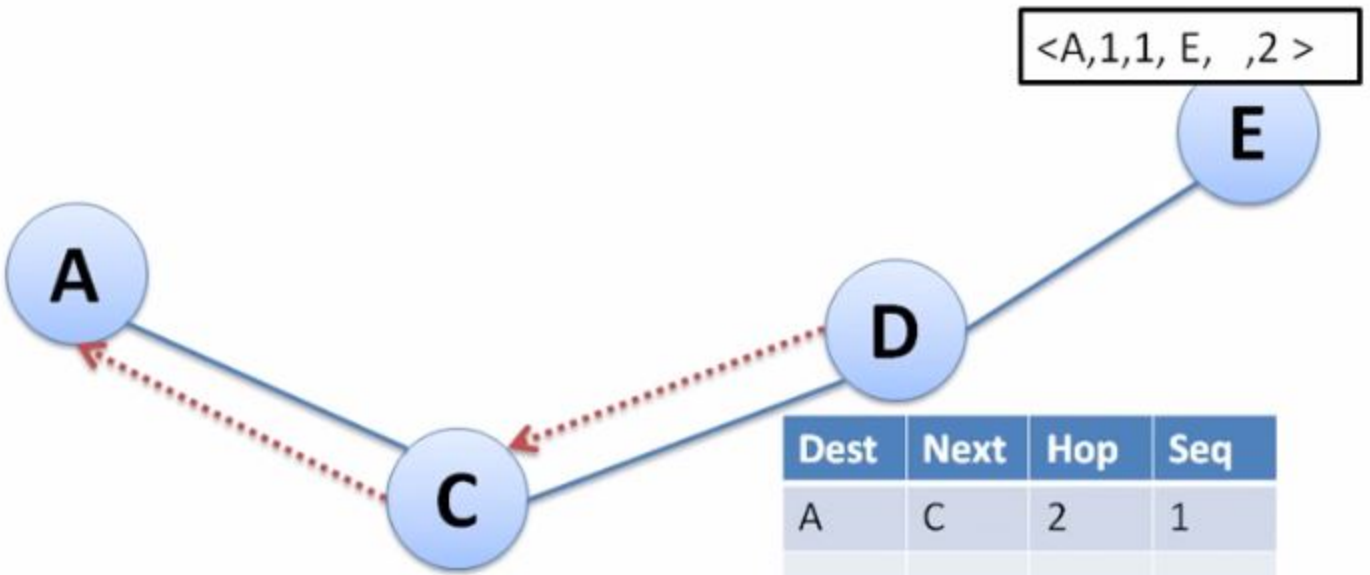
AODV-Route Discovery [RREQ]



Dest	Next	Hop	Seq
A	A	1	1

Dest	Next	Hop	Seq
A	C	2	1

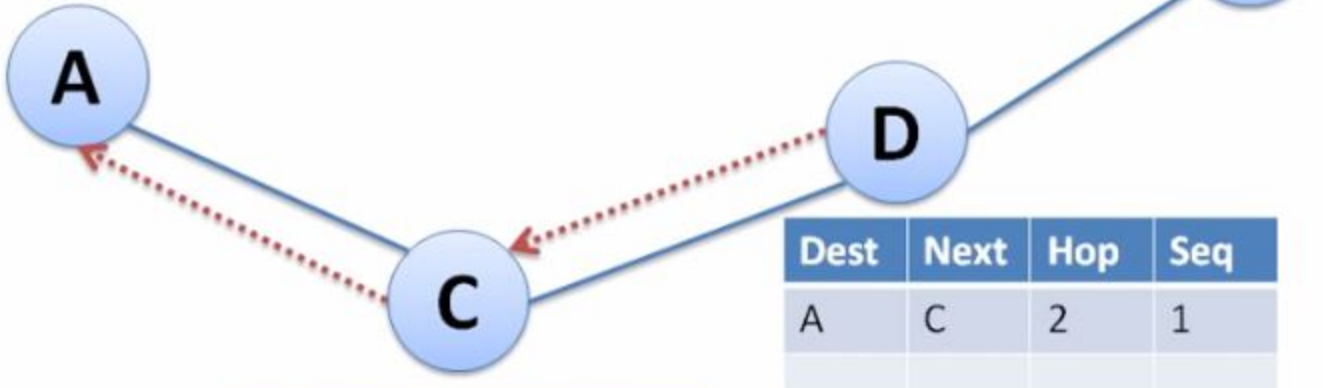
AODV-Route Discovery [RREQ]



Dest	Next	Hop	Seq
A	C	2	1

Dest	Next	Hop	Seq
A	A	1	1

AODV-Route Discovery [RREQ]



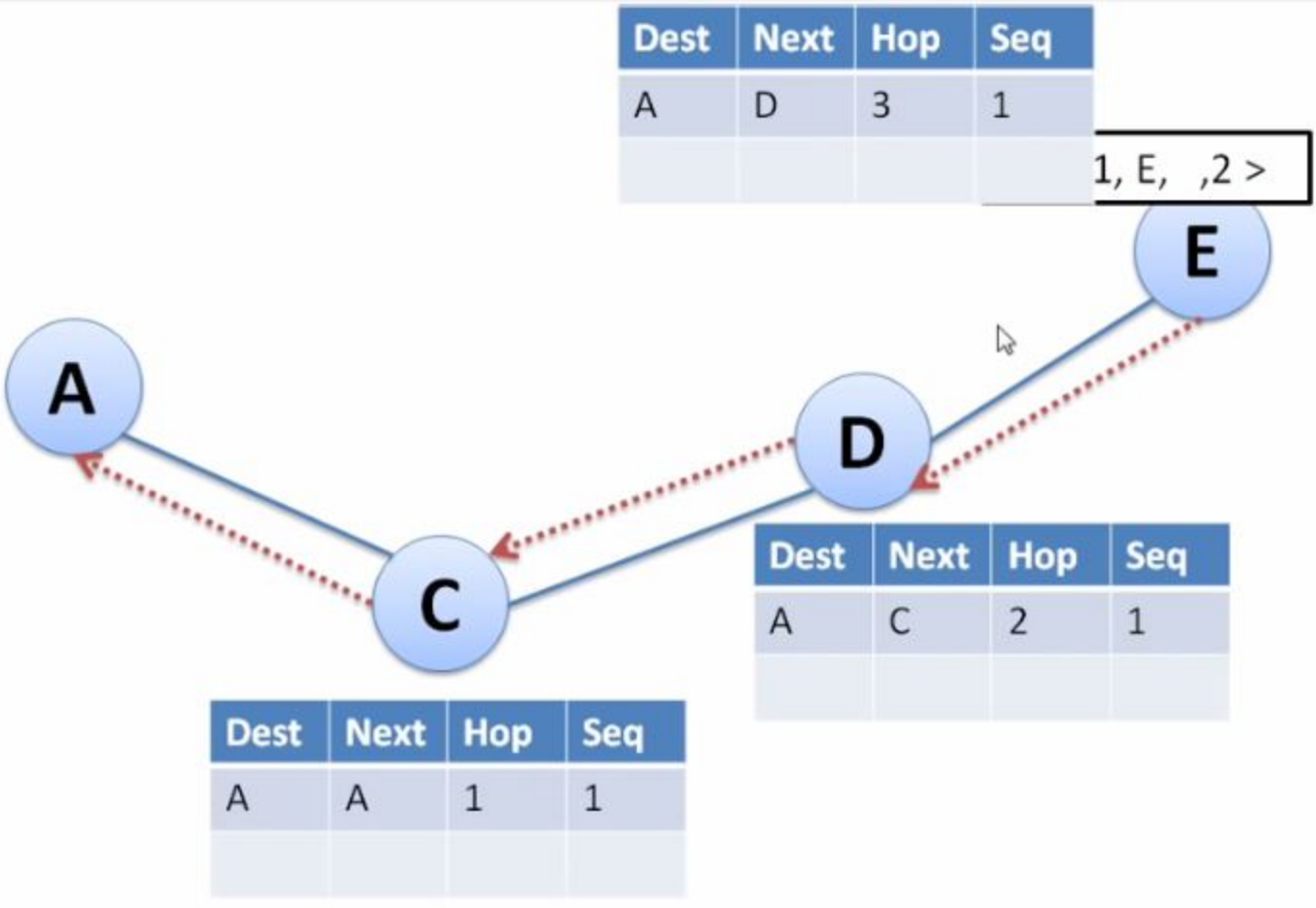
Dest	Next	Hop	Seq
A	D	3	1

1, E, ,2 >

Dest	Next	Hop	Seq
A	C	2	1

Dest	Next	Hop	Seq
A	A	1	1

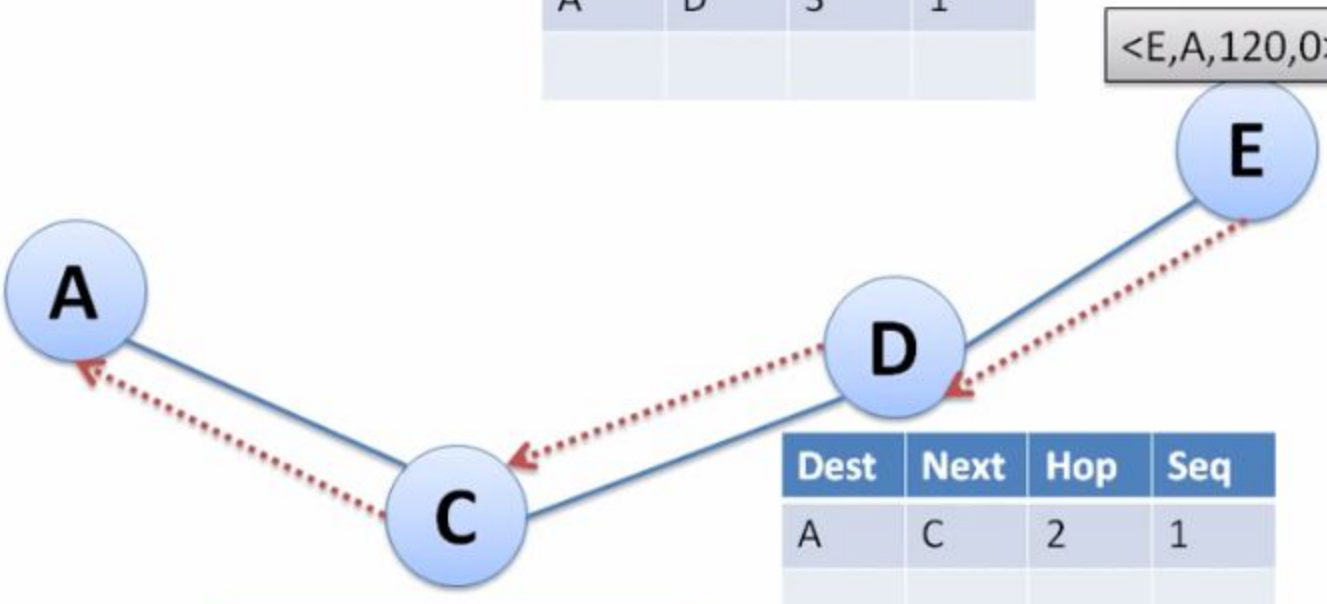
AODV-Route Discovery [RREQ]



AODV-Route Reply [RREP]

E will prepare a route reply packet.

Dest	Next	Hop	Seq
A	D	3	1



Dest	Next	Hop	Seq
A	C	2	1

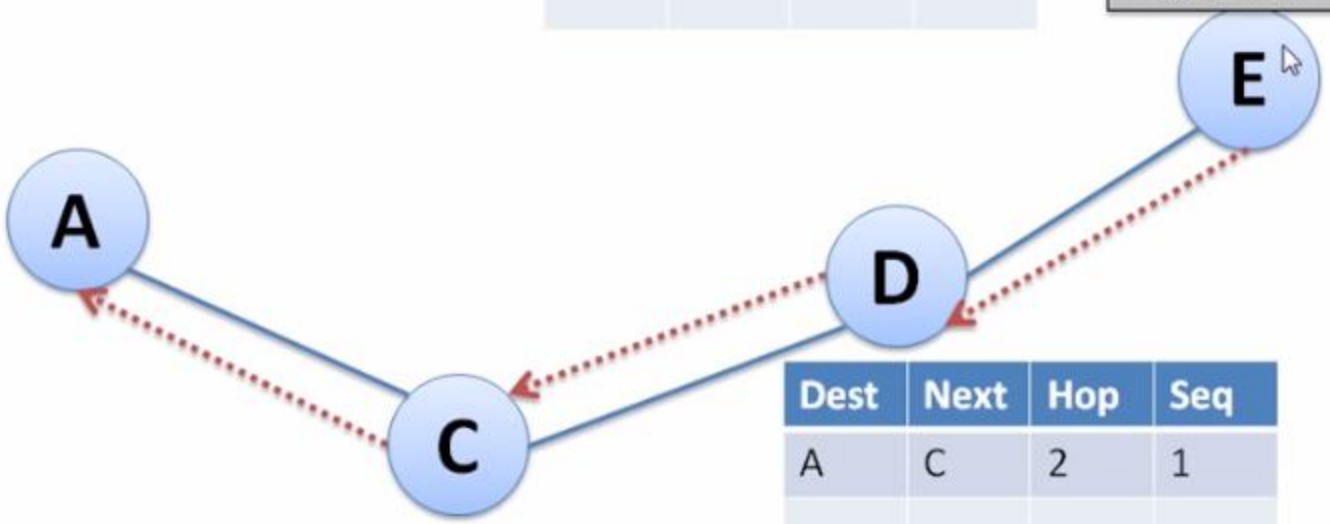
Dest	Next	Hop	Seq
A	A	1	1

AODV-Route Reply [RREP]

E will prepare a route reply packet.

Dest	Next	Hop	Seq
A	D	3	1

<E,A,120,0>



Dest	Next	Hop	Seq
A	C	2	1

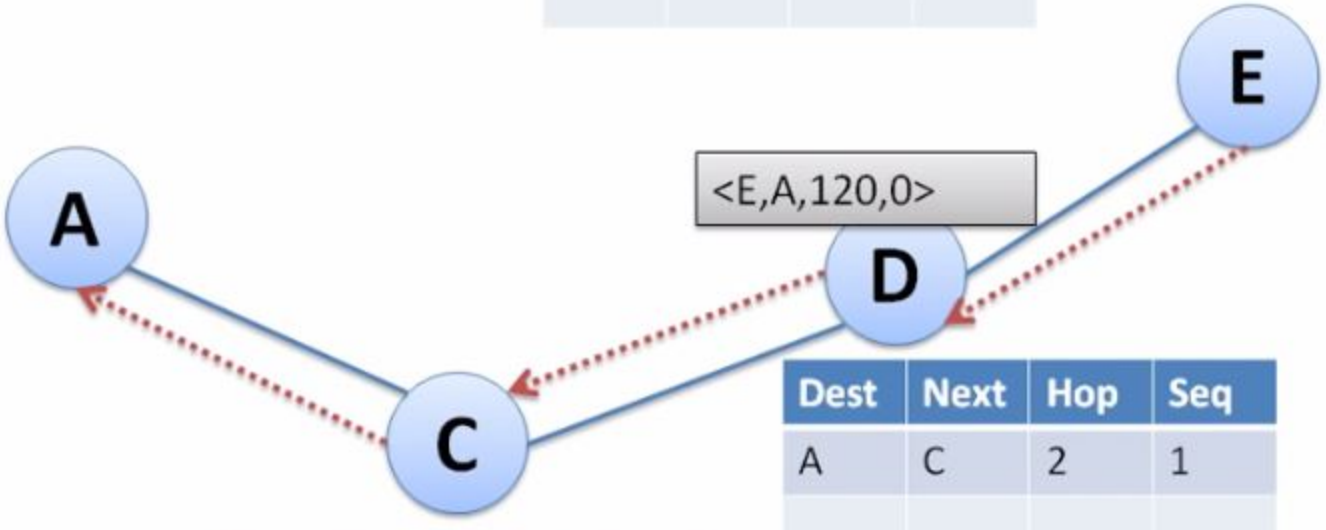
Dest	Next	Hop	Seq
A	A	1	1

<source_addr, dest_addr, dest_sequence#, hop_cnt, lifetime>

AODV-Route Reply [RREP]

E will prepare a route reply packet.

Dest	Next	Hop	Seq
A	D	3	1



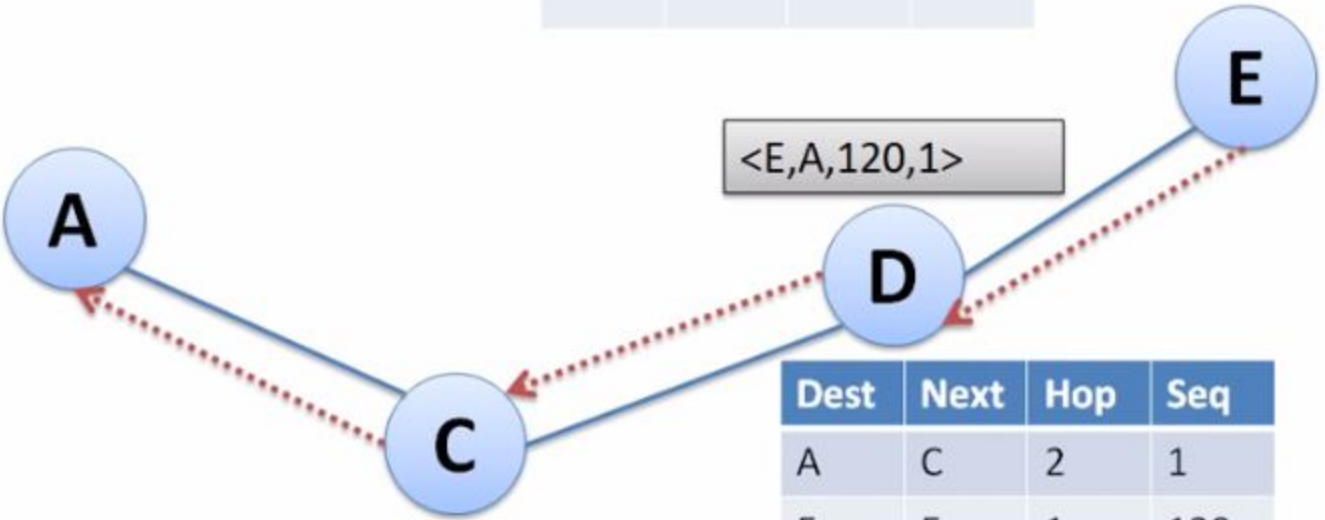
Dest	Next	Hop	Seq
A	C	2	1

Dest	Next	Hop	Seq
A	A	1	1

<source_addr, dest_addr, dest_sequence#, hop_cnt, lifetime>

AODV-Route Reply [RREP]

Dest	Next	Hop	Seq
A	D	3	1



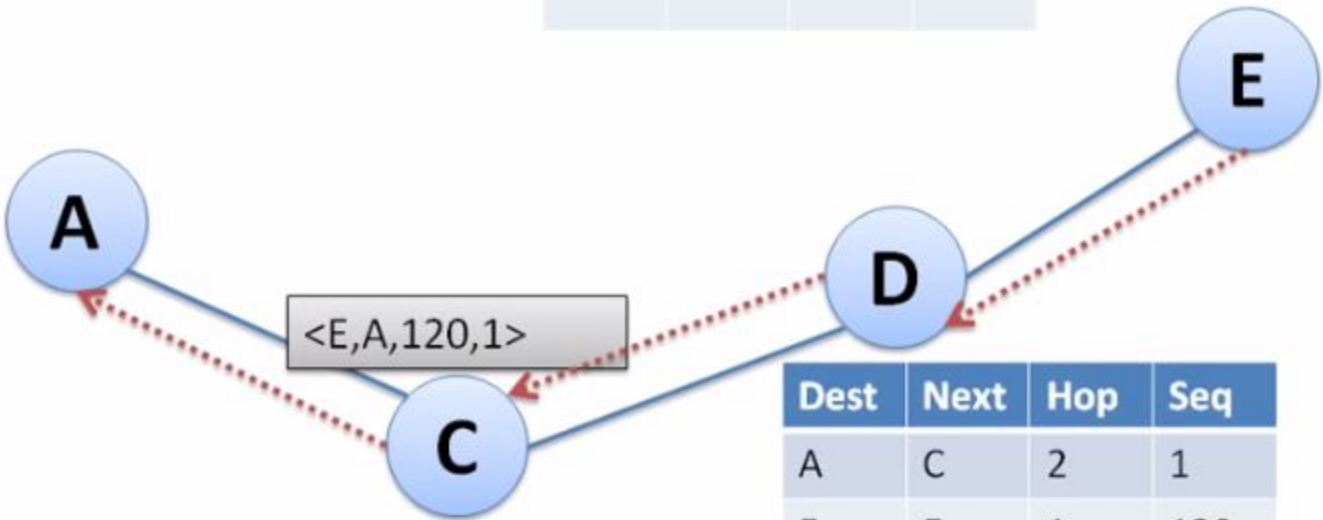
Dest	Next	Hop	Seq
A	C	2	1
E	E	1	120

Dest	Next	Hop	Seq
A	A	1	1

D will create an entry for node E.

AODV-Route Reply [RREP]

Dest	Next	Hop	Seq
A	D	3	1



Dest	Next	Hop	Seq
A	C	2	1
E	E	1	120

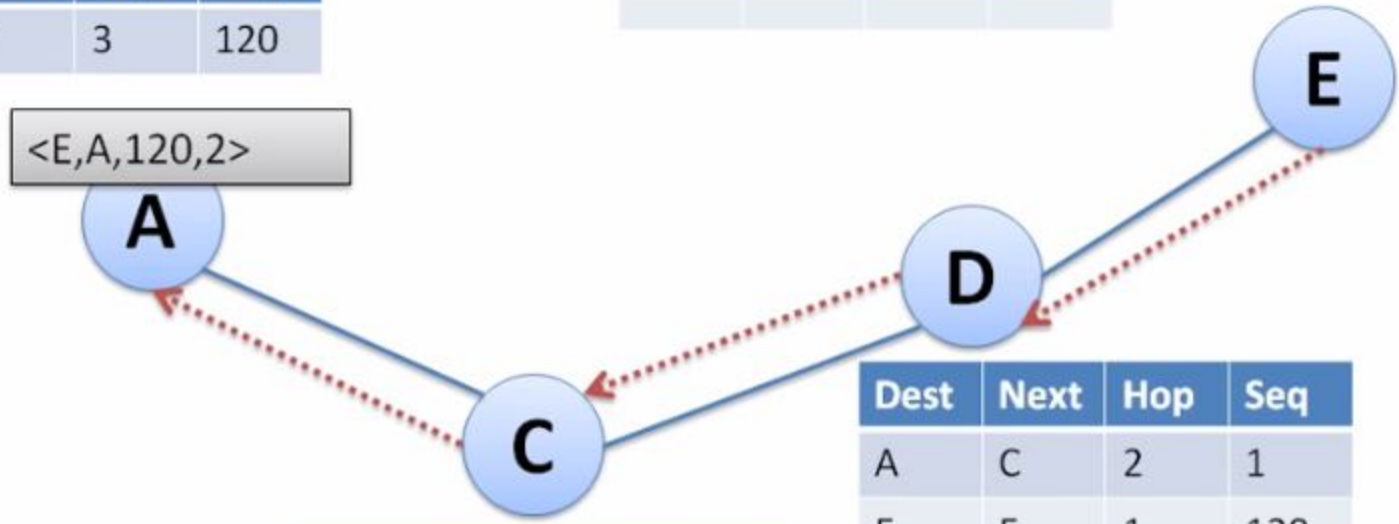
Dest	Next	Hop	Seq
A	A	1	1
E	D	2	120

C will create an entry for node E.

AODV-Route Reply [RREP]

Dest	Next	Hop	Seq
A	D	3	1

Dest	Next	Hop	Seq
E	C	3	120



Dest	Next	Hop	Seq
A	C	2	1
E	E	1	120

Dest	Next	Hop	Seq
A	A	1	1
E	D	2	120

A will create an entry for node E.