



# Assignment 2

## 1. Refactoring

The five cards for which I refactored were Adventurer, Smithy, Council Room, Village, and Great Hall. I refactored the code to move all the code within the `cardEffect` function to new functions (residing directly above `cardEffect`) called `adventurerEffect`, `smithyEffect`, `councilRoomEffect`, `greatHallEffect`, and `villageEffect`. This refactoring was simple and involved passing in as arguments only three variables from the `cardEffect` function: (1) the pointer to the `gameState` state, (2) the integer representing the `currentPlayer`, and (3) the integer representing the `handPos`. All other variables that the original code used were declared and initialized within the functions themselves. Since each of these conditional switches are terminal points in the program, each switch case merely returns the output from calling these functions.

## 2. Bugs

I introduced one bug each to `adventurerEffect`, `smithyEffect`, `councilRoomEffect`, and `greatHallEffect`.

- **Adventurer** I made a small alteration in the Adventurer code that has the effect of failing to discard the appropriate number of cards. For Adventurer, the player keeps drawing cards until two treasures have been drawn. Every revealed card is discarded except for those two treasures. In the original code, this is handled with the following loop:

```
while (z-1>=0){
    state->discard [ currentPlayer ] [ state->discardCount [ currentPlayer ] ++ ] =
        temphand [ z - 1 ];
    z=z - 1;
}
```

I made a subtle change in the while loop condition so that it will fail to discard all the newly revealed cards. It will instead retain one revealed non-treasure card in the player's hand:

```
while (z-1>0){
    state->discard [ currentPlayer ] [ state->discardCount [ currentPlayer ] ++ ] =
        temphand [ z - 1 ];
    z=z - 1;
}
```

- **Smithy** For the Smithy, I added a line of code that will increase the player's number of buys:
- **Council Room** For the Council Room, I messed up the for loop so that it draws three cards instead of four:

```
for (i = 0; i < 3; i++)
{
    drawCard(currentPlayer , state);
}
```

- **Great hall** For the Great Hall, I changed the trashflag from a 0 to a 1 in the discardCard function so that the Great Hall card will be trashed rather than discarded when the player uses this card:  
`discardCard(handPos, currentPlayer, state, 1);`