In [1]:
```
class Sheep:
    def __str__(self):
        return "Sheep"

class Wolf:
    def __str__(self):
        return "Wolf"

class Cabbage:
    def __str__(self):
        return "Cabbage"

class Farmer:
    def __init__(self, passenger):
        self.passenger = passenger

    def __str__(self):
        return f"Farmer and {self.passenger}"

class Boat:
    def __init__(self):
        self.objects = []

    def __str__(self):
      return f"\nStates: {', '.join(map(str, self.objects))}" if self.objects else "Th


    def inBoat(self, passenger):
        self.objects.append(passenger)
        return f"\n>> The {passenger} is now in the boat."

    def crossRiver(self):
        steps = [
            "\n>> The Farmer, Sheep, Wolf, and Cabbage are in the left side of the riv
            self.inBoat(Farmer(Sheep())),
            "\n>> The Farmer takes the Sheep across the river.",
            self.inBoat(Farmer(None)),
            "\n>> The Farmer goes back to the Wolf and the Cabbage.",
            self.inBoat(Farmer(Wolf())),
            "\n>> The Farmer takes the Wolf across the river along with the Sheep.",
            "\n>> The Farmer takes the Sheep with him and went back to the left side."
            self.inBoat(Farmer(Sheep())),
            "\n>> The Farmer takes the Cabbage across the river with the Wolf leaving
            self.inBoat(Farmer(Cabbage())),
            "\n>> The Farmer comes back for the sheep.",
            self.inBoat(Farmer(None)),
            "\n>> The Farmer crosses the river for the last time with the Sheep.",
            self.inBoat(Farmer(Sheep())),
            "\n>> The Farmer, Sheep, Wolf, and Cabbage crossed the river safely."
        ]

        return "\n".join(steps)
```

In [3]:
```
solution = Boat()
print(solution)
print(solution.crossRiver())
print(solution)
```

```
The Boat is empty.

>> The Farmer, Sheep, Wolf, and Cabbage are in the left side of the river.

>> The Farmer and Sheep is now in the boat.

>> The Farmer takes the Sheep across the river.

>> The Farmer and None is now in the boat.

>> The Farmer goes back to the Wolf and the Cabbage.

>> The Farmer and Wolf is now in the boat.

>> The Farmer takes the Wolf across the river along with the Sheep.

>> The Farmer takes the Sheep with him and went back to the left side.

>> The Farmer and Sheep is now in the boat.

>> The Farmer takes the Cabbage across the river with the Wolf leaving the Sheep behi
nd.

>> The Farmer and Cabbage is now in the boat.

>> The Farmer comes back for the sheep.

>> The Farmer and None is now in the boat.

>> The Farmer crosses the river for the last time with the Sheep.

>> The Farmer and Sheep is now in the boat.

>> The Farmer, Sheep, Wolf, and Cabbage crossed the river safely.

States: Farmer and Sheep, Farmer and None, Farmer and Wolf, Farmer and Sheep, Farmer
and Cabbage, Farmer and None, Farmer and Sheep
```

In [ ]:

Colab Link: https://colab.research.google.com/drive/1yjyTGxQmZoA1RejKAJkLlAIAuo1_pTBt?usp=sharing