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Web Programming Fundamentals
Problem Solving

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

1) Define the problem

a) Do this in your own words.

A man is trying to cross a river with his cat, parrot, and bag of seed, using his boat. But, the boat can only carry the man and one other things at a time. He is worried that the cat may eat the parrot, or that the parrot may eat the seed. He needs a solution to get all 3 and himself across the river intact.

b) What insight can you offer into the problem that is not immediately visible from the word problem alone?

There must be an order to move each item across the river without endangering the other items.

c) What is the overall goal?

To move the cat, parrot, and bag of seed across the river without losing any of them.

2) Break the problem apart

a) What are the constraints?
b) What are the sub-goals?

3) Identify potential solutions

a) For each of the sub-problems you've discussed in #2, what is a possible solution?

4) Evaluate each potential solution

a) Does each solution meet the goals?
b) Will each solution work for ALL cases?

5) Choose a solution and develop a plan to implement it.

a) Explain the solution in full.
b) Describe some test cases you tried out to make sure it works.

(You can include drawings and diagrams as part of your explanation as long as they are clearly communicating the solution)