Colored Petri Net of Dinning67
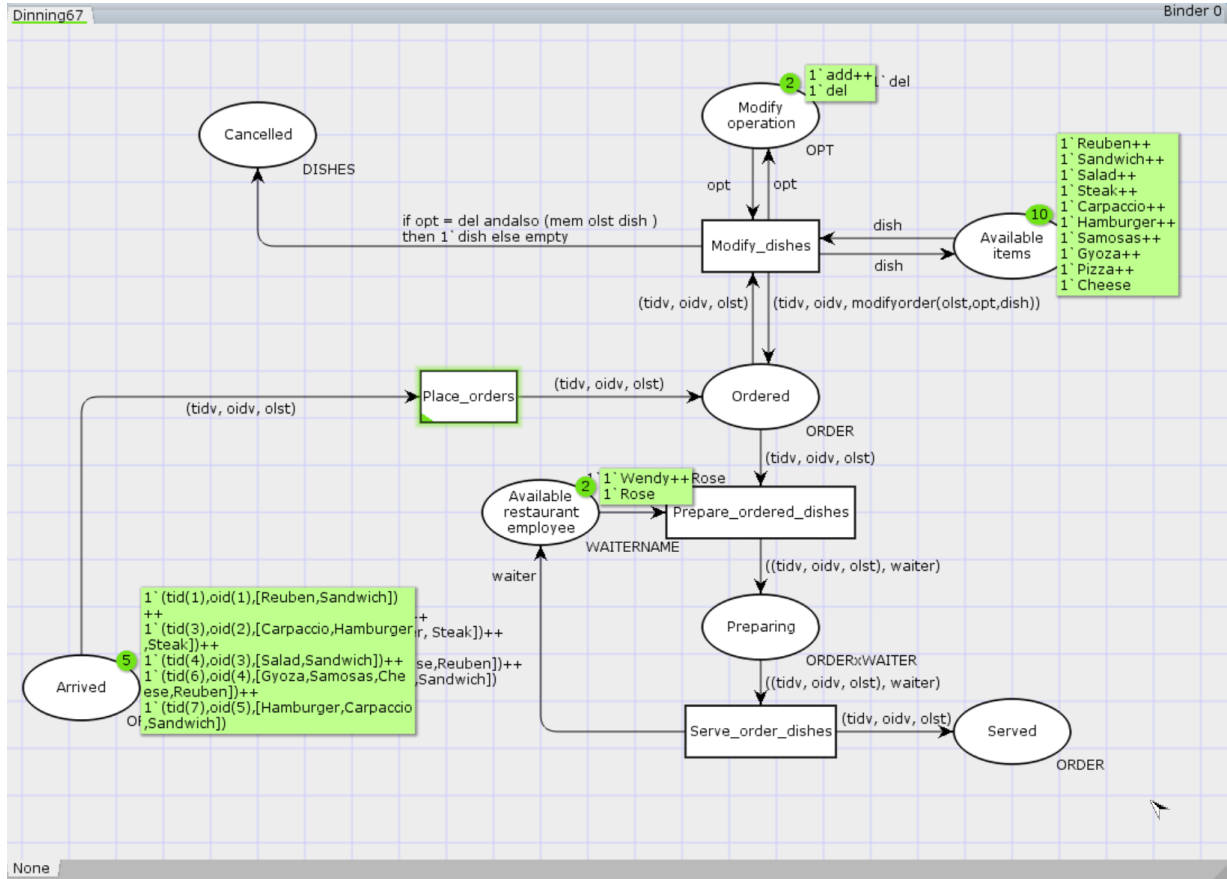
Group

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CPN Graph

Mathematic representation

$C = (P, T, I, O)$

$P = \{Arrived, Ordered, Cancelled, Preparing, Served, Modify\_Operation, Available\_items, Available\_restaurant\_employee\}$

$T = \{Place\_orders, Modify\_dishes, Prepare\_ordered\_dishes, Serve\_ordered\_dishes\}$

$I(Place\_orders) = \{Arrived\}$
$O(Place\_orders) = \{Ordered\}$

$I(Modify\_dishes) = \{Ordered, Modify\_operation, Available\_items\}$
$O(Modify\_dishes) = \{Ordered, Modify\_operation, Available\_items, Cancelled\}$

$I(Prepare\_ordered\_dishes) = \{Ordered, Available\_restaurant\_employee\}$
$O(Prepare\_ordered\_dishes) = \{Preparing\}$

$I(Serve\_ordered\_dishes) = \{Preparing\}$
$O(Serve\_ordered\_dishes) = \{Available\_restaurant\_employee, Served\}$

Initial marking is $\mu = \{5, 0, 0, 0, 0, 2, 10, 2\}$

Definition of all colsets

```
colset OPT = with add | del;
colset TABLEID = index tid with 1..10;
colset ORDERID = index oid with 1..20;
colset DISHES = with Reuben
| Sandwich
| Salad
| Steak
| Carpaccio
| Hamburger
| Samosas
| Gyoza
| Pizza
| Cheese;
colset QUANTITY = int;
colset ORDERITEM = product DISHES * QUANTITY;
colset ORDERITEMLST = list  DISHES;
colset ORDER = product TABLEID * ORDERID * ORDERITEMLST;
colset WAITERNAME = with Wendy | Rose;
colset ORDERxWAITER = product ORDER * WAITERNAME;
var tidv: TABLEID;
var oidv: ORDERID;
var dish: DISHES;
var olst: ORDERITEMLST;
var opt: OPT;
var waiter: WAITERNAME;
fun modifyorder(olst:ORDERITEMLST,opt:OPT,dish:DISHES) =
(case opt of
del => if (length olst)>0
then (rm dish olst)
else nil
| add => ins_new olst dish)
```

Explaination

There are 2 employee who can serve orders of customers in the Dinning67 restaurant and 5 arrived customers with initial orders. They can modify their orders when the order is ordered by adding or deleting items. There are 10 available dishes.