



# **HACETTEPE ÜNİVERSİTESİ**

**BBM203: SOFTWARE LABORATORY I**

**Fall 2020**

**Programming Assignment 1 Report**

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**Subject: Arrays**

**Programming Language: C++**

# Software Design Notes

## Problem

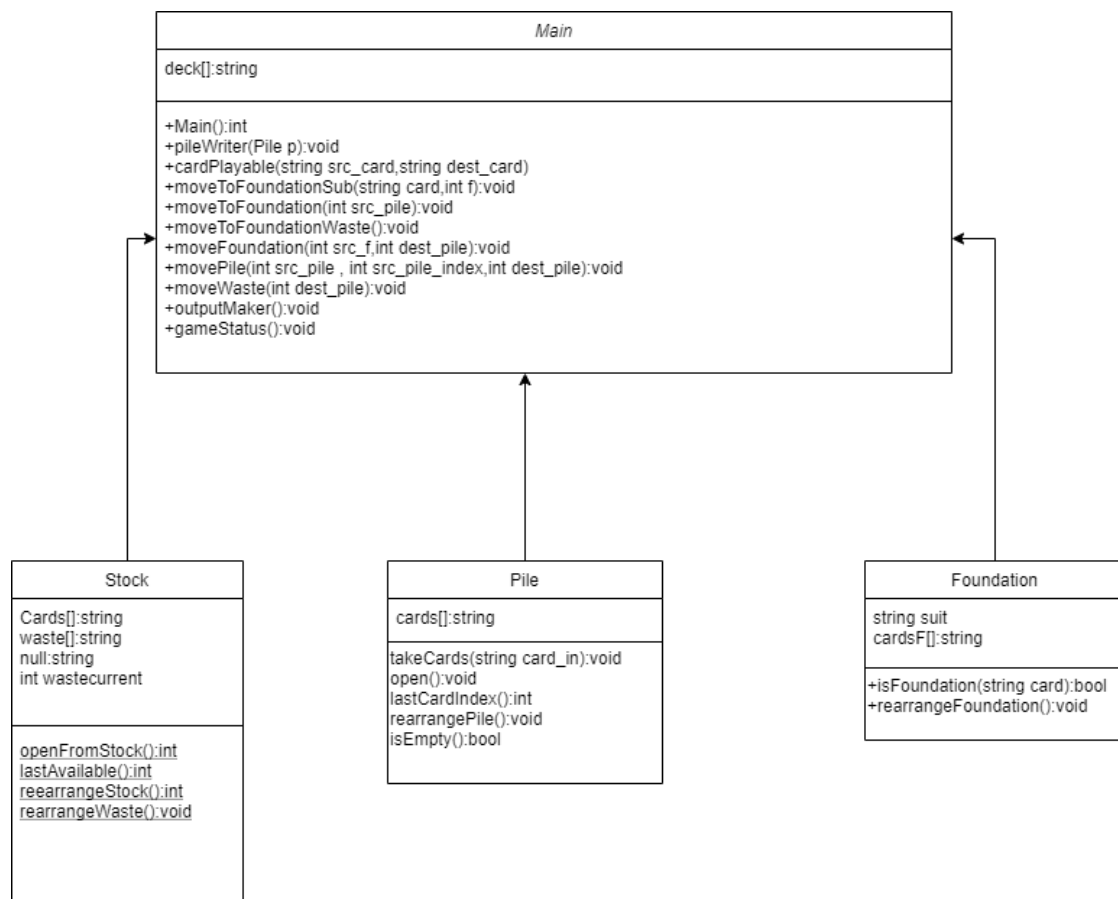
The problem is to implement the old klondike solitaire game using only arrays as our only data structure. The game has to be played using file I/O. The input and output has to be a text file.

## Solution

### Explanation of my approach

In this experiment, I created classes with arrays as fields. I made the program read deck and make small changes on cards by its current class. With those changes the program knew where each card was on the game table.

### Explanation of class diagram



**Stock:** Takes cards from the deck and manages waste and stock.

**Pile:** Takes cards from deck and manages card exchange.

**Foundation:** Takes cards from piles and waste.

## Explanation of arrays

**string cards[24]** = To store stock cards of stock object. If a card from stock is used it becomes null string.

**string cards[19]** = To store cards of a pile object.

**string cardsF[13]** = To store cards of a foundation object.

**string \*waste[3]** = To store waste card pointers. Each time the waste changes, actually the adress which the pointer points on stock array changes.

**Foundation \*foundation\_area[4]** = To store pointers of foundation objects. This made it easier to make changes on foundations by their indexes

**Pile \*tableau\_area[7]** = To store pointers of pile objects. This made it easier to make changes on piles by their indexes.

## Note about executing the program!

Before executing program in dev:

- |                                     |   |                      |
|-------------------------------------|---|----------------------|
| 1. Convert text files with command  | → | dos2unix *           |
| 2. Compile with command             | → | g++ -std=c++11 *.cpp |
| 3. Run the program with 3 arguments | → | ./a.out deck.txt     |
| commands.txt output.txt             |   |                      |