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| --- | --- |
| Data | Messages |
| List<Order> pendingOrders;  Timer cookTimer = new Timer(0, new ActionListener() {  Public void actionPerformed(ActionEvent e){  if and Ǝ an Order o in pendingOrder ϶ o.OrderState == cooking  then o.OrderState = cooked;  o.waiter.OrderIsReady(o);  }  });  Map<String, Int> foodDictionary = TreeMap<String, Int>();  Enum State {idle, cooking}  \*\*public class Order  {  Waiter waiter;  String choice;  Int tableNumber;  Enum OrderState { pending, cooking, cooked;}  } | HeresAnOrder(order)  {  pendingOrders.add(new Order(choice, table));  } |
| Schedule | Actions |
| if State == idle and Ǝ an Order o in pendingOrder ϶ o.OrderState == pending  then CookOrder(o); | CookOrder(Order o){  DoCookOrder(); //GUI  State = cooking;  cookTimer.setDelay(foodDictionary.get(o.choice));  cookTimer.start();  } |

Cook implements ActionListener //because timer

HostAgent

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| Data | Messages |
| List<Table> tables;  List<Waiter> waiters;  List<Customers> waitingCustomers;  public class Tables //don’t make this an inner class. It’s such a pain in the ass.  {  } | IWantToEat(Customer c){  waitingCustomers.add(c);  }  TableIsClear(Table t){  t.occupiedBy = null;  } |
| Scheduler | Actions |
| if !waitingCustomer.empty() Ǝ a Table t in tables ϶ t.occupiedBy == null and Ǝ a Waiter w in waiters ϶ w.State == idle  then notifyWaiter(t, w); | notifyWaiter(Table t, Waiter w){  DoNotifyWaiter();  w.SeatAtTable(waitingCustomer.remove(0), t);  } |

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| Data | Scheduler |
| List<MyCustomer> myCustomers;  Cook cook;  Host host;  // This is to distribute the waiting customers evenly among waiters.  enum WaiterState {idle, busy;}  class MyCustomer {  Customer customer;  Table table;  Order order;  enum CustomerState {waiting, seated, readyToOrder, ordered}  } | if Ǝ a MyCustomer mc ϶ mc.CustomerState == waiting  then SeatCustomer(mc);  if Ǝ a MyCustomer mc ϶ mc.CustomerState == readyToOrder  then TakeOrder(mc); |
| Messages | Actions |
| - SeatAtTable(Customer c, Table t){  WaiterState = busy;  myCustomers.add(new MyCustomer(c, t));}  - ReadyToOrder(Customer c){ foreach MyCustomer mc in myCustomer{  if (mc == c){  WaiterState = busy;  mc.CustomerState = readyToOrder;  } }}  - HeresMyChoice(String c){ foreach MyCustomer mc in myCustomer{  if (mc == c){  WaiterState = busy;  mc.order = new Order(c, this, tableNumber);  mc.CustomerState = ordered;  } }}  - OrderIsReady(Order o){ foreach MyCustomer mc in myCustomer{  if (mc == c){  WaiterState = busy;  GiveFoodToCustomer(mc);  } }}  - ImDone(Customer c){ foreach MyCustomer mc in myCustomer{  if (mc == c){  WaiterState = busy;  CustomerLeaving(mc);  } }} | - SeatCustomer(MyCustomer mc){  mc.customer.FollowMe(new Menu());  DoSeatCustomer(); //GUI  mc.CustomerState = seated;  WaiterState = idle;}  - TakeOrder(MyCustomer mc){  DoTakeOrder();  mc.customer.WhatWouldYouLike();  WaiterState = idle;}    - GiveOrderToCook(MyCustomer mc){  DoGiveOrderToCook();  cook.HeresAnOrder(mc.order);  WaiterState = idle;}  - GiveFoodToCustomer(MyCustomer mc){  DoGiveFoodToCustomer();  mc.customer.HeresYourOrder(mc.order.choice);  WaiterState = idle;}  - CustomerLeaving(MyCustomer c){  DoCustomerLeaving();  host.TableIsClear(c.table);  WaiterState = idle;} |

Waiters

Customer

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| --- | --- |
| Data | Scheduler |
| Host host;  Waiter waiter;  String choice;  Menu menu;  Timer eatingTimer = new Timer();  enum CustomerState {DoingNothing, WaitingInRestaurant, BeingSeated, Seated, Ordering, Eating, DoneEating, Leaving};  enum CustomerEvent {none, gotHungry, followWaiter, seated, readyToOrder, ordered, doneEating, doneLeaving}; | if (state == CustomerState.*DoingNothing* && event == CustomerEvent.*gotHungry* ){  state = CustomerState .*WaitingInRestaurant*;  goToRestaurant();}  if (state == CustomerState .*WaitingInRestaurant* && event == CustomerEvent .*followWaiter* ){  state = CustomerState .*BeingSeated*;}  if (state == CustomerState .*BeingSeated* && event == CustomerEvent .*seated*){  state = CustomerState .*ReadingMenu*;  ChooseFood();}  if (state == CustomerState .Seated && event == CustomerEvent .readyToOrder){  state = CustomerState .Ordering;  CallWaiter();}  if (state == CustomerState .*Eating* && event == CustomerEvent .*doneEating*){  state = CustomerState .*Leaving*;  leaveTable();}  if (state == CustomerState .*Leaving* && event == CustomerEvent .*doneLeaving*){  state = CustomerState .*DoingNothing*;} |
| Messages | Actions |
| IsHungry(){ DoIsHungry();  CustomerEvent = gotHungry; }  FollowMe(Menu m){  menu = m;  CustomerEvent = followWaiter;  }  //Get a message from customer GUI when we reach the table to handle animation. Once we reach the table set Customer State to seated.  WhatWouldYouLike(){  TellWaiterMyChoice();  }  HeresYourOrder(String order){  if order != choice then output Complain.  CustomerState = Eating;  EatFood();  } | goToRestaurant(){  DoGoToRestaurant();  host.IWantToEat(this);  }  CallWaiter(){  DoCallWaiter(); // GUI  waiter.ReadyToOrder();  }  ChooseFood(){  readMenuTimer.start();  Timer readMenuTimer = new Timer(readingMenuTime,  Public void actionPerformed(ActionEvent e){  choice = random(menu);  CustomerEvent = readyToOrder;  }}  EatFood(){  DoEatFood(); // GUI stuff  eatTimer.start(); //eatTimer sets AgentEvent.doneEating.  }  TellWaiterMyChoice(){  waiter.HeresMyChoice(choice);  CustomerEvent = ordered;}  leaveTable(){  DoLeaveTable(); //GUI  CustomerState = leaving;  //After you have left set AgentEvent.doneLeaving = true;  waiter.ImDone(this);  } |