

- (c) The `Neighborhood` class consists of a one or more `Family` objects, which are stored in an `ArrayList`.

```
public class Neighborhood
{
    ArrayList<Family> families = new ArrayList<Family>();

    public void add(Family newFamily)
    {
        families.add(newFamily);
    }

    public boolean isInNeighborhood(Person person)
    {
        /* to be implemented in part (c) */
    }
}
```

Implement the `isInNeighborhood` method of the `Neighborhood` class.

You may assume that the `Family` class and its `isInFamily` method work as intended, regardless of what you wrote in part (b). You must use them appropriately in order to receive full credit for part (c).

```
/** Determines whether a particular person is a member of
 * the neighborhood.
 * @param person the person in question
 * @return true if a member of the neighborhood, otherwise false
 */
public boolean isInNeighborhood(Person person)
```

STOP. End of Part II.

4. The classes below represent families, the people in them and the neighborhoods they live in. Every individual member of a family is represented by the `Person` class.

```
public class Person
{
    private String name;
    private int age;

    public Person(String myName, int myAge)
    {
        name = myName;
        age = myAge;
    }

    public String getName()
    { return name; }

    public int getAge()
    { return age; }

    public boolean matches(Person p)
    { /* to be implemented in part (a) */ }
}
```

- (a) Write the `Person` method `matches`. The method returns true if the values contained in the calling object's name and age instance variables match the values contained in the passed object's name and age instance variables.

```
/** Returns true if this object matches the parameter object
 * @param person the Person object to be compared to this object
 * @return true if matches, false if does not match
 */
public boolean matches(Person person)
```

- (b) The `Family` class models a family that consists of one or more adults and zero or more children. The instance variables for the `Family` class must include:

- an `ArrayList` to hold members of the family who are adults, where adult is defined to be age 18 and over, and
- an `ArrayList` to hold members of the family who are children.

There are two methods in the `Family` class:

- the `add` method that takes one parameter of type `Person` and adds it to the appropriate `ArrayList`, and
- the `isInFamily` method that takes a `Person` object as a parameter and returns a boolean indicating whether that `Person` is a member of the object's family.

Write the complete `Family` class.

You may assume that the `matches` method of the `Person` class works as intended, regardless of what you wrote in part (a). You must use it appropriately in order to receive full credit for part (b).