East West University

Project Report 2

Course : CSE 435

Section : 2

Semester : Spring’21

Course Title: Software Quality Assurance

Project Title: Book Catalog & Review System

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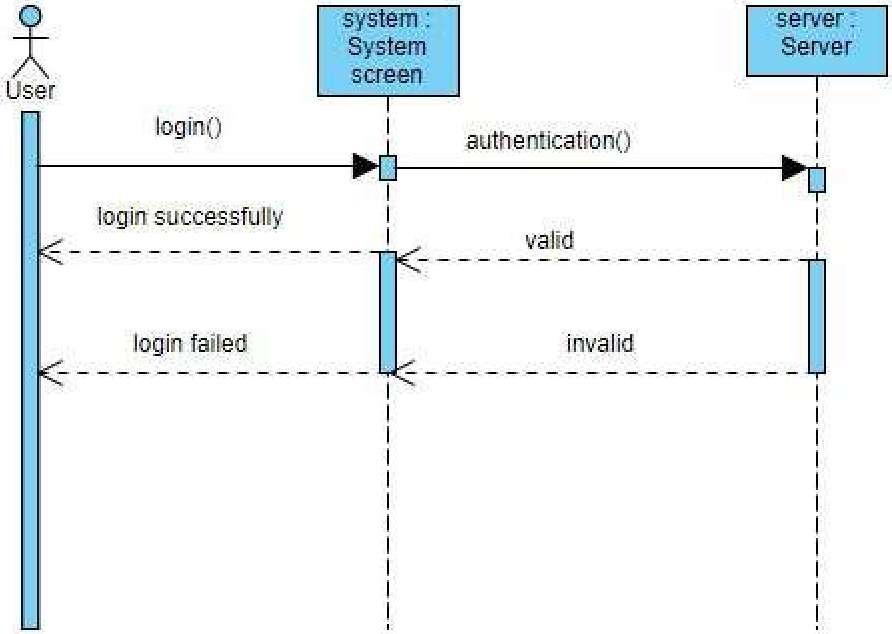
Book Catalog & Review System

Overview:

A Book Catalog & Review System is such a system where book enthusiasts and even casual readers can review and rate books as they desire. Such a system contains books of various genres and categories and users can leave their valuable reviews on such books which would then incite other users to have interest in those books thereby wide spreading these books and peeking the interest of other book enthusiasts who were maybe in search of a good read. The main purpose of the system is as such that it allows users to show the path to other users on which books are must read and which book to either avoid or leave for later. And this is done so by using this easy to use review system.

1. Login Sequence Diagram:



Promela Code for Login Sequence Diagram:

```
mtype={loginreq,authenticationreq,valid_invalid,loginsuccessful_failed};
chan chan1=[1] of {mtype};
chan chan2=[1] of {mtype};

proctype User(chan in, out)
{
do
:: in ! loginreq ;
in ? loginsuccessful_failed;
od
}

proctype System(chan in, out)
{
do
:: out ? loginreq ;
in ! authenticationreq;
in ? valid_invalid;
out ! loginsuccessful_failed;
od
}

proctype Server(chan in, out)
{
do
:: out ? authenticationreq ;
out ! valid_invalid;
od
}

init
```

```
{
run User(chan1,chan2);
run System(chan2,chan1);
run Server(chan1,chan2);
}
```

Processes(Automata) of Login:

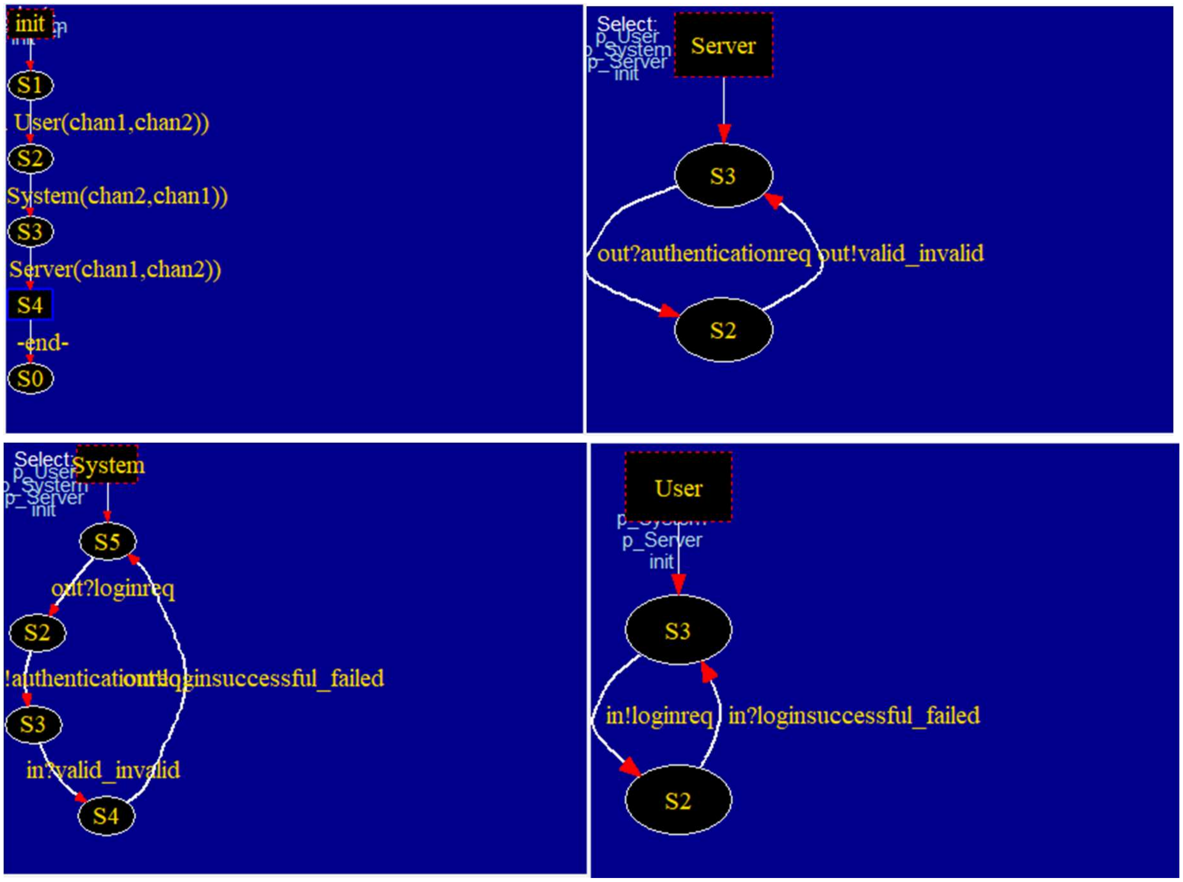


Fig: Processes(Automata) of Login

Simulation Of The Login Sequence Diagram:

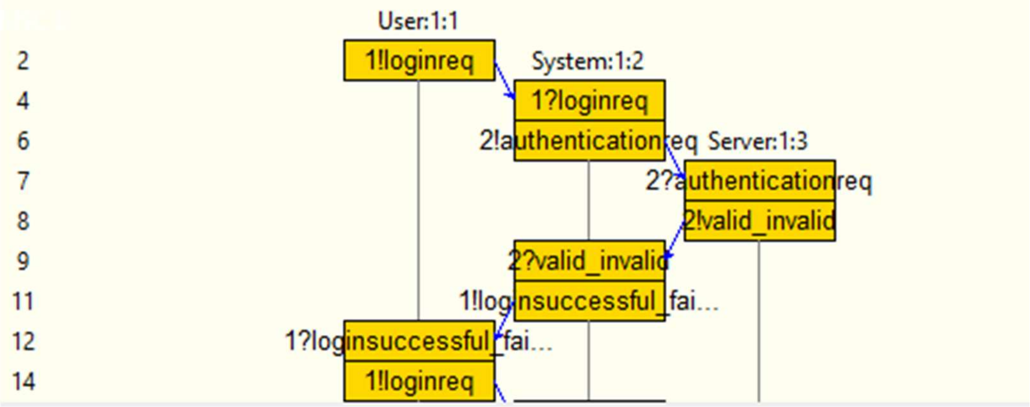
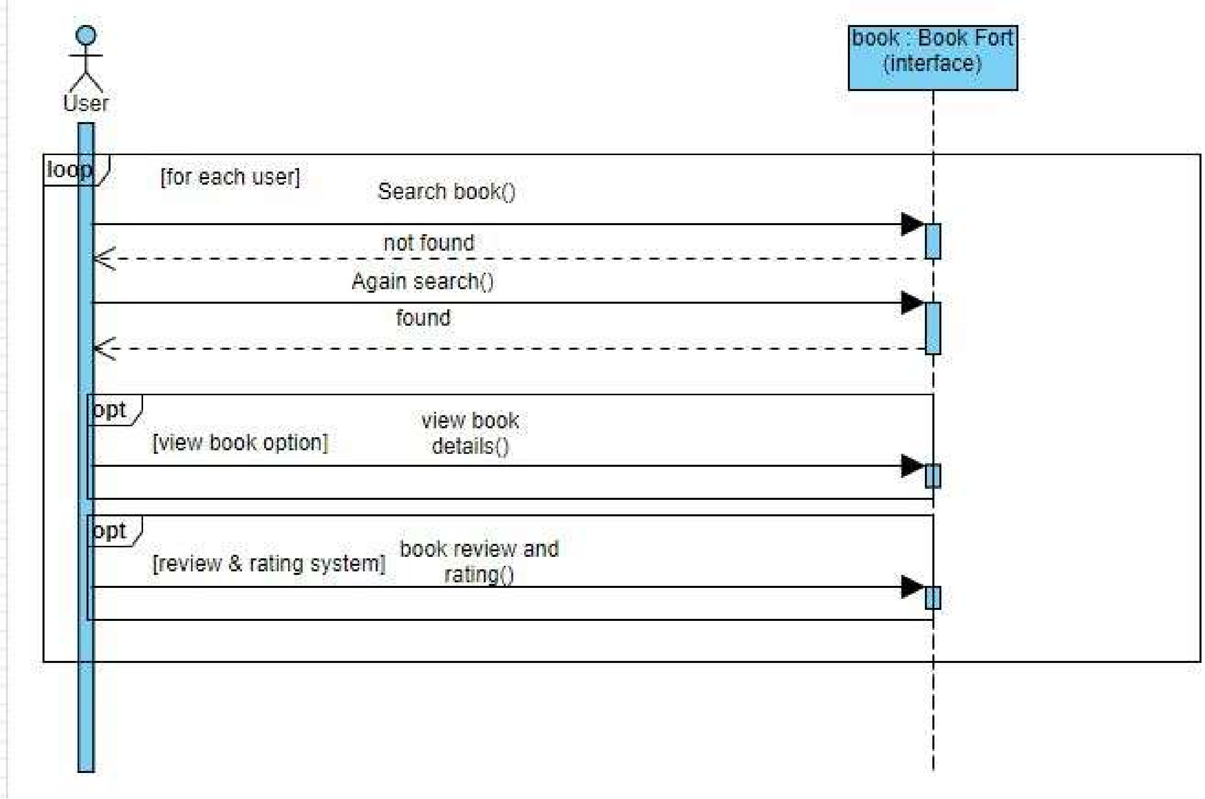


Fig: Simulation of Login

2. Book interface Sequence Diagram:



```
}
```

Promela Code for Book interface Sequence Diagram:

```
mtype={searchbook,notfound,Again_search,found,viewbookdetails,review_ratin};
chan chan1=[2] of {mtype,bit};
chan chan2=[2] of {mtype,bit};

proctype User(chan in, out)
{
bit sndbit,ackbit;
do
:: in ! searchbook,sndbit ;
out ? notfound,ackbit;
in ! Again_search,sndbit;
out ? found,ackbit;
in ! viewbookdetails,sndbit;
out ! review_rating,sndbit;
od
}

proctype Bookfort_interface(chan in, out)
{
bit recbit,sndbit;
do
:: out ? searchbook,recbit ;
in ! notfound,sndbit;
out ? Again_search,recbit;
in ! found,sndbit;
out? viewbookdetails,recbit;
in ? review_rating,recbit;
od
}
```

```
init
{
run User(chan1,chan2);
run Bookfort_interface (chan2,chan1);
}
```

Processes(Automata) of Book interface:

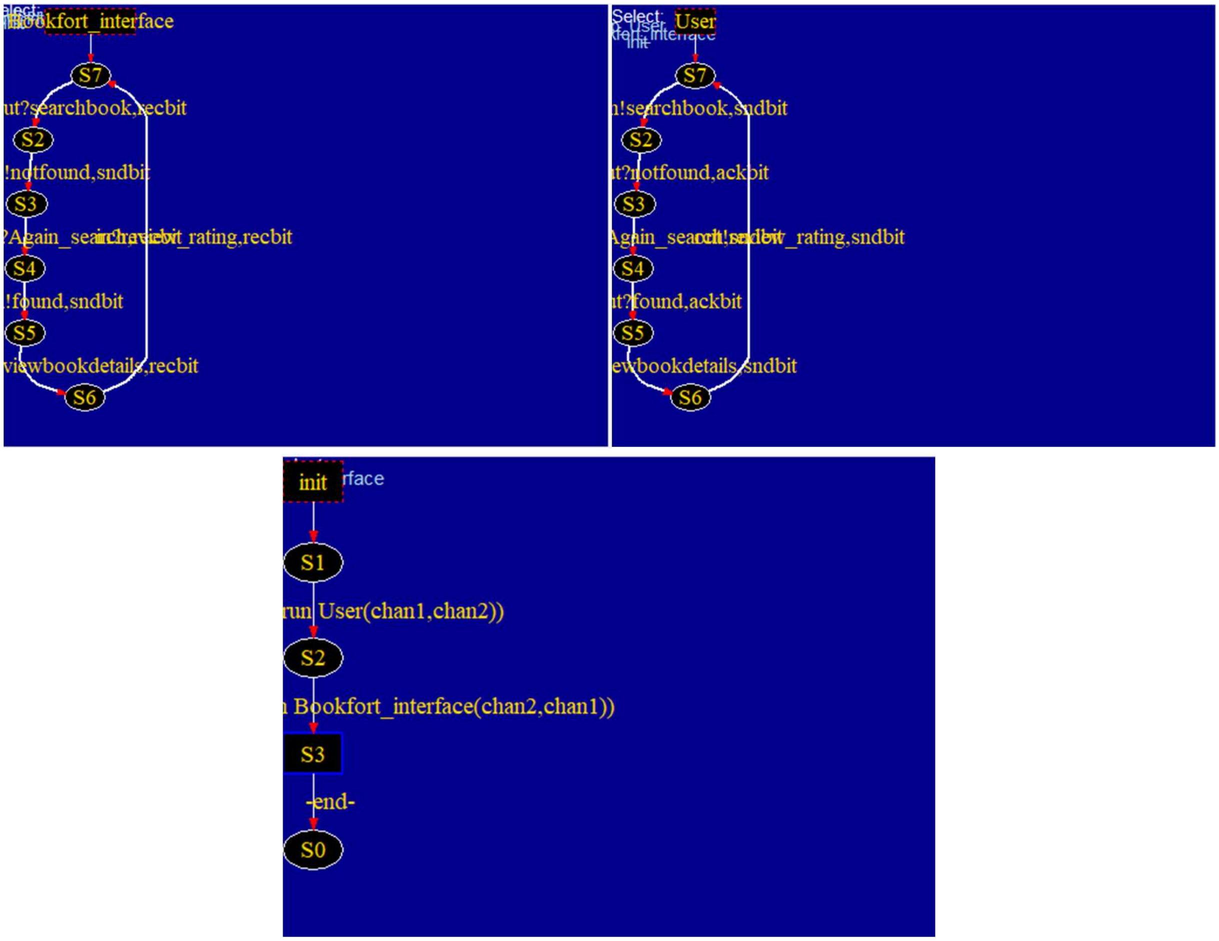


Figure: Processes(Automata) of Book interface

Simulation Of The Book interface Sequence Diagram:

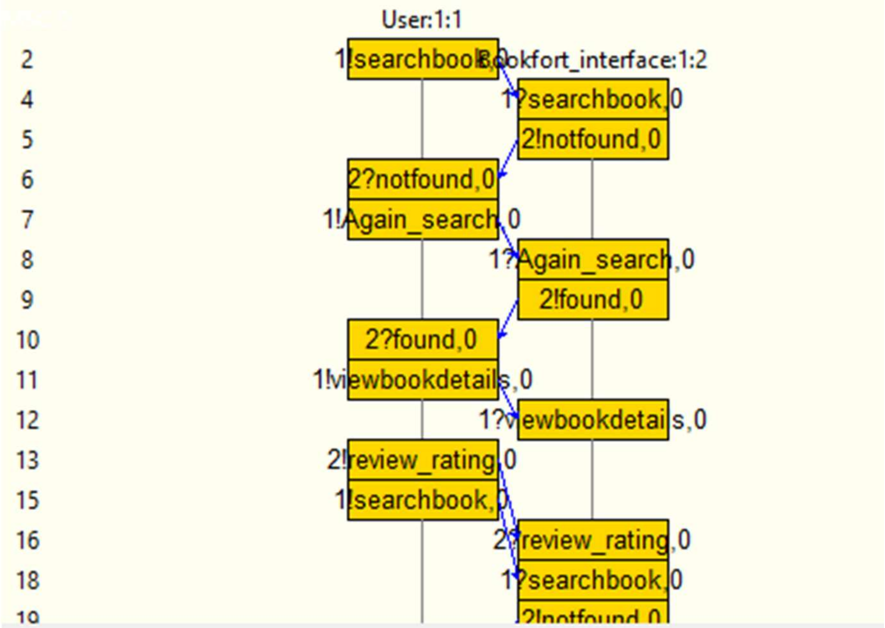
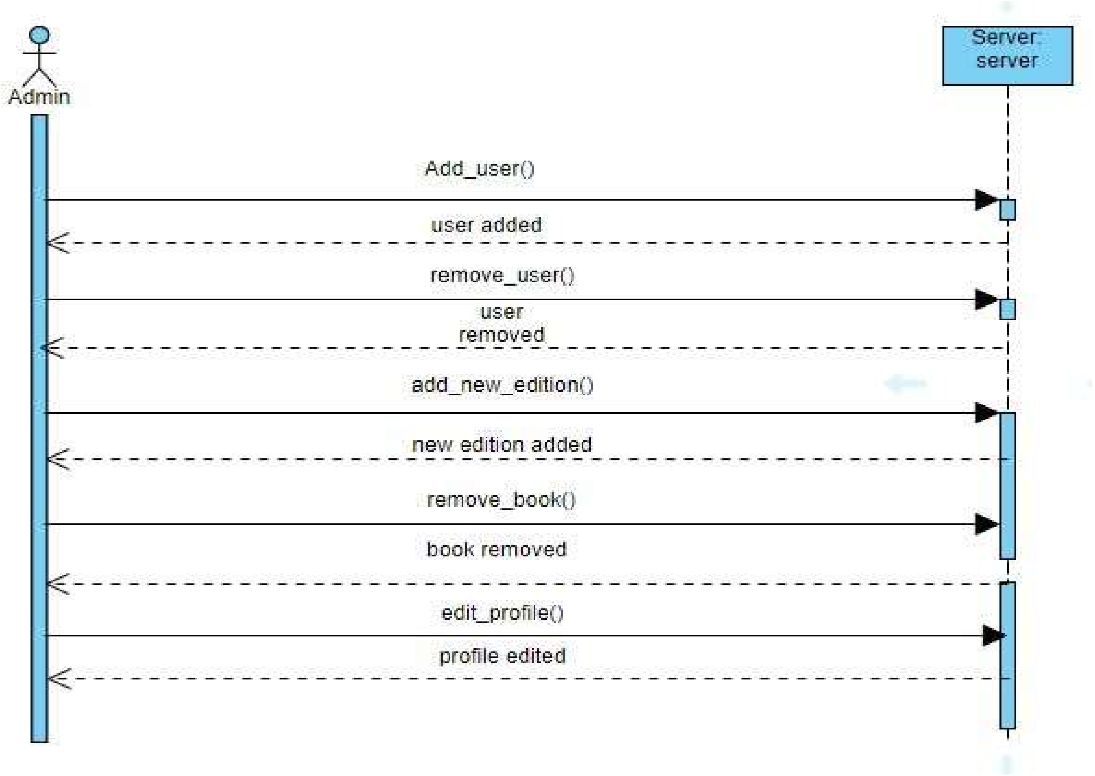


Fig: Simulation of Book interface

3. Admin Sequence Diagram:



Promela Code for Admin Sequence Diagram:

```
mtype={Adduser, user_added, remove_user, user_removed, add_new_edition,
neweditionadded, remove_book, bookremoved, edit_profile, profile_edited};

chan chan1=[2] of {mtype,bit};
chan chan2=[2] of {mtype,bit};

proctype Admin(chan in, out)
{
bit sndbit,ackbit;
do
:: in ! Adduser,sndbit ->
out ? user_added,ackbit;
in ! remove_user,sndbit;
out ? user_removed,ackbit;
in ! add_new_edition,sndbit;
out ? neweditionadded,ackbit;
in ! remove_book,sndbit ;
out ? bookremoved,ackbit ;
in ! edit_profile,sndbit;
out ? profile_edited,ackbit;
od
}

proctype Server(chan in, out)
{
bit recbit, sndbit;
do
:: out ? Adduser,recbit ->
in !  user_added,sndbit ;
out ? remove_user,recbit;
in ! user_removed,sndbit;
out ? add_new_edition,recbit ;
in ! neweditionadded,sndbit ;
out ?  remove_book,recbit;
in ! bookremoved,sndbit;
out ? edit_profile,recbit;
in ! profile_edited,sndbit;
od
}

init
{
run Admin(chan1,chan2);
run Server(chan2,chan1)
}
```

Processes(Automata) of Admin:

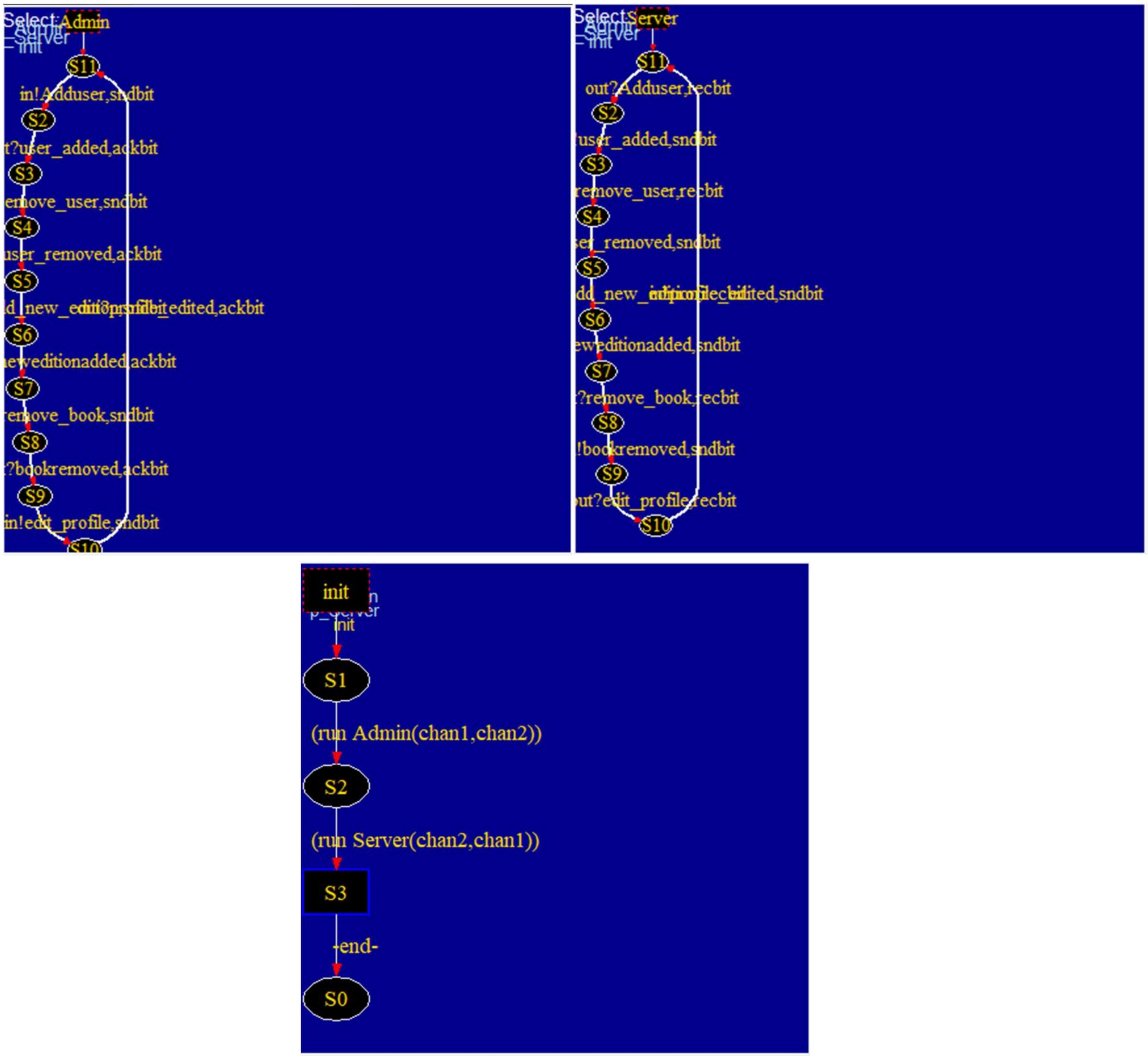


Fig: Processes(Automata) of Admin

Simulation Of Admin Sequence Diagram:

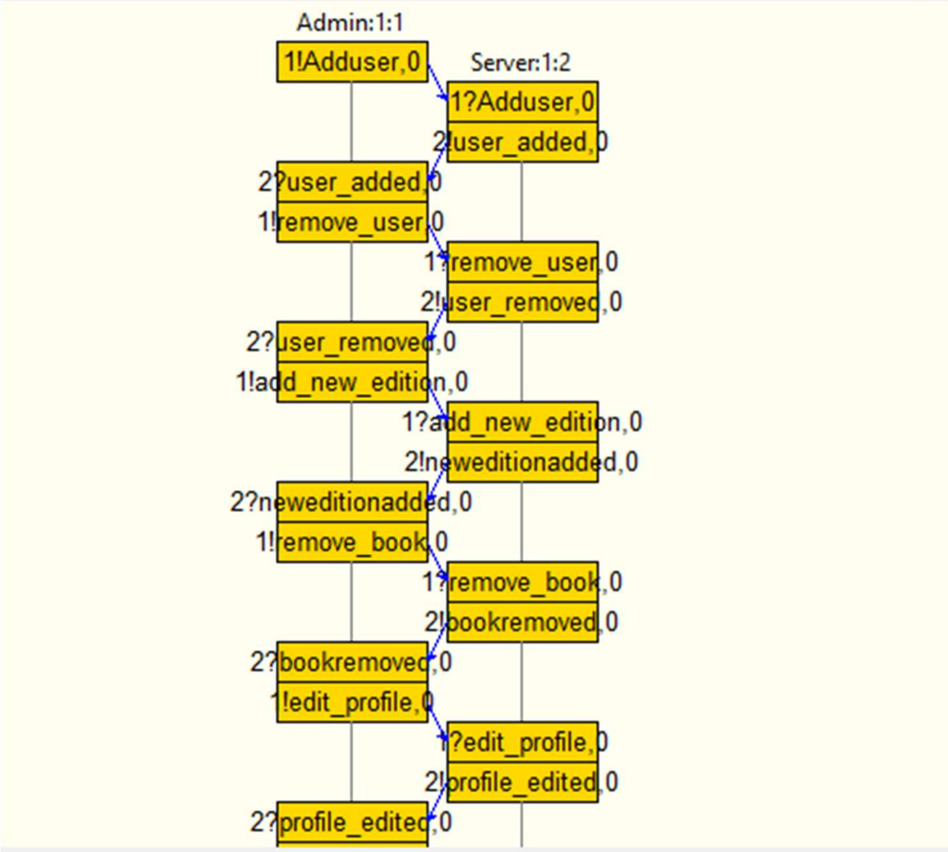


Fig: Simulation of Admin