

CMPUT 301 – User Interfaces and Software Design
Midterm Examination – February 11, 2000
Section B2 E. Stroulla

OO Design (40%)

- (15%) Explain the motivation behind the MVC paradigm for system–interface design. Explain the sequence of steps that happens after the model has been updated. What are the disadvantages of the paradigm? (identify at least two) How can the above sequence be simplified?
- (15%) "*The ABC addressbook enables you to keep the personal data of your friends and acquaintances, i.e., First and Last Name, Address, Phone and Fax. In addition, you may (but don't have to) characterize an entry as Personal or Professional. In addition to the standard fields, for your personal acquaintances you can include their birthday, and for your professional acquaintances you can include a record of your meetings with them.*"

Design a class diagram to describe the above system; explain your decisions re: classes and inheritance relations among them.

- (10%) Given the following class definitions what will happen when the pieces of code (a) and (b) are executed? Explain delegation and polymorphism in terms of the example below.

```
class Animal {  
    void breath() { System.out.println("whoosh.. whoosh.."); }  
    void talk() { System.out.println("generic cry!"); }  
class Dog extends Animal {  
    void talk() {  
        System.out.println("Woof!"); }  
class Cat extends Animal {  
    void talk() {  
        System.out.println("Meow..."); }  
}
```

```
(a) Animal myPet = new Animal;  
    myPet.talk;  
(b) Cat myCat = new Cat;  
    myCat.breath;
```

Process (10%)

- (10%) What are the motivations behind prototyping? Why should prototypes be thrown away?

User–Interface Design (50%)

- (15%) "Minimal input actions by user" is a guideline for data entry. What does the guideline actually suggest? Give an example where it is violated.
- (15%) Give an example of an interface design decision where the age of the potential users is important; explain why.
- (20%) "Gulf of Execution", "Gulf of Evaluation": explain the concepts and discuss some ways in which the interface can help bridge these "gulfs".

