**DIAGRAM**



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| **Module** | Component [1] - Main Menu |
| **Input** | Integer between 1-4 inclusive |
| **Output** | Rules, Menu for Settings, Menu for Game, Exit message, Invalid Input Warning |
| **Dependencies** | Rules, Game, Settings |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Input: ‘3’ -> ‘return’  Attempt to go to settings then immediately return to main menu, infinite loop into stack overflow error occurs | 3 | Attempted fix at previous settings page bug resulting in undesirable behavior. Fixed by reverting change. (Removed creation of new scanner for settings method) |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further bugs found | 1 | n/a |

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| **Module** | Component [2] - Rules |
| **Input** | n/a |
| **Output** | Text containing the rules of the game then the main menu |
| **Dependencies** | Main Menu |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further bugs found | 1 | n/a |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further bugs found | 1 | n/a |

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| **Module** | Component [3] - Game |
| **Input** | Integer 1-4 inclusive to select action, Integer 1-[MAX\_CHIPS] inclusive to bet chips at beginning, [PLACEHOLDER FOR HAND SELECTION AFTER SPLIT] |
| **Output** | Hands of players in ASCII, Game menu, |
| **Dependencies** | CPU, Player, Card |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Upon end game condition, final hands of players are not printed | 2 | Call printBoard() before checking end game conditions |
| 2 | AI is currently under development. Game breaking errors still occur during play | 3 | Finish AI and bug test |
| 3 | All players still able to select move option on their turn even if they have previously busted | 2 | Check for bust before player gets to decide their move |
| 4 | After player has busted or won the round, selecting Continue or Quit Game options have no effect | 1 | Ensure correct function is called with correct parameters set |
| 5 | On win condition, specific players not notified of their winnings, no clear winner | 2 | Print final hand, bets, and winnings of all players in a well-organized manner |
| 6 | On end game condition where human busts, all CPU choose to stay, game stuck in infinite loop of not selecting winner and CPU selecting stay | 1 | Redo end game conditions for ‘all stay’ case |
| 7 | On end game condition where all players choose to stay, no winner declared | 1 | Redo end game conditions for ‘all stay’ case |
| 8 | On end game condition where all players choose to stay, if player selects ‘Hit’ following turn, null pointer exception at insertCard() | 1 | Redo end game conditions for ‘all stay’ case |
| 9 | If human busts and CPU’s choose to stay, once game ends, player has no option to restart a new game, only Continue or Quit | 2 | Change menu options based off current game conditions |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | When dealing with aces hand value was off by one due to a misformed if/else if/else | 2 | changed the second if statement to an else if statement |
| 2 | Upon fixing [4] above, game not reset, automatic win for all players of previous game | 1 | Reset all game variables to defaults once game ends and clear winners list |

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| **Module** | Component [4] - Settings |
| **Input** | the strings “chips”, “cpus”, “return”, “difficulty” followed by an integer on a new line |
| **Output** | Confirmation of the changing of the setting variable |
| **Dependencies** | Main Menu |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Settings does not print a string to confirm changes | 1 | Add print statement |
| 2 | The input of a keyword without an integer following causes out of bounds exception and crash | 3 | Add check statement |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Settings page prints changes despite it failing to have made any changes as a result from fixing incremental test #1 | 1 | Move print statement into else statement so that it only prints when successful |
| 2 | Settings page will print two error strings when inputting a keyword without a trailing integer | 1 | Move try catch statement into if statement so it only executes upon proper input, not just when keyword is found |

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| **Module** | Component [5] - Player |
| **Input** | n/a |
| **Output** | n/a |
| **Dependencies** | Card |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | hand value is not calculated properly. Aces are always viewed as 1 point instead of possibly 11 and face cards are viewed as 11- 13 points respectively | 1 | Add extra check statement for aces and face cards |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further errors found | 0 | n/a |

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| **Module** | Component [6] - CPU |
| **Input** | Internal system call to play computer turns |
| **Output** | Confirmation that CPU made a move |
| **Dependencies** | Lookup Tables, Card |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Out of bounds error when the CPU had an ace as one of their cards | 1 | Changed the access index of the softTables to match that of the respective card |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Would continually stay instead of sometimes hitting | 1 | Not a problem with lookup table, error in revised switch statement. Adequately calls hit method when supposed to now. |

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| **Module** | Component [7] - Card |
| **Input** | Random Seed |
| **Output** | Suit, Value |
| **Dependencies** | None |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | Ace value should either be 1 or 11 but it is only 11 | 2 | Add a check to see if the card is an ace, give it a special flag if it is |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further errors detected | 0 | n/a |

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| **Module** | Component [8] - Lookup Tables |
| **Input** | None |
| **Output** | Decisions for the AI |
| **Dependencies** | None |

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| **Incremental Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further errors detected | 0 | n/a |

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| **Regression Testing** |

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| **Defect #** | **Description** | **Severity** | **How To Correct** |
| 1 | No further errors detected | 0 | n/a |