Project 2 - Warehousing

Kit building

- Building kits from an order
- Each kit is custom-assembled
- There is a list of parts that go into a kit
  - The “order” for that kit

ORDER1 : Kit 1 – Birdhouse
1: Part 100 - Base
2: Part 967 – Left Wall
3: Part 963 – Left Wall Screw
4: Part 964 – Left Wall Bolt
5: Part 958 – Right Wall
6: Part 303 – Bracket
7: Part 959 – Back Wall
8: Part 958 – Front Wall
…

Your Workbench

+Gain: $0.30
- Cost: $0.10
Net: $0.00

ORDER1 : Kit 1 – Birdhouse
1: Part 100 - Base
2: Part 967 – Left Wall
3: Part 963 – Left Wall Screw
4: Part 964 – Left Wall Bolt
5: Part 958 – Right Wall
6: Part 303 – Bracket
7: Part 959 – Back Wall
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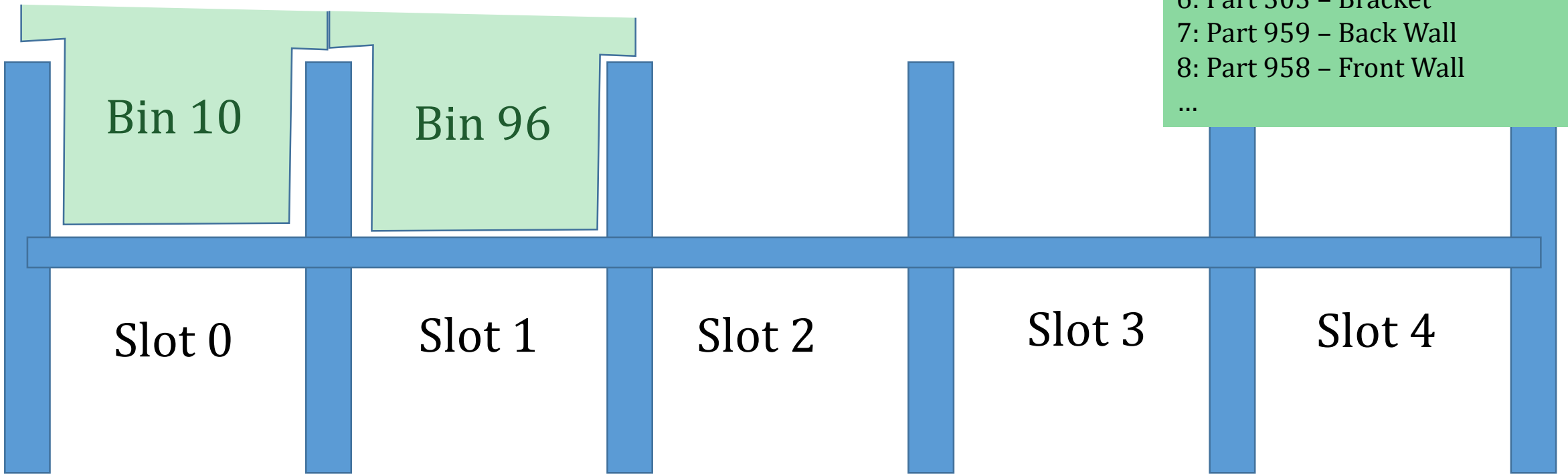
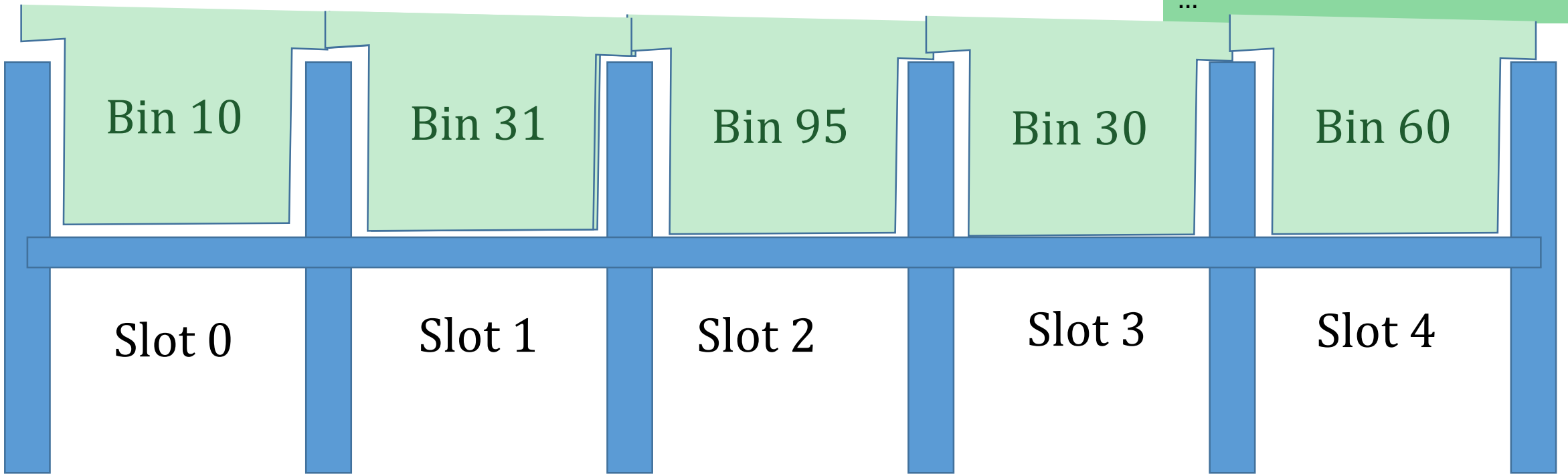
…



Your Workbench

ORDER1 : Kit 1 – Birdhouse
…
20: Part 307 – Front left screw
21: Part 308 – Front right screw
22: Part 309 – Back left screw
23: Part 310 – Back right screw
…



Warehouse Interface: Orders

- int openOrder(char * orderFile)
  - Opens an order file (e.g. order1.txt)
  - Returns 1 (true) if it worked, 0 if not
- int nextPartNumber()
  - Returns the part number of the next part in the order
- int fetchNextPart()
  - Gets the next part number from one of the bins on the bench
  - Then reads the next part number – returns true (1) if there is another
- void closeOder()
  - Closes the order file and calculates profit

Warehouse Interface: Workbench

- void fetchBin(int bin, int slot)
  - If there is already a bin in the specified slot, return it
  - Fetch the specified bin, and put it in the (now empty) slot
- int binInSlot(int slot)
  - Returns the bin number of the bin in the specified slot (-1 if empty)

Challenge

- Don't return a bin that you are going to need soon!
  - if you do, you have to pay for sending it back, and then getting it again
- Don't know if you will need that bin again soon!
  - No "look-ahead" to see what parts in the order you are going to need
- Only know one thing about orders:

"Part numbers tend to be sequential, but when the sequence is not followed, there is a high probability that the next part number showed up recently on the order."