**Mock Exam Task 1: Zoo Simulation**

**Scenario:**

You are tasked with creating a simulation for a zoo. The zoo contains various animals, each with unique behaviors and characteristics. You need to create a base class for animals and derive specific animal classes from it. The zoo should be able to simulate a day, where each animal performs its daily routine.

**Tasks:**

**Animal Class:**

• Create a base class Animal with the following attributes and functions:

• A std::string for the animal’s name.

• An integer for the animal’s age.

• A pure virtual function performDailyRoutine that outputs the animal’s routine for the day.

**Specific Animals:**

• Create derived classes Lion, Elephant, and Monkey that inherit from Animal and implement the performDailyRoutine function as follows:

• Lion roars and hunts.

• Elephant splashes water and eats grass.

• Monkey swings on trees and eats bananas.

**Zoo Class:**

• Create a Zoo class with the following attributes and functions:

• A std::vector<Animal\*> to hold the animals in the zoo.

• A destructor to clean up the dynamically allocated animals.

• A function addAnimal that takes an Animal\* and adds it to the vector.

• A function simulateDay that iterates through the vector and calls performDailyRoutine for each animal, handling any potential exceptions that may arise.

**Exception Handling:**

• Implement exception handling in the simulateDay function to catch and handle any exceptions thrown by the performDailyRoutine function.