

Bin Packing

- ✓ There are objects with varying size and bins with equal capacity.
- ✓ Goal is to pack the items in smallest number of bins with minimum wastage of space.

Three Strategies

➤ ***First Fit***

- Keep the items in the order in which they are given, pack them one at a time.
- Keep the bins in order also
- Take one item, check each bin in order, until you find one room in which it can be placed
- First come first serve strategy
- Quick and easy
- Does not usually lead to an optimal solution

➤ ***Best Fit***

- Keep the items in the order in which they are given, pack them one at a time.
- Place each item into a bin that is the “best fit”, ie. The bin which has the least capacity remaining, but still has the enough space to fit the item
- Best solution among the three strategies
- But difficult to perform if number of items increases

➤ ***First Fit Decreasing***

- First sort the items in descending manner
- Then Apply First Fit strategy
- Better than first fit strategy, but not optimal always.
(Refer the algorithm and examples)