**C# Lab – Day5:**

1. Design a Zoo class that contains different types of animals.

Animals are categorized as Mammals or Birds. Any animal whose age is greater than 10 years, is not accepted in the Zoo. If an animal dies, it must be removed from the Zoo. Design the system so that, the following code is valid:

Zoo zoo = new Zoo();

zoo.Add(new Lion());

zoo.Add(new Sparrow());

zoo.Add(new Elephant());

zoo.Add(new Pigeon());

foreach(Animal bird in zoo.Birds)

// (Birds must be a read-only collection)

{

Console.WriteLine(bird);

}

foreach(Animal mammal in zoo.Mammals)

// (Mammals must be a read-only collection)

{

Console.WriteLine(mammal);

}

foreach(Animal animal in zoo.Animals)

{

Console.WriteLine(animal);

}

1. **Design a new class PhoneBook, such that the following code is valid:**

*PhoneBook phoneBook = new PhoneBook();*

*phonebook[123] = “Ali”;*

*phonebook[“Hosam”] = 456;*

*int phone = phonebook[“Ali”]*

1. Redesign your PhoneBook class so that is has **Dictionary<string, int> Entries** inside it (Keep the same functionality of the class) .