

CPSC 211 Practice Midterm Solutions

Question 1: Matching

a.

- a) **G**
- b) **D**
- c) **AG**
- d) **AS**
- e) **C**
- f) **G**

b.

- (a) **6**
- (b) **3**
- (c) **2**
- (d) **1**
- (e) **5**
- (f) **4**

Question 2: Short Answer

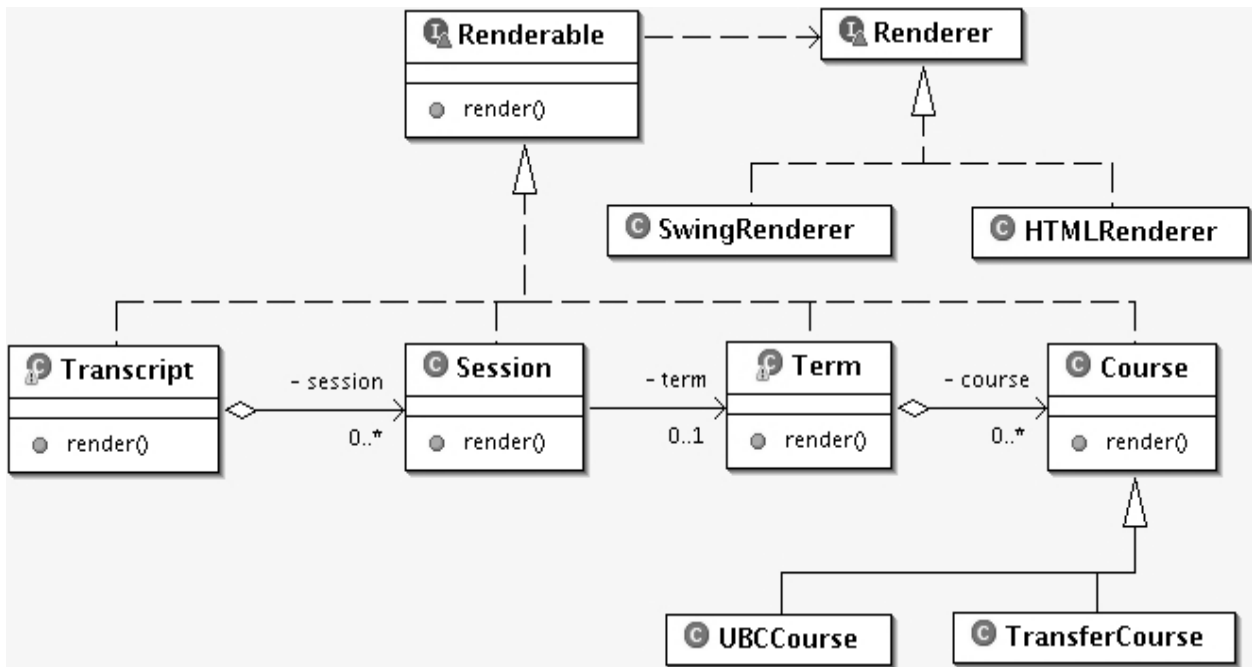
- a. This means that we should try to minimize the number of direct interactions between classes. Therefore, changing one class will have minimal impact on the others.

- b. It violates the Cohesion principle, according to which each class should represent a single concept. The student should have split it into more classes

- c.
 - i) ERROR: It expects a list of RoundShape
 - ii) OK. Circle extents RoundShape
 - ii). ERROR: It expects a list of RoundShape
 - iv) OK. RedCircle extents RoundShape

- d. Skiers and swimmers are athletes who use equipment and drink sport drinks.

Question 3: Class Design



Question 4: Java Collections

```
<E> public void deleteAll(List<E> list, E obj ){
    Iterator itr = list.iterator();

    while ( itr.hasNext() ) {
        if ( obj.equals( itr.next() )
            itr.remove();
    }
}
```

This operation take $O(n)$ time. What if we don't use iterator and write:

```
<E> public void deleteAll(List<E> list, E obj ){
    for ( E cur : list ) {
        if (obj.equals( cur ) )
            list.remove(cur);
    }
}
```

Is this a good code? Why or why not?