**PROMELA Code:**

**For Update & Delete:**

1 mtype {UPDATE, UPDATE\_SUCCESSFULLY}

2 mtype {DELETE, DELETE\_SUCCESSFULLY}

3 chan toAu = [2] of {mtype,bit};

4 chan toFu = [2] of {mtype,bit};

5 chan toAd = [2] of {mtype,bit};

6 chan toFd = [2] of {mtype,bit};

7 proctype Adminu(chan in, out)

8 {

9 bit sendbit,recvbit;

10 do

11 :: out !UPDATE, sendbit ->

12 in ? UPDATE\_SUCCESSFULLY,recvbit;

13 if

14 :: recvbit == sendbit ->

15 sendbit = 1-sendbit

16 :: else

17 fi

18 od

19 }

20

21 proctype Foodu(chan in, out)

22 {

23 bit recvbit

24 do

25 :: in ? UPDATE(recvbit) ->

26 out ! UPDATE\_SUCCESSFULLY(recvbit);

27 od

28 }

29 proctype Admind(chan in, out)

30 {

31 bit sendbit,recvbit;

32 do

33 :: out !DELETE, sendbit ->

34 in ? DELETE\_SUCCESSFULLY,recvbit;

35 if

36 :: recvbit == sendbit ->

37 sendbit = 1-sendbit

38 :: else

39 fi

40 od

41 }

42

43 proctype Foodd(chan in, out)

44 {

45 bit recvbit

46 do

47 :: in ? DELETE(recvbit) ->

48 out ! DELETE\_SUCCESSFULLY(recvbit);

49 od

50 }

51 init

52 {

53 run Adminu(toAu, toFu);

54 run Foodu(toFu, toAu);

55 run Admind(toAd, toFd);

56 run Foodd(toFd, toAd);

57 }

**For Order place:**

1 mtype {SEE\_MENU,ADD\_FOOD,ORDER\_PLACE}

2

3

4 chan toS = [3] of {mtype,bit,bit};

5 chan toR = [3] of {mtype,bit,bit};

6

7 proctype Customer(chan in, out)

8 {

9 bit sendbit,recvbit;

10 do

11 :: out !SEE\_MENU, sendbit ->

12 in ? ADD\_FOOD,recvbit;

13 if

14 :: recvbit == sendbit ->

15 sendbit = 1-sendbit

16 :: else

17 fi

18 od

19 }

20 proctype Food1(chan in, out)

21 {

22 bit sendbit,recvbit;

23 do

24 :: out !ADD\_FOOD, sendbit ->

25 in ? ORDER\_PLACE,recvbit;

26 if

27 :: recvbit == sendbit ->

28 sendbit = 1-sendbit

29 :: else

30 fi

31 od

32 }

33

34 proctype Order1(chan in, out)

35 {

36 bit recvbit

37 do

38 :: in ? SEE\_MENU(recvbit) ->

39 out ! ORDER\_PLACE(recvbit);

40 od

41 }

42 init

43 {

44 run Customer(toS, toR);

45 run Food1(toS, toR);

46 run Order1(toR, toS);

47 }

**For Reservation:**

1 mtype {RESERVATION, BOOKING\_SUCCESSFULLY, ALREADY\_BOOKED}

2 chan toS = [3] of {mtype,bit,bit};

3 chan toR = [3] of {mtype,bit,bit};

4

5 proctype Customer(chan in, out)

6 {

7 bit sendbit,recvbit,elsebit;

8 do

9 :: out !RESERVATION, sendbit ->

10 in ? BOOKING\_SUCCESSFULLY,recvbit;

11 if

12 :: recvbit == sendbit ->

13 sendbit = 2-sendbit

14 :: else -> elsebit == sendbit ->

15 sendbit = 1-sendbit

16 fi

17 od

18 }

19 proctype Reserve1(chan in, out)

20 {

21 bit recvbit

22 do

23 :: in ? RESERVATION(recvbit) ->

24 out ! BOOKING\_SUCCESSFULLY(recvbit);

25 od

26 }

27 proctype Reserve2(chan in, out)

28 {

29 bit elsebit

30 do

31 :: in ? RESERVATION(elsebit) ->

32 out ! ALREADY\_BOOKED(elsebit);

33 od

34 }

35 init

36 {

37 run Customer(toS, toR);

38 run Reserve1(toR, toS);

39 run Reserve2(toR, toS);

40 }