

Project 2

CS 420

1. Exercises 4.75 through 4.81. Note that you will be “restoring” `selection.cpp` several times. Submit a write-up answering each exercise’s questions and/or describing how you modified the program, as appropriate.
2. Exercise 4.82. Start from the original `canvas.cpp`. Hints:

- Use the ‘m’ key to initiate a move.
- The example program sets a width and height of 1.0 in the call to `gluPickMatrix()`. You will find it helpful to set these a bit higher to make it easier to perform the picking.
- As demonstrated in Exercise 4.80, you will find it helpful to tag your objects with multiple names. You have a hierarchy of points, lines, and rectangles. An object’s first name should designate its type. Its second name should uniquely identify it. Use a global `int name` as a name counter to get each new object’s name. Add `name` as an additional field to each class.
- Unfortunately, one of you found out the hard way that the code:

```
Object foo = bar;
```

behaves differently in C++, as compared to Java. In Java, `foo` would be a reference to `bar`. So, both `foo` and `bar` refer to the same object. In C++, however, `foo` will be a copy of `bar`, not a reference to it. That is, it will be a distinct object. To achieve Java’s behavior in C++, use an explicit reference:

```
Object& foo = bar;
```

Submit your source program.