CSE3311 Fall 2012
Quiz 3

Name: SOLUTIONS

Student#: _____

Show all work clearly and in order, and underline your final answers. Use Eiffel notation when necessary, sketch all relevant graphs and write down all relevant mathematics. You have 20 minutes to take this 20 point (2%) quiz.

1. (*5 points*) Describe usage of exceptions in Eiffel: structure and syntax, role of each part.

Answer:
(2 points) feature .... rescue ... retry ....
(3 points) Rescue clause is used to prepare data for retry (restoring pre-conditions) and to restore invariant retry allows for a next attempt of execution

2. (*5 points*) Explain following terms:

1. Coupling – how dependent modules are on each other

2. Cohesion – how "self contained" a module is

3. Decomposability – ability to break a problem into sub-problems connected by simple structures

4. Composability – ability to produce/compose software from reusable plug and play modules

5. Modular Protection – minimizing an impact of abnormal run time errors to one or a very few modules and avoid propagation of error conditions

3. (*10 points*) Explain the difference between constrained and unconstrained genericity in Eiffel. Show an example when constrained genericity is needed.

Answer:
(2 points) Unconstrained genericity allows to use any type as a parameter.

(2 points) Constrained genericity specify the conditions that a class must satisfy to be accepted as a parameter. Specifically it defines the data/methods (API) that the class should have using inheritance e.g. `C -> COMPARABLE` *means that* `C` *inherits from* `COMPARABLE` *(1 point) .*

(5 points if example is showed and explain why constrained gen. is needed, 2 points for plain example)

Constrained genericity is needed when the generic class expects some properties from the class that is parameter. For example sorted array or list will require elements to inherit `COMPARABLE` *to be able to compare them and create order.*