

Exercise: The Wine Trader

A wine trader has a barrel that is full of wine and two empty buckets. The first bucket has a volume of 3 litres and the second bucket has a volume of 5 litres. Now the trader wants to fill the second bucket with exactly 4 litres of wine. In order to do this, the following operations are permitted:

1. A bucket can be filled completely with wine from the barrel.
2. A bucket can be emptied completely into the barrel.
3. The content of one bucket A can be filled into another bucket B . There are two cases:
 - (a) If there is enough room in the bucket B , the bucket A is emptied completely.
 - (b) If there is not enough room in the bucket B , the bucket B is filled completely and the rest of the wine remains in the bucket A .

Your task is to implement a SETL2 program that shows how the first bucket can be filled with exactly 4 litres of wine. I have prepared a file that can be found at:

<http://www.ba-stuttgart.de/~stroetma/SETL2/wine-trader-frame.stl>

Your task is to fill the missing gaps in this program.