Racing Cars Game

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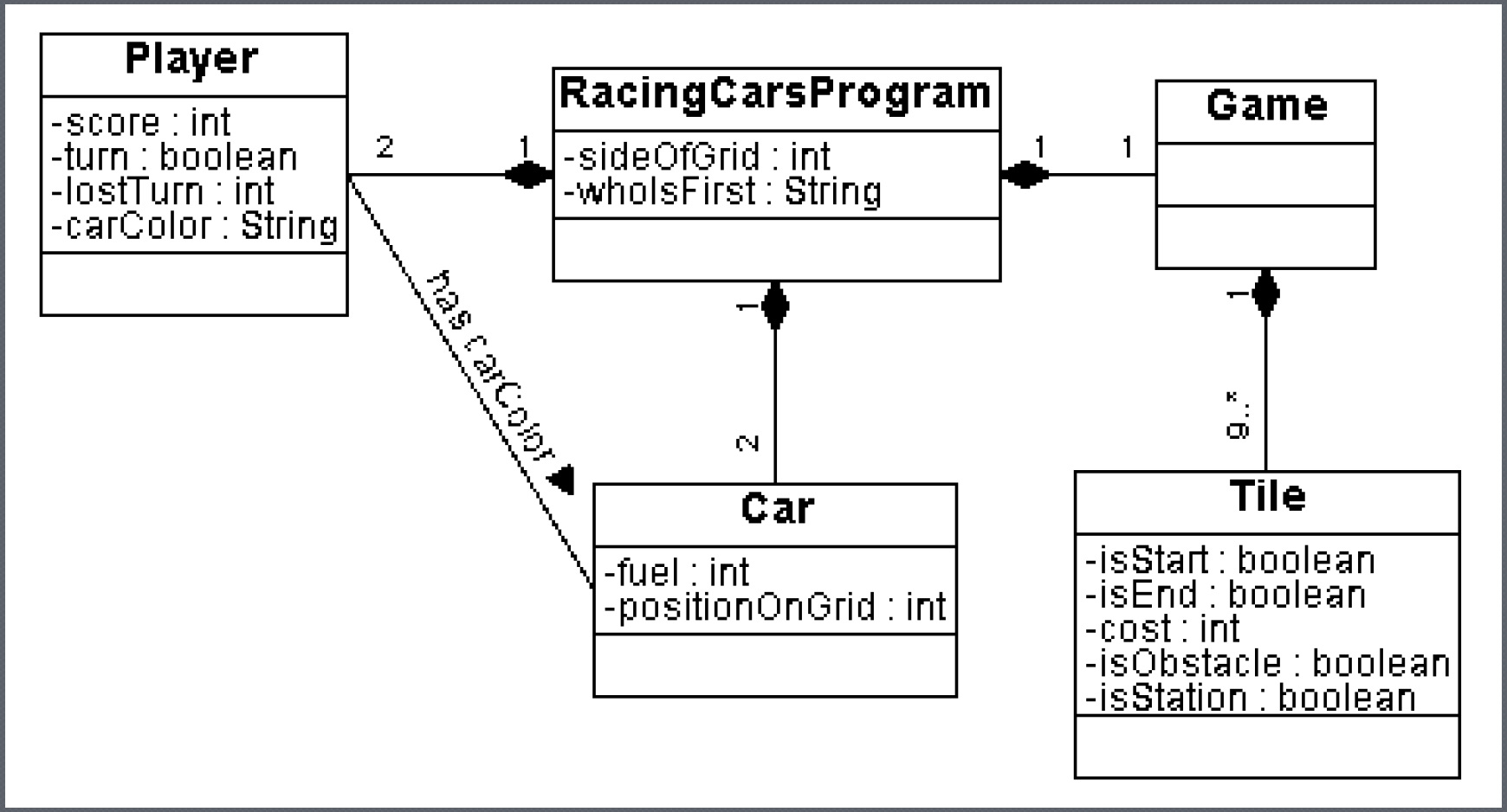
The UML Conceptual Class Diagram



How the game works
At the beginning

- Prompt for the size of the side of the grid

```
R:\AAA>java RacingCarsProgram
Give me size of the side
of the grid:
```

How the game works
At the beginning

- Generation of random grid

```
5
Random Grid [ [Tile [isStart=true, isEnd=false, cost=0, isObstacle=false, isStation=false], Tile [is
Start=false, isEnd=false, cost=0, isObstacle=true, isStation=false], Tile [isStart=false, isEnd=fals
e, cost=2, isObstacle=false, isStation=false], Tile [isStart=false, isEnd=false, cost=0, isObstacle=
false, isStation=true], Tile [isStart=false, isEnd=false, cost=3, isObstacle=false, isStation=false]
, Tile [isStart=false, isEnd=false, cost=3, isObstacle=false, isStation=false], Tile [isStart=false,
 isEnd=false, cost=1, isObstacle=false, isStation=false], Tile [isStart=false, isEnd=false, cost=1,
isObstacle=false, isStation=false], Tile [isStart=false, isEnd=false, cost=2, isObstacle=false, isSt
ation=false], Tile [isStart=false, isEnd=false, cost=2, isObstacle=false, isStation=false], Tile [is
Start=false, isEnd=false, cost=0, isObstacle=true, isStation=false], Tile [isStart=false, isEnd=fals
e, cost=0, isObstacle=true, isStation=false], Tile [isStart=false, isEnd=false, cost=3, isObstacle=f
alse, isStation=false], Tile [isStart=false, isEnd=false, cost=1, isObstacle=false, isStation=false]
, Tile [isStart=false, isEnd=false, cost=1, isObstacle=false, isStation=false], Tile [isStart=false,
 isEnd=false, cost=0, isObstacle=true, isStation=false], Tile [isStart=false, isEnd=false, cost=0, i
sObstacle=true, isStation=false], Tile [isStart=false, isEnd=false, cost=0, isObstacle=false, isStat
ion=true], Tile [isStart=false, isEnd=false, cost=0, isObstacle=false, isStation=true], Tile [isStar
t=false, isEnd=false, cost=2, isObstacle=false, isStation=false], Tile [isStart=false, isEnd=false,
cost=2, isObstacle=false, isStation=false], Tile [isStart=false, isEnd=false, cost=0, isObstacle=fal
se, isStation=true], Tile [isStart=false, isEnd=false, cost=2, isObstacle=false, isStation=false], T
ile [isStart=false, isEnd=false, cost=0, isObstacle=true, isStation=false], Tile [isStart=false, isE
nd=true, cost=0, isObstacle=false, isStation=false]] ]
```

How the game works
Just before we start

- Decision of who plays first with die roll

```
Car [fuel=120, positionOnGrid=0]
Player [score=0, turn=false, lostTurn=-1, carColor=Red]
Car [fuel=120, positionOnGrid=0]
Player [score=0, turn=false, lostTurn=-1, carColor=Blue]
Red starts first(They rolled 5)
------GAME STARTS------
```

How the game works
Game starts!

- The flow of the game

```
------GAME STARTS------
Car [fuel=119, positionOnGrid=6]
Player [score=0, turn=false, lostTurn=-1, carColor=Red]
Tile [isStart=false, isEnd=false, cost=1, isObstacle=false, isStation=false]
Blue rolled 3
Car [fuel=120, positionOnGrid=3]
Player [score=0, turn=true, lostTurn=-1, carColor=Blue]
Tile [isStart=false, isEnd=false, cost=0, isObstacle=false, isStation=true]
Red rolled 2
Car [fuel=117, positionOnGrid=8]
Player [score=0, turn=true, lostTurn=-1, carColor=Red]
Tile [isStart=false, isEnd=false, cost=2, isObstacle=false, isStation=false]
Blue rolled 4
Car [fuel=119, positionOnGrid=7]
Player [score=0, turn=true, lostTurn=-1, carColor=Blue]
Tile [isStart=false, isEnd=false, cost=1, isObstacle=false, isStation=false]
Red rolled 2
Car [fuel=117, positionOnGrid=0]
Player [score=0, turn=true, lostTurn=-1, carColor=Red]
Tile [isStart=true, isEnd=false, cost=0, isObstacle=false, isStation=false]
```

How the game works
Out of fuel

- Prompts and options

```
----------------------------------------
You ran out of fuel Blue. You can choose to:
1.Skip up to 6 turns, gaining 20 fuel with each skip
2.Go to start and gain random amount of fuel
1
```

```
----------------------------------------
You ran out of fuel Blue. You can choose to:
1.Skip up to 6 turns, gaining 20 fuel with each skip
2.Go to start and gain rando■ a■ount of fuel
1
How ■any turns do you want to skip?
9000
How ■any turns do you want to skip?
```

How the game works At the End

- Winner and info

```
------END OF GAME------
Car [fuel=101, positionOnGrid=25]
Player [score=0, turn=true, lostTurn=-1, carColor=Red]
Car [fuel=103, positionOnGrid=0]
Player [score=0, turn=false, lostTurn=-1, carColor=Blue]

------------------------------
Red finished!
Scores:
Red: 101
Blue: 103
```

Difficulties

Development is tough with time ticking

No GUI

I was especially interested in making the game function as it should have under random map generation conditions. This took much time off the project in the backend, eliminating the possibility of a front end in time.

```
Car [fuel=89, positionOnGrid=48]
Player [score=0, turn=true, lostTurn=-1, carColor=Red]
Tile [isStart=false, isEnd=true, cost=0, isObstacle=false, isStation=false]
Blue rolled 3
Car [fuel=92, positionOnGrid=34]
Player [score=0, turn=true, lostTurn=-1, carColor=Blue]
Tile [isStart=false, isEnd=false, cost=0, isObstacle=false, isStation=true]
Red rolled 3
------END OF GAME------
Car [fuel=89, positionOnGrid=49]
Player [score=0, turn=true, lostTurn=-1, carColor=Red]
Car [fuel=92, positionOnGrid=34]
Player [score=0, turn=false, lostTurn=-1, carColor=Blue]
```

Ending die throw

A very special but tricky move

```
R:\AAA>java RacingCarsProgram
Give me size of the side
of the grid:
0
1
2
5
Random Grid [ [Tile [isStart=true,
```

Players' choice

They'd better not have it ☺
People mess up their inputs more strategically than playing the game

Thank you
for your
time