

# CS 3005: Programming in C++

## Examples Using `ActionData`

### Replacing Parameters with `ActionData&`

Most functions will need an updated parameter list, that replaces several parameters with an `ActionData` reference. The internals of the functions will then use the data members of the `ActionData` object instead of the previous parameters. Here is an example of the changes to the `getInteger` function:

Previously:

```
int getInteger( std::istream& is, std::ostream& os, const std::string& prompt ) {
    int n;
    os << prompt;
    is >> n;
    return n;
}
```

Now:

```
int getInteger( ActionData& action_data, const std::string& prompt ) {
    int n;
    action_data.getOS() << prompt;
    action_data.getIS() >> n;
    return n;
}
```

Be sure to update the header file (`image_menu.h`) declaration as well as the implementation in the correct `.cpp` file.

### Creating an `ActionData` Object

Many of the functions in `controllers.cpp` will need to update the way they call other functions, by first creating an `ActionData` object to be passed. Some may also need to copy the changes made to the input image 1 into the output image of the `ActionData` object.

Previously:

```
int assignment2( std::istream& is, std::ostream& os ) {
    Image image;
    diagonalQuadPattern(is, os, image);
    drawAsciiImage(is, os, image);
    return 0;
}
```

Now:

```
int assignment2(std::istream& is, std::ostream& os) {
    ActionData action_data(is, os);
    diagonalQuadPattern(action_data);
    copyImage(action_data);
    drawAsciiImage(action_data);
    return 0;
}
```