
In C# create a single class that when subclassed allows this sample test code to run using only the file system for storage, no pre-built database allowed; use files. Create all classes required to compile and pass the test case; you may not modify the test. The Id, Save, Delete, and Find methods must be in the base class only; subclasses must not have to write any persistence code and may not override any base class persistence methods.

Choose whatever types you feel appropriate, the purpose of the exercise is to see some of your code and discuss with you the solution you came up with and the choices you made. Your resume will not be looked at without code that passes this test. Submit your solution as a passing NUnit test case along with your resume to jobs@allresnet.com. We'll contact you only if your code interests us as a potential candidate; if you don't hear from us, you didn't pass the test because we didn't like something about your solution.

[TestCase]

```
public void ProgrammerTest() {
    var address = new Address("5455 Apache Trail", "Queen Creek", "AZ", "85243");
    var person = new Person("Jane", "Smith", address);
    var biz = new Business("Alliance Reservations Network", address);

    Assert.IsNullOrEmpty(person.Id);
    person.Save();
    Assert.IsNotNullOrEmpty(person.Id);

    Assert.IsNullOrEmpty(biz.Id);
    biz.Save();
    Assert.IsNotNullOrEmpty(biz.Id);

    Person savedPerson = Person.Find(person.Id);
    Assert.IsNotNull(savedPerson);
    Assert.AreSame(person.Address, address);
    Assert.AreEqual(savedPerson.Address, address);
    Assert.AreEqual(person.Id, savedPerson.Id);
    Assert.AreEqual(person.FirstName, savedPerson.FirstName);
    Assert.AreEqual(person.LastName, savedPerson.LastName);
    Assert.AreEqual(person, savedPerson);
    Assert.AreNotSame(person, savedPerson);
    Assert.AreNotSame(person.Address, savedPerson.Address);
```



```
        savedBusiness = Business.Find(biz.Id);
        Assert.IsNotNull(savedBusiness);
        Assert.AreSame(biz.Address, address);
        Assert.AreEqual(savedBusiness.Address, address);
        Assert.AreEqual(biz.Id, savedBusiness.Id);
        Assert.AreEqual(biz.Name, savedBusiness.Name);
        Assert.AreEqual(biz, savedBusiness);
        Assert.AreNotSame(biz, savedBusiness);
        Assert.AreNotSame(biz.Address, savedBusiness.Address);
```

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```
var dictionary = new Dictionary {[address] = address,[person] = person,[biz] = biz};
Assert.IsTrue(dictionary.ContainsKey(new Address("5455 Apache Trail", "Queen Creek", "AZ", "85243")));
Assert.IsTrue(dictionary.ContainsKey(new Person("Jane", "Smith", address)));
Assert.IsTrue(dictionary.ContainsKey(new Business("Alliance Reservations Network", address)));
Assert.IsFalse(dictionary.ContainsKey(new Address("54553 Apache Trail", "Queen Creek", "AZ", "85243")));
Assert.IsFalse(dictionary.ContainsKey(new Person("Jim", "Smith", address)));
Assert.IsFalse(dictionary.ContainsKey(new Business("Alliance Reservation Networks", address)));
```

```
person.Delete();
Assert.IsNullOrEmpty(person.Id);
Assert.IsNull(Person.Find(person.Id));
```

```
biz.Delete();
Assert.IsNullOrEmpty(biz.Id);
Assert.IsNull(Person.Find(biz.Id));
}
```

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