TUTORIAL 2

Question 1 in the exam paper is generally based on Units 1 & 2 (though understanding of this material can be improved upon through reflection on ideas described in the module as a whole).

1. Match the following descriptions to the programming models:

a. models complex problem domains as the collaboration through message passing between objects, each with its own responsibilities	*1. Imperative*
b. breaks down a programming task into a collection of variables, data structures, and subroutines	*2. Object oriented*
c. approaches the problem as a set of functions that can be composed	*3. Procedural*
d. expresses the logic of a computation without describing its control flow	*4. Functional*
e. uses a sequence of statements t that can change the state of the program	*5. Declarative*

2. With respect to apps you have developed in the past, identify ways in which an imperative approach was adopted.

3. State TWO guiding principals of a functional approach.

4. The following Java code fragments achieve the same goal. Describe what that goal is, and highlight any pros and cons of each approach:

a)
```
List<Integer> results1 = new ArrayList<Integer>();
for(Integer num : collection) {
    if (num % 2 != 0)
        results1.add(num);
}
```

b)
```
List<Integer> results2 = collection.stream()
    .filter( num -> num % 2 != 0)
    .collect(Collectors.toList());
```