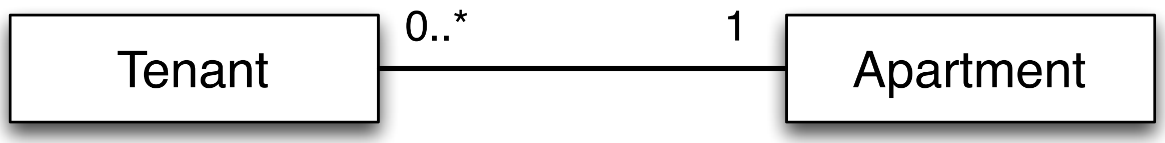
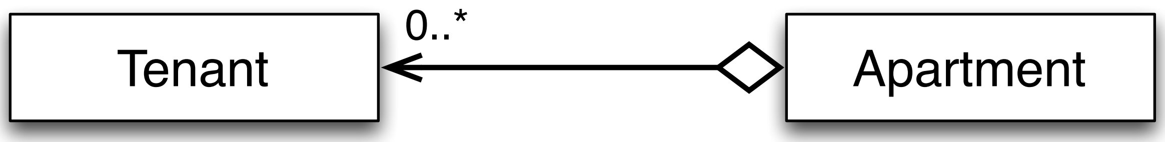
CPSC210 - 2015W1 MT2 Solutions Guide.

1

1a



1b

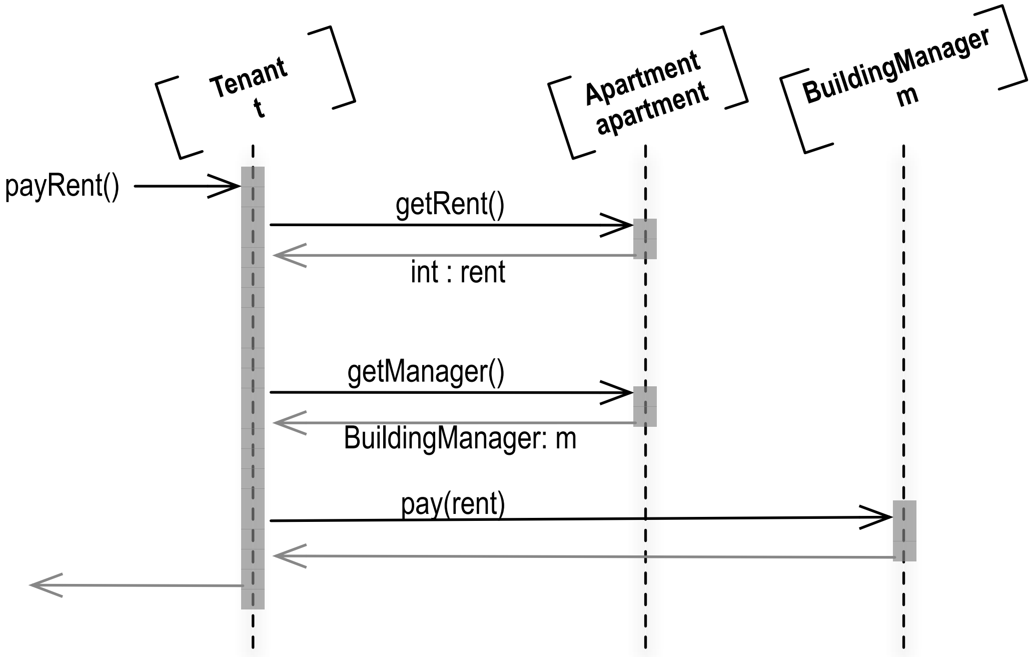


optional diamond

1c

No - it’s not substitutable because it strengthens/narrows the precondition (it only runs properly if the range is narrower than the superclass range).

1d



2

A E B E C D

3a

```
/* REQUIRES: nothing or no requires clause at all.
   EFFECTS: Returns a new record made up of the name, id and result Strings
   throws NullNameException if name is null
   throws NullIDException if id is null
   throws NullResultException if result is null
*/

public Record mergeRecord (String name, String id, String result)
   throws NullNameException, NullIDException, NullResultException
   {
          if (name==null) throw new NullNameException;
          if (id==null) throw new NullIDException;
          if (result==null) throw new NullResultException;
          return new Record(name,id,result);
   }
```

3b

name	id	result	expected
null	null or non-null	null or non-null	throws NullNameException
non-null	null	null or non-null	throws NullIDException
non-null	non-null	null	throws NullResultException

4

```
public class Person implements Student, Jogger{
       public String study(){
              return "studying";
       }
       public String jog(){
              return "jogging";
       }
}

public interface Student{
       public String study();
}

public interface Jogger{
       public String jog();
}
```

5

```
public class CensusTaker{
       List<Person> people;
       List<Address> addresses;
       public CensusTaker(){
              people = new ArrayList<Person();
              addresses = new ArrayList<Address>();
       }
       public void takeCensus(){
              for (Person p : people){
                     addresses.add(p.getAddress());
              }
       }
}

public class Person {
       address a;
       public Person(Address a){
              this.address = a;
       }
       public Address getAddress(){
              return a;
       }
}
```

6a Location: Pet class. Override hashcode and equals

6b Location: PetSitter:26. add `record.makeEntry(did);`

6c Location: TestPetSitter:34. add `margaret.assign(angelo);`

6d Location: PetSitter:39 remove: `return Null`, add `throw new NoSuchRecordException();`