Name _____

Student number _____

SE 2AA4 Winter 2007

Quiz 8 Answer Key

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You have 10 minutes to complete this quiz consisting of 2 pages and 4 questions. You may *not* use your notes and textbooks, nor may you use any calculators or other electronic devices. Circle the *best* answer for the multiple choice questions, and write the answer in the space provided for the other questions. Good luck!

(1) [4 pts.] A stack data structure is good for implementing a queue. Is this statement true or false?

(a) True.

(b) False.

(2) [4 pts.] What is a *software architecture*?

Answer: A software architecture is the highest-level design of a software product that exhibits the main components of the product and how they are related to each other.

(3) [6 pts.] List three of the design strategies that were mentioned in class.

Answer:

- Model decomposition.
- Refinement.
- Transformation.
- Module composition.
- Design for change.
- Product families.
- Little languages.

Quiz continues on next page.

(4) [6 pts.]Recall that the interface of the `VectorAdt` module of Exercise 3 contains the following C procedures:

(a) `float get_x(Vector v);`

(b) `float get_y(Vector v);`

(c) `Vector i_vector();`

(d) `Vector j_vector();`

(e) `Vector mul(float r, Vector v);`

(f) `Vector add(Vector u, Vector v);`

Write a procedure

```
Vector special_vector();
```

in C that returns the representation in the `VectorAdt` module of the vector $(31.33, 17.19)$. Assume that this procedure is put into a definitional extension of the `VectorAdt` module.

Answer:

```
Vector special_vector() {
  return add(mul(31.33, i_vector()),
             mul(17.19, j_vector()));
}
```

Quiz ends here. **2/2**