

# Compte Rendu TP4

## Question1

```
getData(TailleEquipes,NbEquipes,CapaBateaux,NbBateaux,NbConf):-
    TailleEquipes = [(5,5,2,1),
    NbEquipes is 4,
    CapaBateaux = [(7,6,5),
    NbBateaux is 3,
    NbConf is 3.
```

## Question2

```
defineVars(T,NbEquipes,NbConf,NbBateaux):-
    dim(T,[NbEquipes,NbConf]),
    T#::1..NbBateaux.
```

## Question3

```
getVarList(T,List):-
    dim(T,Dim),
    D1 is Dim[1],
    D2 is Dim[2,1],
    (multifor([J,I],1,[D2,D1]),
    param(T),
    fromto([],In,Out,List2)
    do
        Var is T[I,J],
        Out = [Var|In]
    ),
    reverse(List2,List).
```

## Test

```
[eclipse 25]: defineVars(T,4,3,3),getVarList(T,List).
```

```
T = [([](_443{1 .. 3}, _443, _443), [( _485{1 .. 3}, _485, _485), [( _527{1 .. 3}, _527, _527), [( _569{1 .. 3}, _569, _569))
List = [_569{1 .. 3}, _527{1 .. 3}, _485{1 .. 3}, _443{1 .. 3}]
Yes (0.00s cpu)
```

## Question4

```
solve(T):-
    getData(TailleEquipes,NbEquipes,CapaBateaux,NbBateaux,NbConf),
    defineVars(T,NbEquipes,NbConf,NbBateaux),
    getVarList(T,L),
    labeling(L).
```

## Test

```
[eclipse 72]: solve(T).
```

```
T = [([](1, 1, 1), [(1, 1, 1), [(1, 1, 1), [(1, 1, 1)
Yes (0.00s cpu, solution 1, maybe more) ? ;
```

```
T = [([](1, 1, 1), [(1, 1, 1), [(1, 1, 1), [(1, 1, 2)
Yes (0.00s cpu, solution 2, maybe more) ? ;
```

```
T = [([](1, 1, 1), [(1, 1, 1), [(1, 1, 1), [(1, 1, 3)
Yes (0.00s cpu, solution 3, maybe more) ? ;
```

```

T = []([](1, 1, 1), [](1, 1, 1), [](1, 1, 2), [](1, 1, 1))
Yes (0.00s cpu, solution 4, maybe more) ? ;

T = []([](1, 1, 1), [](1, 1, 1), [](1, 1, 2), [](1, 1, 2))
Yes (0.00s cpu, solution 5, maybe more) ? ;

T = []([](1, 1, 1), [](1, 1, 1), [](1, 1, 2), [](1, 1, 3))
.
.
.
.

```

## Question5

```

pasMemeBateau(T):-
  (foreacharg(Line,T)
   do
    alldifferent(Line)
  ).
/*

```

## Test

```

[eclipse 112]: solve(T).

T = []([](1, 2, 3), [](1, 2, 3), [](1, 2, 3), [](1, 2, 3))
Yes (0.00s cpu, solution 1, maybe more) ? ;

T = []([](1, 2, 3), [](1, 2, 3), [](1, 2, 3), [](1, 3, 2))
Yes (0.00s cpu, solution 2, maybe more) ? ;

T = []([](1, 2, 3), [](1, 2, 3), [](1, 3, 2), [](1, 2, 3))
Yes (0.00s cpu, solution 3, maybe more) ? ;

T = []([](1, 2, 3), [](1, 2, 3), [](1, 3, 2), [](1, 3, 2))
Yes (0.00s cpu, solution 4, maybe more) ? ;

```

## Question6

```

pasMemePartenaires(T,NbEquipes,NbConf):-
  (for(I1,1,NbConf-1),
   param(T,NbConf,NbEquipes)
   do
    (for(I2,I1+1,NbConf),
     param(I1,NbConf,NbEquipes,T)
     do
      (for(J1,1,NbEquipes-1),
       param(I1,I2,NbConf,NbEquipes,T)
       do
        (for(J2,J1+1,NbEquipes),
         param(I1,I2,J1,NbConf,NbEquipes,T)
         do
          (T[J1,I1]#T[J2,I1]) => (T[J1,I2] #\= T[J2,I2])
        )
      )
    )
  ).

```

## Question7

```

capaBateaux(T,TailleEquipes,NbEquipes,CapaBateaux,NbBateaux,NbConf):-
  (for(B,1,NbBateaux),
   param(T,TailleEquipes,NbEquipes,CapaBateaux,NbConf)
   do
    (for(J,1,NbConf),
     param(T,B,TailleEquipes,CapaBateaux,NbEquipes)
     do
      equipesSurBateau(T,B,J,NbEquipes,Liste),
      sum_list(Liste>Total),
      Capa is CapaBateaux[B],
      Total#= Res = Then
    )
  ).

```

```
        ; Res = Else
        ).

sum_list([], 0).
sum_list([H|T], Sum) :-
    sum_list(T, Rest),
    Sum is H + Rest.
```

## Test

```
[eclipse 74]: solve(T).

No (0.00s cpu)
```

Nous ne savons pas pourquoi ce code semble marcher morceau par morceau mais ne trouve pas de solution valide au problème