Contents

Inheritance (Solutions)

Questions

1. What is the keyword used to call the constructor from the base class?

☐ **this**.
☐ the name of the base class.
☒ **base**
☐ over
☐ inherits

Problem

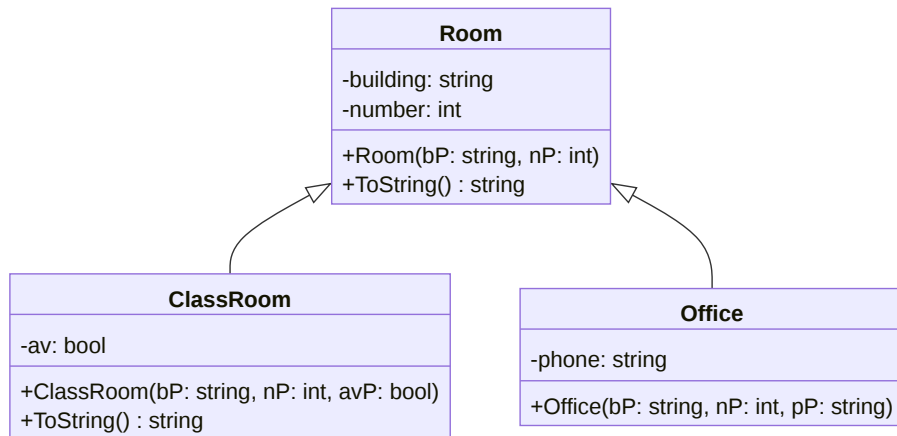Consider the following diagram:

Figure 1: A UML diagram for the Room   ClassRoom class (text version[1])

Suppose you are given an implementation of the Room class, such that

```
Room test = new Room("UH", 243);
Console.WriteLine(test);
```

displays

UH 243

1. Write an implementation of the `ClassRoom` class. Your `ToString` method should display the room's building and number, in addition to whether it has AV set-up.

   Solution

   ```
   class ClassRoom : Room
   {
     private bool av;

     public ClassRoom(string bP, int nP, bool aP)
       : base(bP, nP)
     {
       av = aP;
     }

     public override string ToString()
     {
       return base.ToString() + "av? " + av;
     }
   }
   ```

2. Write a `SameBuilding` static method to be placed inside the `Room` class such that

   ```
   Office test1 = new Office("UH", 127, "706 737 1566");
   ClassRoom test2 = new ClassRoom("UH", 243, true);
   Office test3 = new Office("AH", 122, "706 729 2416");
   Console.WriteLine(Room.SameBuilding(test1, test2));
   Console.WriteLine(Room.SameBuilding(test2, test3));
   ```

   Would display "true" and "false".

   Solution

   ```
   public static bool SameBuilding(Room a, Room b)
   {
     return a.building == b.building;
   }
   ```