***Cover Page***

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Student Number | Candidate Number | Allocation |
| Benjamin Finch | 710005114 |  |  |
| Patryk Biegalski | 700037440 |  |  |

***Development Log***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Date | Time | Driver | Observer | Ben’s Signature | Patryk’s Signature |
| 27/10/22 | 12:25 – 13:25 | Ben | Patryk |  |  |
| 28/10/22 | 17:30 – 20:00 | Patryk | Ben |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

***Documentation – Source***

**Card Class**

* Stores a number.
* Is thread safe?

**Player Class**

* Has a hand of 4 cards
* Has a player number
  + Determines the decks they draw/discard
  + Determines the number preference
* Is threaded
* Should draw from their deck and deposit on the next player’s deck (unless the draw deck is empty)
* Declare victory if either their starting, or subsequent hand are all the same number
* Concede defeat if either an opponent’s starting, or subsequent hand are all the same number.
* Write to an output file:
  + Game is starting
  + Every card drawn
  + Every card discarded
  + The current hand
  + Game is ending

**CardGame Class**

* Requests the number of players and a cards file
* Generates n players and 8n cards at the beginning of the game
* Has n decks each with 4 cards
  + These decks could be queues (first-in-first-out)

***Documentation – Testing***

**TestCard Class**

**TestPlayer Class**

* Do the player objects draw from the correct pile?
* Do the players deposit in the correct pile?
* Do the players discard the correct card?
  + Test different hand combinations
  + Test different player combinations
* Do players declare victory when they draw a new card?
* Do players declare victory when they start with a winning hand?
* Do players stop playing when another player draws a winning card?
* Do players stop playing when another player starts with a winning hand?
* Threading: do players wait for decks to be changed by another player before drawing/discarding?

**TestCardGame Class**

* Can the class deal with bullshit inputs
  + Empty deck
  + Too few numbers
  + Some numbers on the same line
  + Too many numbers
* Does the class generate the correct number of decks?
* Does the class deal out cards correctly even when it thinks there are the wrong number of players?

***Questions:***

Should players act simultaneously or as quick as possible?