Documentation Section:

The documentation should contain your understanding of the code of smithy and adventurer card. It should also contain documentation of your understanding of the code of **discardCard**() and **updateCoins**() methods. The documentation section should contain statements to check **preconditions** and **postconditions** of each function. In other words, you need to write what it is required or must be true before the function is called, and what will be true/changed when the function is finished/returned.

Coding of Cards in General:

Before a card is played, there is a function called playCard() that is called that validates if the card being played can be played at the time. It checks various things such as if the player has enough actions, and if it is the right phase. The card variable in the playCard() function is assigned the result of the handCard() function based on the parameter passed to it. The cardEffect() function, after some initial set up, has a bunch of switch functions for each possible card that can be played. Based on the value of the card variable in playCard(), the appropriate switch statement is executed, and then cardEffect() returns. Adventurer and Smithy are just two of the cards that can be found in the switch statements here.

Adventurer Card:

The adventurer card is a 6 coin cost kingdom action card that allows a person to reveal cards from their deck until 2 treasure cards are revealed. After putting those into your hand, the rest are discarded.

The adventurer code has a while loop that occurs as long as the drawntreasure variable is less than 2. First, it will check the number of cards in the players deck. If it is empty, the discard pile is shuffled and added to the deck. Cards are drawn in the while loop and added to the top of the players hand. If it is copper, silver, or gold, the drawntreasure variable is incremented by 1. Otherwise, the card is added to a temporary array so that the game knows what to discard. After finding two treasures is complete, the cards that were added to the temporary array are discarded.

Smithy:

The adventurer card is a 4 coin cost kingdom action card that allows a person to draw 3 extra cards that turn.

The Smithy card uses a for loop that iterates 3 times, calling the drawCard() function for the currentPlayer 3 times, which draws the player 3 cards.

*int discardCard(int handPos, int currentPlayer, struct gameState *state, int trashFlag)*:

This function is used to discard cards. It has a trash flag to distinguish between cards that are trashed due to effects and those are discarded due to being played. The code contains extra conditions for dealing if the last card in the hand is the one being played.

Preconditions:

Must be passed appropriate parameters. The hand position of the card to discard, the current player, the gameState struct, and the trashFlag integer. There must be at least one card in the hand to discard.

Postconditions:

This function discards cards after being passed the appropriate parameters. If the card isn't trashed, it is added to the played pile, and the count of played cards is incremented. The card that has its parameter passed to the function is removed by being set to -1, and the number of the cards in a players hand is decremented by 1.

int updateCoins(int player, struct gameState *state, int bonus):

This function manipulates the coins variable in the gameState. The first it adjusts the number of coins in the hand to 0, and then goes through the players hand and adds to the coin variable, 1 for a bronze card, 2 for a silver card, and 3 for a gold card. Finally, it adds bonus coins from the effect of cards.

Preconditions: Must be passed appropriate parameters. Generally only called when a card is played, by the effect of certain cards, and at the end of a turn.

Postconditions: Coin variable in state accurately reflects the number of coins a player has in their hand.

Refactor Section:

Only managed to refactor Adventurer, Smithy, and Mine in time.

Bugs Section: