East West University

Course Title : **Software Quality Assurance**
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Section : 01
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Project topic: Online Ambulance Service

Submitted By

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Online Ambulance Service

Introduction:

This is an integrated service that provides all information about the location of the ambulance and its routes for the public. The proposed system is a web-based application that provides information regarding ambulance quality, routes, fair. The system contains an online order system where service recipients can order any nearby ambulance service and service providers can receive the given order. There is also an admin module where the admin can add ambulance, scrap ambulance, and any update. The admin is a panel that will be consisted of a group of authorized persons.

1st Sequence Diagram:

Login System Sequence Diagram:

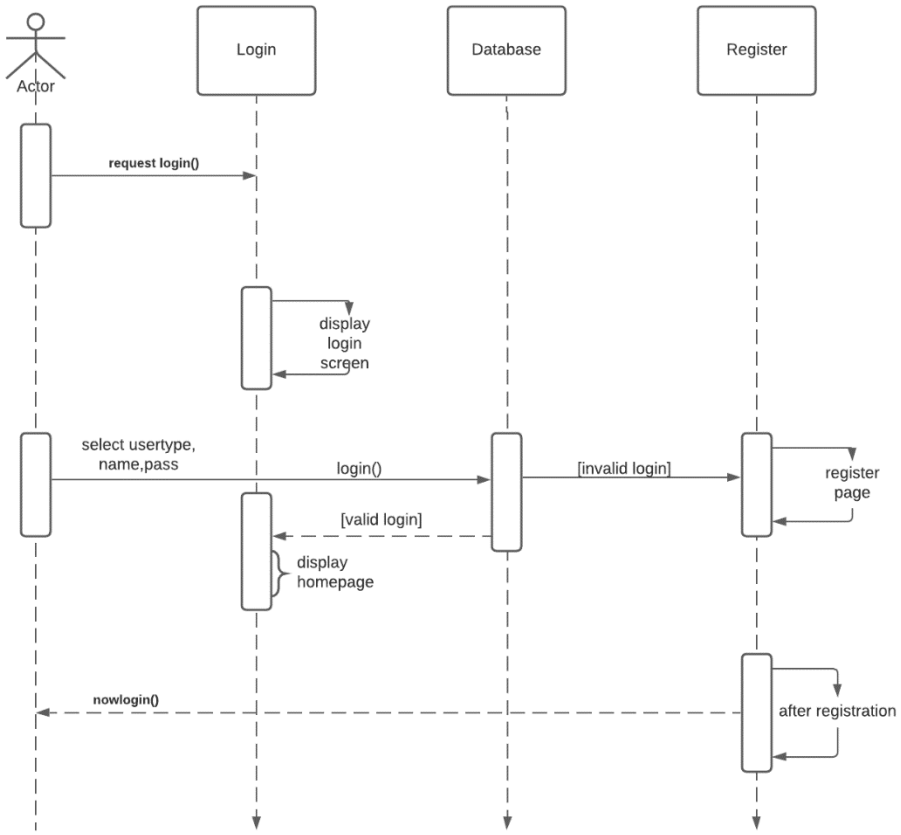


Fig: Login System

The functionality of the Login Sequence Diagram:

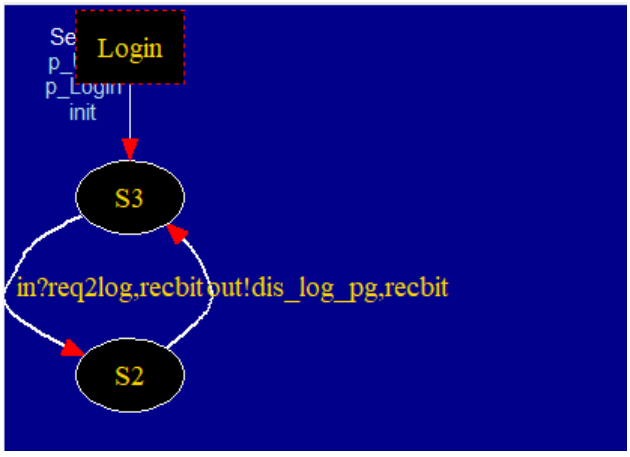
In this system actor (admin, service receiver, service provider) would try to log in to the system and for that, the actor would enter user type, username, and password. After this, the information would be verified and checked into the database. If the information is legit then the actor would be able to enter the homepage. Otherwise, the system would take the user to the registration page for registration.

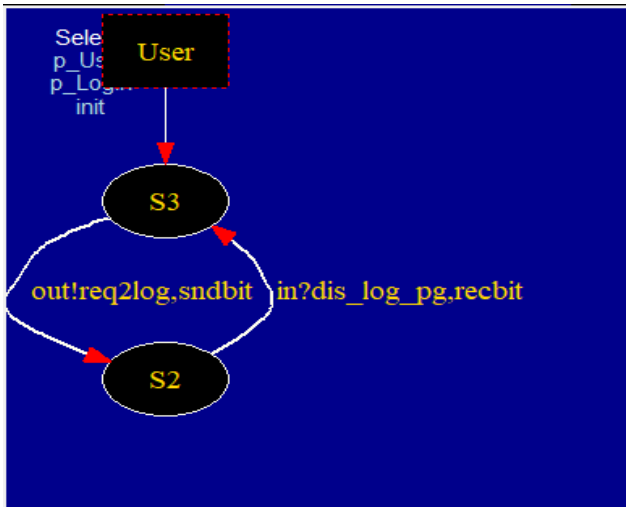
PROMELA Code for the Login System:

```
mtype = { req2log, dis_log_pg};


chan toU = [2] of {mtype, bit};
chan toL = [2] of {mtype, bit};


proctype User(chan in, out)
{
        bit sndbit, recbit;
        do
          ::  out !req2log, sndbit ->
              in  ?dis_log_pg, recbit;
        od
}


proctype Login(chan in, out)
{
        bit recbit;
        do
            ::  in ? req2log(recbit)  ->
            out  ! dis_log_pg(recbit);
```

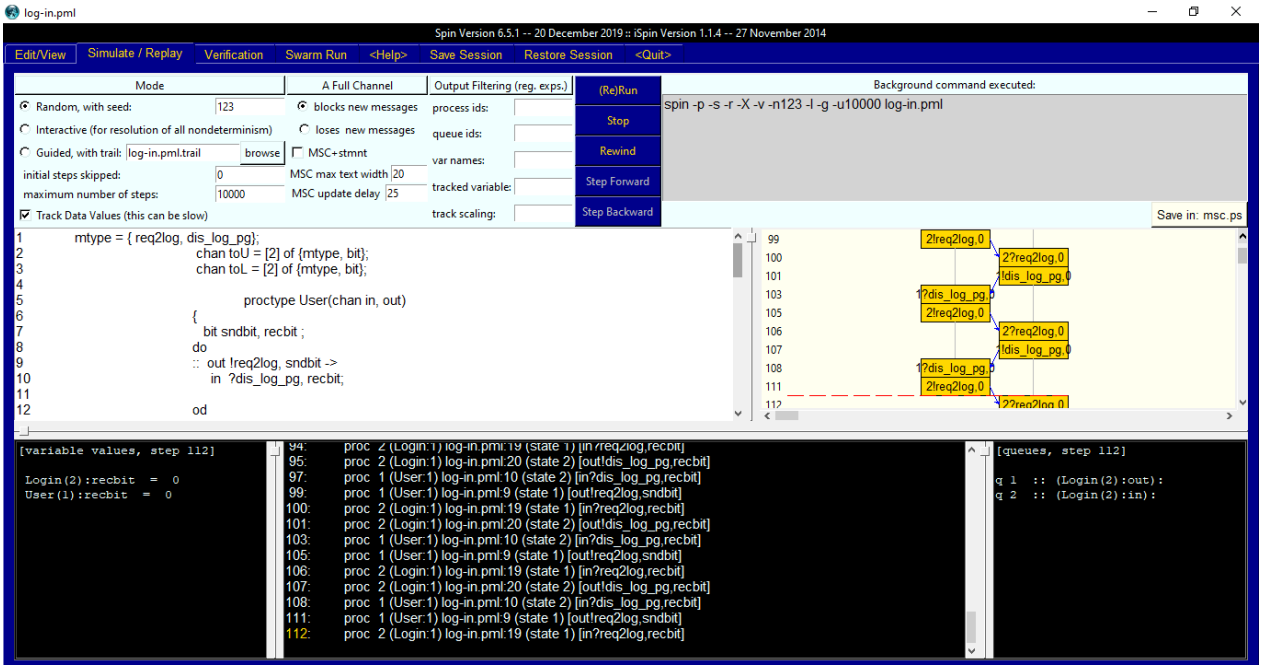
```
        od
}

init
{
        run User (toU, toL);
        run Login (toL, toU);
}
```

Screenshots of the Process Automata:

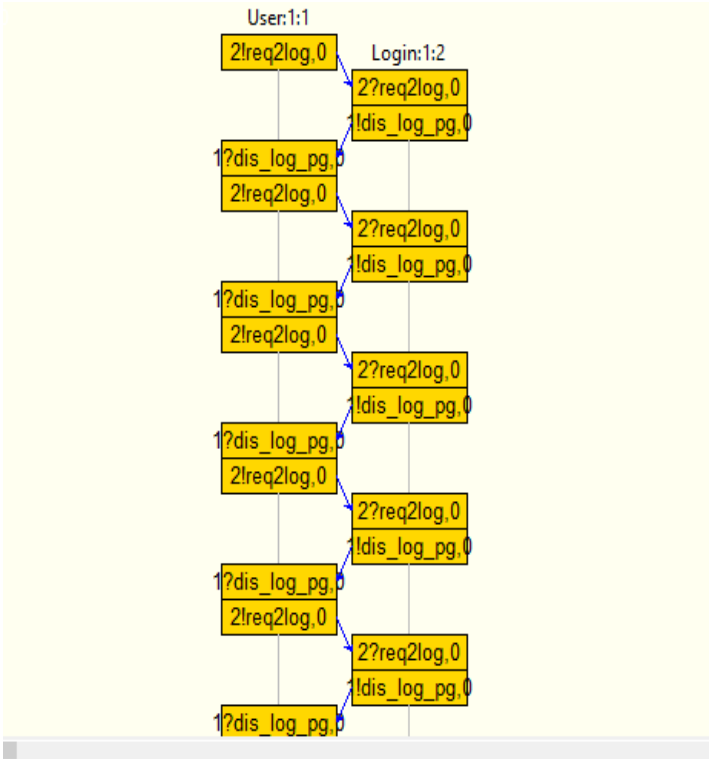




Screenshot of the log-in.pml Simulation:



Screenshot of the log-in.pml Diagram:



2nd Sequence Diagram:

Inbox System Sequence Diagram:

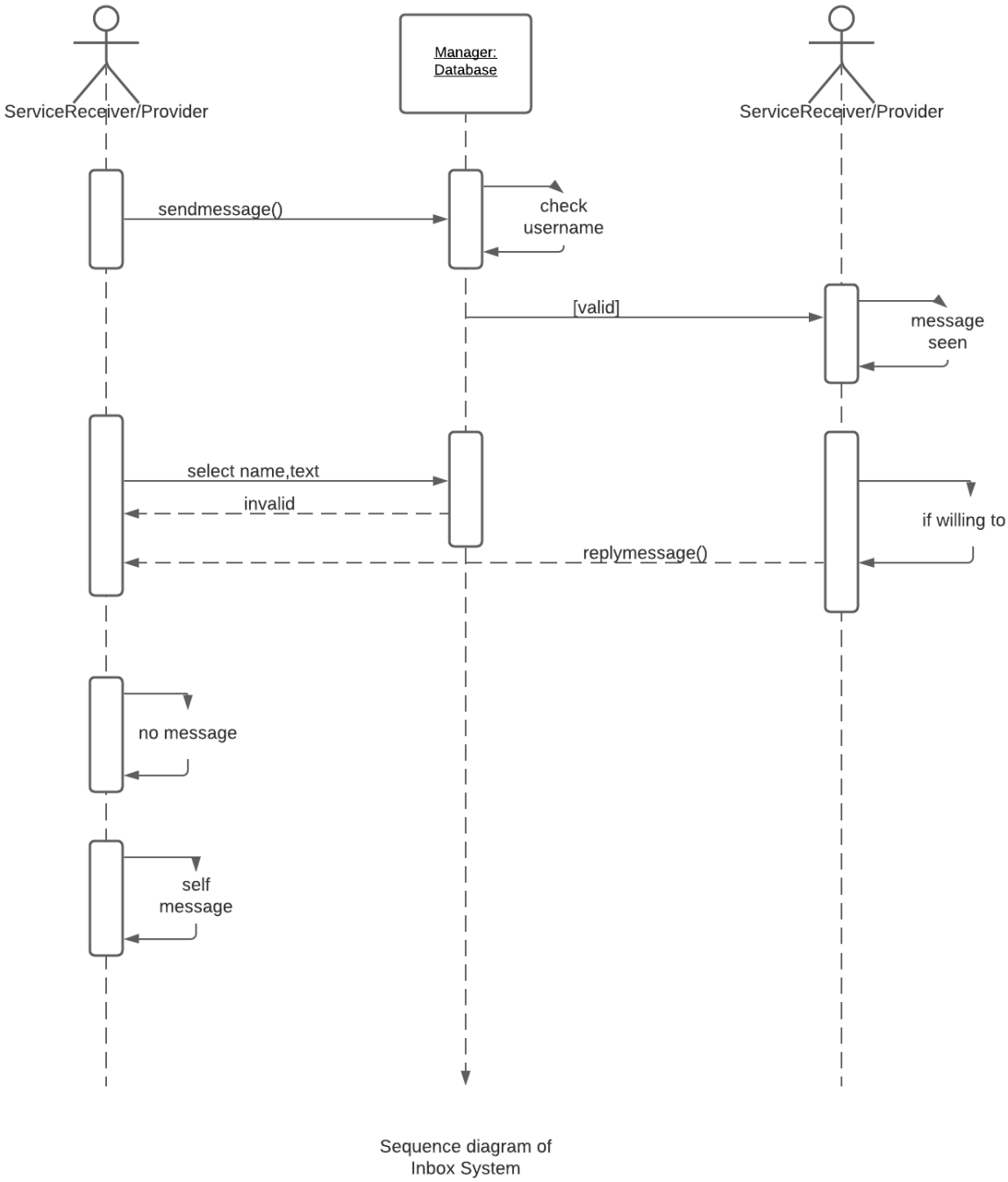


Fig: Inbox System

The functionality of the Inbox Sequence Diagram:

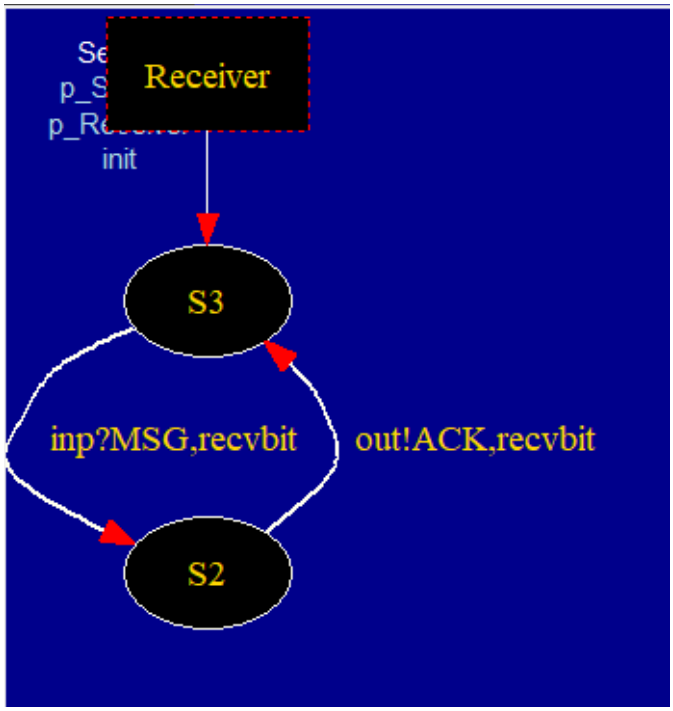
In this system, the service receiver can send messages to the service provider in case of any need and vice versa. The system also allows service receivers to send message to other service receivers and the other way around. There is also a feature where the user can message oneself. First, a user selects a username to text and sends the text. After the message is sent by the user, the user will have to wait for a response. After the message is seen by the recipient then the recipient can reply, and the sender would get the message.

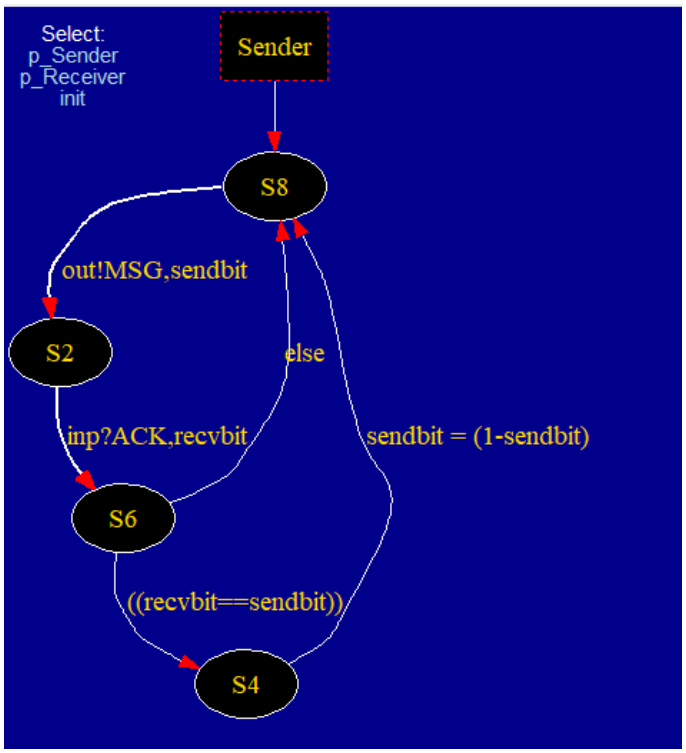
PROMELA Code for the Inbox System:

```
mtype {MSG, ACK};


chan toS = [2] of {mtype, bit};
chan toR = [2] of {mtype, bit};


proctype Sender(chan inp, out)
{
	bit sendbit, recvbit;
	do
	:: out ! MSG, sendbit ->
		inp ? ACK, recvbit;
		if
		:: recvbit == sendbit ->
			sendbit = 1-sendbit
		:: else
		fi
	od
}


proctype Receiver(chan inp, out)
```

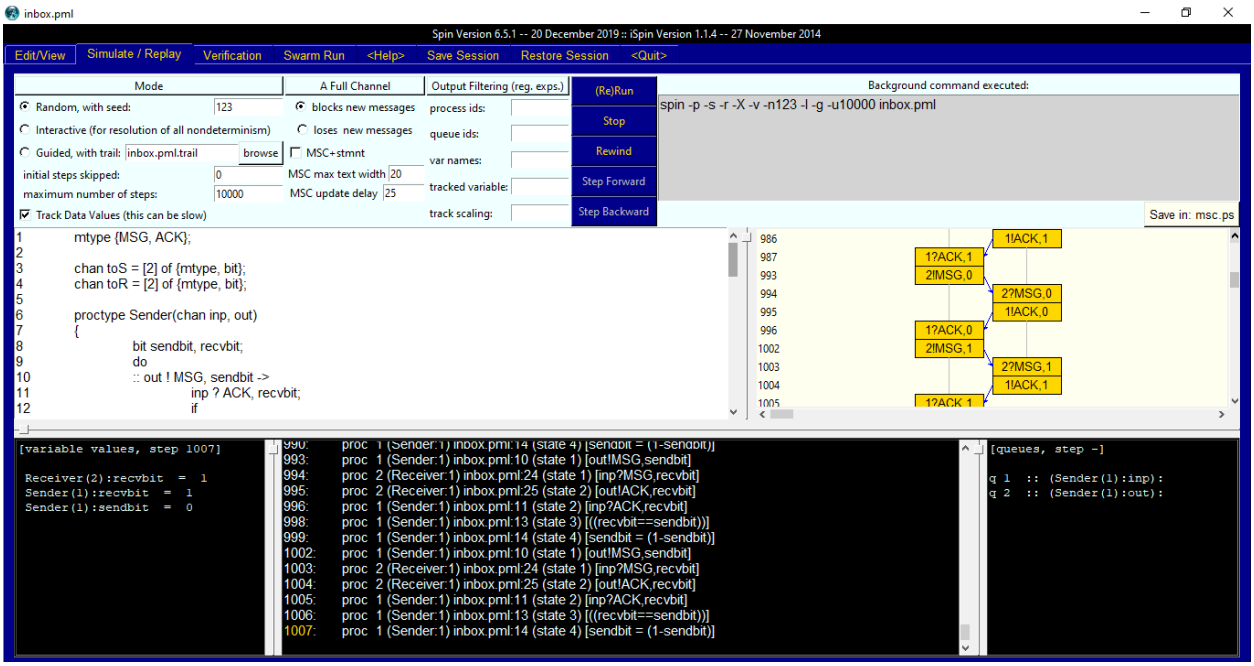
```
{
        bit recvbit;
        do
        :: inp ? MSG(recvbit) ->
                out ! ACK(recvbit);
        od
}

init
{
        run Sender(toS, toR);
        run Receiver(toR, toS);
}
```

Screenshots of the Process Automata:





Screenshot of the inbox.pml Simulation:



Screenshot of the inbox.pml Diagram: