



Q1: Modify the vector class from the lab to support templates

The array should be templated so that the vector can work with `char`, `int`, `double`, ...

Q2: Account Implementation

Given the following class header file, implement the class and test it in your main program.

```
#ifndef _ACCOUNT_H_
#define _ACCOUNT_H_

/* ***** */
/*          ----- Account Class -----          */
/* ***** */

class Account
{
public:
    using acc = Account;

    static int getNoOfAccounts(void);           // Returns the number of accounts
    static int getTotalAmount(void);           // Returns the total amount of all accounts
    static int getNbDeposits(void);            // Returns the number of deposits
    static int getNoOfWithdrawals(void);       // Returns the number of withdrawals
    static void displayAccountsInfos(void);    // Displays the number of accounts, the total
    amount of deposits, the total amount of withdrawals, and the total amount of all accounts

    Account(int initial_deposit);
    ~Account(void);

    void makeDeposit(int deposit);
    bool makeWithdrawal(int withdrawal);
    int checkAmount(void) const;
    void displayStatus(void) const;
};
```





```
private:
    static int m_noOfAccounts;
    static int m_totalAmount;
    static int m_totalNbDeposits;
    static int m_totalNbWithdrawals;

    // To use time functions --> #include <ctime>
    static void m_displayTimestamp(void); // Displays the current timestamp (Will be used in
displayAccountsInfos() )

    int m_accountIndex;
    int m_amount;
    int m_noOfDeposits;
    int m_noOfWithdrawals;

    Account(void);
};

#endif /* _ACCOUNT_H_ */
```

