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Web Programming Fundamentals

Activity: Problem Solving

**A Cat, a Parrot, and a Bag of Seed:**

1. Define the problem
2. The problem in this situation is that the man on the riverbank with a cat, a parrot, and a bag of seed, needs to find a way to transport both the animals and the seed to the other side of the river. The man also has to do this, one at a time, because there isn’t enough room in the boat for more. So, the man has to choose which one to take, and which two to leave behind. Since the parrot would eat the seed, he can’t leave them together. Neither can he leave the cat and parrot together because the cat would eat the parrot.
3. Something that isn’t explained in the word problem is that as the man takes each one to the other side and leaves it, he must keep in mind that he can’t leave the wrong two together on the other side while he gets the third.
4. The overall goal in this case is to get the cat, the parrot, and the seed safely to the other riverbank one at a time without leaving the wrong two together at any time.
5. Break the problem apart
6. The constraints in this problem are:

* The cat must not be left alone with the parrot.
* The parrot must not be left alone with the bag of seed.
* The man only has room in the boat to take one at a time across the river.

1. The sub-goals in this case are:

* Choose the order that the cat, the parrot, and the bag of seed will be transported to keep from leaving the wrong two behind together.
* Choose the order that the cat, the parrot, and the bag of seed will be left on the opposite riverbank to keep from leaving the wrong two together.

1. Identify potential solutions
2. A potential solution for this problem is to make sure that the wrong two are not left together by keeping one of them in the boat during all trips to and from the opposite riverbank.
3. Evaluate each potential solution
4. This solution does meet the goals.
5. This solution will work for all cases.