Lab Task 10

Note: Submit two .cpp files. One cpp file for each task.

Task 01

You are required to design a program for a zoo where there are different types and categories of animals. Use Inheritance and polymorphism to write a maintainable code.

Animal is an abstract class with two protected data members name and color, destructor, and a pure virtual function display().

Deer is derived from Animal and has an additional boolean data member hasAntlers, indicating whether or not the deer has antlers. Deer overrides the display() function to print information about the deer's name, color, and whether or not it has antlers.

Zebra is derived from Animal and has an additional string data member stripe_pattern, indicating the pattern of stripes on the zebra's body. Zebra overrides the display() function to print information about the zebra's name, color, and stripe pattern.

In main, using polymorphism create child's class objects and call their display() methods.

Task 02

Now make changes to existing code in a way that in the main, create an array of pointers to the Animal class and populate it with objects of different derived classes. Pass this array to a function named displayAll(). In that function call the display() method with each array element. Finally, in main, at the end destroy the objects and release the memory. Make sure that the child's class objects should be destroyed.