CS260 Take-Home Midterm

Date assigned: 11/14/11
Date due: 11/18/11 (by 3pm)
Points: 100

Type up your answer to each of the following questions using Word. Each question is to be answered in the order listed. First list the question followed by your answer. Further,

- you are not to communicate with anyone by any means regarding anything about this exam. I am the only one that you can communicate with regarding this exam.
- every part of every answer must be in your own words. You can look things up in books or on the Web but do not include ANY quoted material or you will receive an F on this exam.
- grading will be based on correctness, clarity of answer, grammar, and spelling.
- all information on the Web is not necessarily correct.

1) (5 pts) What is an Activity?

2) (5 pts) Describe what is meant by "the visible lifetime of an activity."

3) (10 pts) Is it possible for two activities A1 and A2 to be "visible" at the same time? If so, how is this possible and what state is each activity in? If not, why not?

4) (10 pts) What does it mean for an xml layout to be "inflated?" In answering this question, discuss what must happen before the inflation occurs and discuss when the inflation occurs for a given example.

5) (5 pts) Define the term "binding time."

6) (10 pts) Using examples from Android, give an example of something that is bound during each of the possible binding times we discussed in class. As an example, a variable's type is bound at compile time. Give an example other than a variable's type that is bound at compile time and then give an example for each of the other possible binding times.

7) (10 pts) What is an intent and how are intents used? Discuss implicit versus explicit intents when answering this question.

8) (25 pts) We have seen that a basic Activity class looks like the following:

```
public class BasicActivity extends Activity
{
  @Override
  public void onCreate (Bundle savedInstanceState)
  {
    super.onCreate (savedInstanceState);
    setContentView (R.layout.main);

  }
}
```

a) Assume that in main.xml two Button objects exist called btnAndroid and btniPhone. Write all of the code necessary in the BasicActivity class to count the number of times the Android button is clicked and the number of times the iPhone button is clicked.

b) Draw a diagram showing the relationship between the three objects BasicActivity, the Android button, and the iPhone button. Your diagram is to show what the instance variables of each object are referencing. Assume the Button class is as we defined in class. Make sure your diagram is completely, correctly, and clearly labeled as we did in class. Remember, an object has state and behavior. Show all state and all behavior for each object.

For the following questions, refer to the Game project in CS260-01 Public folder on Turing.

9) (10 pts) Line 29 in GameActivity.java is
mButtonNewGame.setOnClickListener (this);

a) What is **this**?

b) Why is **this** an acceptable argument to pass to setOnClickListener?

Be very specific and complete in answering a) and b).

10) (10 pts) Line 36 in TicTacToe.java is mCustomView = new CustomView (this);

a) What is **this**?

b) Why is **this** an acceptable argument to pass to the CustomView constructor?

Be very specific and complete in answering a) and b).