

UPMC/Licence/Info/2I013
Rushdroid
Modèle – compléments de spécification

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1 Interfaces

1.1 IPosition

```
package android.rushdroid.model;
```

```
public interface IPosition
```

```
    int getCol();  
    int getLig();  
    Position addCol(int d);  
    Position addLig(int d);
```

1.2 IPiece

```
package android.rushdroid.model;
```

```
public interface IPiece
```

```
    public int getId();  
    public Direction getOrientation();  
    public int getSize();  
    public Position getPos();  
    public void setPos(Position pos);
```

1.3 IGrid

```
package android.rushdroid.model;
```

```
public interface IGrid
```

```
public boolean isEmpty(Position pos);
public int get(Position pos);
public void set(Position pos, int id);
public void unset(Position pos);
```

1.4 IModel

```
package android.rushdroid.model;

public interface IModel

    public int getIdByPos(Position pos);
    public Direction getOrientation(int id);
    public int getLig(int id);
    public int getCol(int id);
    public boolean endOfGame();
    public void moveForward(int id);
    public void moveBackward(int id);
```

2 Propriétés attendues

2.1 Position

Pour tout col:int, lig:int, pour tout d:int,

```
(new Position(col,lig)).getCol() == col
(new Position(col,lig)).getLig() == lig
(new Position(col,lig)).addCol(d).getCol() == col+d
(new Position(col,lig)).addCol(d).getLig() == lig
(new Position(col,lig)).addLig(d).getCol() == col
(new Position(col,lig)).addLig(d).getLig() == lig+d
```

2.2 Piece

Pour tout id:int, size:int, dir:Direction, ncol:int, nlig:int

```
(new Piece(id, size, dir, nlig, ncol)).getId() == id
(new Piece(id, size, dir, nlig, ncol)).getSize() == size
(new Piece(id, size, dir, nlig, ncol)).getOrientation() == dir
(new Piece(id, size, dir, nlig, ncol)).getPos().getCol() == ncol
(new Piece(id, size, dir, nlig, ncol)).getPos().getLig() == nlig
```

Soit piece = new Piece(id, size, dir, nlig, ncol), pour tout newPos:Position,
après piece.setPos(newPos),

```
piece.getPos().getCol() == newPos.getCol()
piece.getPos().getLig() == newPos.getLig()
```

2.3 Grid

Soit `grid = new Grid()`.

Pour tout `pos:Position`

```
grid.isEmpty(pos) == true
```

Pour tout `pos:Position, id:int`,
après `grid.set(pos, id)`,

```
grid.get(pos) == id
```

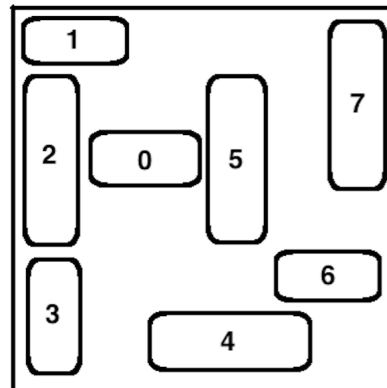
après `grid.unset(pos)`,

```
grid.isEmpty(pos) == true
```

Remarque sous spécification de `(new Grid()).get(pos)`

2.4 Model

La grille par défaut : configuration initiale



Soit `m = new Model()`

```
m.endOfGame() == false
```

```
m.getIdByPos(new Position(0,0)) == 1
```

```
m.getSize(1) == 2
```

```
m.getOrientation(1) == Direction.HORIZONTAL
```

```
m.getCol(1) == 0
```

```
m.getLig(1) == 0
```

```

m.getIdByPos(new Position(0,1)) == 2
m.getSize(2) == 3
m.getOrientation(2) == Direction.VERTICAL
m.getCol(2) == 0
m.getLig(2) == 1

m.getIdByPos(new Position(0,4)) == 3
m.getSize(1) == 2
m.getOrientation(1) == Direction.VERTICAL
m.getCol(1) == 0
m.getLig(1) == 4

m.getIdByPos(new Position(1,2)) == 0
m.getSize(0) == 2
m.getOrientation(0) == Direction.HORIZONTAL
m.getCol(0) == 1
m.getLig(0) == 2

m.getIdByPos(new Position(2,5)) == 4
m.getSize(4) == 3
m.getOrientation(4) == Direction.HORIZONTAL
m.getCol(4) == 2
m.getLig(4) == 5

m.getIdByPos(new Position(3,1)) == 5
m.getSize(5) == 2
m.getOrientation(5) == Direction.VERTICAL
m.getCol(5) == 3
m.getLig(5) == 1

m.getIdByPos(new Position(4,4)) == 6
m.getSize(6) == 2
m.getOrientation(6) == Direction.HORIZONTAL
m.getCol(6) == 4
m.getLig(6) == 4

m.getIdByPos(new Position(5,0)) == 7
m.getSize(3) == 3
m.getOrientation(3) == Direction.VERTICAL
m.getCol(7) == 5
m.getLig(7) == 0

```

Les mouvements

Mouvements impossibles :

Après m.moveBackward(1) :

```
(m.getCol(1) == 0) && (m.getLig(1) == 0)
```

Après m.moveForward(6) :

```
(m.getCol(6) == 4) && (m.getLig(6) == 4)
```

Après m.moveBackward(7) :

```

(m.getCol(7) == 5) && (m.getLig(7) == 0)
Après m.moveForward(3) :
(m.getCol(3) == 0) && (m.getLig(3) == 4)
Après m.moveBackward(2) :
(m.getCol(2) == 0) && (m.getLig(2) == 1)
Après m.moveForward(2) :
(m.getCol(2) == 0) && (m.getLig(2) == 1)
Après m.moveBackward(0) :
(m.getCol(0) == 1) && (m.getLig(0) == 2)
Après m.moveForward(0) :
(m.getCol(0) == 1) && (m.getLig(0) == 2)
Mouvements gagnants :
Après m.moveForward(1) :
(m.getCol(1) == 1) && (m.getLig(1) == 0)
Après m.moveBackward(2) :
(m.getCol(2) == 0) && (m.getLig(2) == 0)
Après m.moveBackward(3) :
(m.getCol(3) == 0) && (m.getLig(3) == 3)
Après m.moveBackward(4); m.moveBackward(4) :
(m.getCol(4) == 0) && (m.getLig(4) == 5)
Après m.moveBackward(6); m.moveBackward(6); m.moveBackward(6) :
(m.getCol(6) == 1) && (m.getLig(6) == 4)
Après m.moveForward(5); m.moveForward(5) :
(m.getCol(5) == 3) && (m.getLig(5) == 3)
Après m.moveForward(7); m.moveForward(7); m.moveForward(7) :
(m.getCol(7) == 5) && (m.getLig(7) == 3)
Après m.moveForward(0); m.moveForward(0); m.moveForward(0) :
(m.getCol(0) == 4) && (m.getLig(0) == 2) && (m.endOfGame() == true)

```