Problem 1: A Cat, a Parrot, and a Bag of Seed

A man finds himself on a riverbank with a cat, a parrot and a bag of seed. He needs to transport all three to the other side of the river in his boat. However, the boat has room for only the man himself and one other item (either the cat, parrot or seed). In his absence, the cat could eat the parrot, and the parrot would eat the bag of seed. Show how he can get all the passengers to the other side, without leaving the wrong ones alone together.

Define the problem:

The problem is that a man has a boat that is too small to transport all his belongings across a river at once. He can only transport one of three items at a time and if he takes the items out of order he may end up with an empty bag of seeds or a dead parrot. The goal is to get all items to the other side without compromise.

Break the problem apart:

The constraints are that only the cat and the bag of seed can be left alone together or else something bad may happen. The goal is clear and there are no sub-goals to this problem.