Problem1)

Given the class Student and the following code, sketch the memory representation of the variables and the objects. After that, list down the following at each marked position in the code: objects (instances), instance attributes, object state, and the references.

```java
int a = 5;
Student s = new Student();
s.id = 1;
s.name = "Ahmad";
s.gpa = 4.50f;
//sketch the memory and list the required

s.id = 2;
s.name = "Khaled";
//sketch the memory and list the required
```
Problem2)

Given the class SimpleNum and assuming that we ran this code:

```java
SimpleNum s1 = new SimpleNum();
SimpleNum s2 = new SimpleNum();
s1.x = 3;
s1.y = 10.0;
```

Now, answer the following:

1. Sketch the memory representation of s1 and s2 after running these two lines of code:

```java
s2.x = s1.x;
s2.y = s1.y * 2.0 + 1.0;
```

2. Sketch the memory representation of s1 and s2 after running these two lines of code:

```java
s2.x = 4;
s2 = s1;
```
3. Sketch the memory representation of s1, s2, and s3 after running these lines of code:

```plaintext
s2 = s1;
s2.x = 5;
s2.y = 3.0 * s1.y;
SimpleNum s3 = s1;
```