Topic : Online Auction System

Group No : MLB_10.01_07

Campus : Malabe / ~~Metro / Matara / Kandy / Kurunegala / Kandy / Jaffna~~

Submission Date : 19/05/2022

We declare that this is our own work, and this Assignment does not incorporate without acknowledgment any material previously submitted by anyone else in SLIIT or any other university/Institute. And we declare that each one of us equally contributed to the completion of this Assignment.

Registration No	Name	Contact Number
IT21187414	Ranaweera R.R.M.I.M.	071 573 0399
IT21187346	Wijekoon W.M.T.N.	075 064 6362
IT21187650	Saubhagya A.M.D.T.	070 2764 239
IT21186738	Samarakoon S.M.C.K.	071 455 1356
IT21378270	Wimaladharma T. H. Y. B.	076 336 2177

Exercise 1

(1) User Requirements

- An unregistered user (visitor) in an Online Auction System first needs to register with the system by providing his name, NIC number, and email address.
- Then the registered user (buyer) can log in to the system using his username and password and can edit or modify user details.
- The buyer can view the item details.
- The buyer can place a bid for the required item.
- When submitting a bid, the buyer should enter the bidding amount.
- The bid is then submitted for auction.
- The buyer can modify the submitted bid before expiring the bidding.
- After the auction, if the buyer's bid is selected, he will be notified through email and message by the admin.
- The buyer can make the payment for the item he bided, by card payment or bank transfer.
- When the buyer confirms payment, the payment is validated and stored in the system.
- The buyer can give feedback if needed.
- Admin can manage payments, and feedback and generate reports of bids.

(2) Identified Classes

- Buyer
- Item
- Bid
- Auction
- Payment
- CardPayment (Inheritance class)
- BankTransfer (Inheritance class)
- Feedback
- Report (identified in CRC cards method)

(3) CRC Cards

Buyer Class	
Responsibilities	**Collaborations**
Store user(buyer) details	
Edit/update user details	
Register to the system	
Log in to the system	
View Items	Item
Place bid	Bid
Modify the bid (submitted bids)	Bid
Make payment	Payment
Give feedback	Feedback

Item Class	
Responsibilities	**Collaborations**
Store item details	
Display item name and details	
Display bidding details	Bid

Bid Class	
Responsibilities	**Collaborations**
Store bidding details	
Submit for auction	
Get selected from the auction	Auction
Display Bidding details	

Auction Class	
Responsibilities	**Collaborations**
Store auction details	
Choose the highest bid	
Display auction details	

Payment Class	
Responsibilities	**Collaborations**
Store payment details	
Validate the payment	
Display payment details	

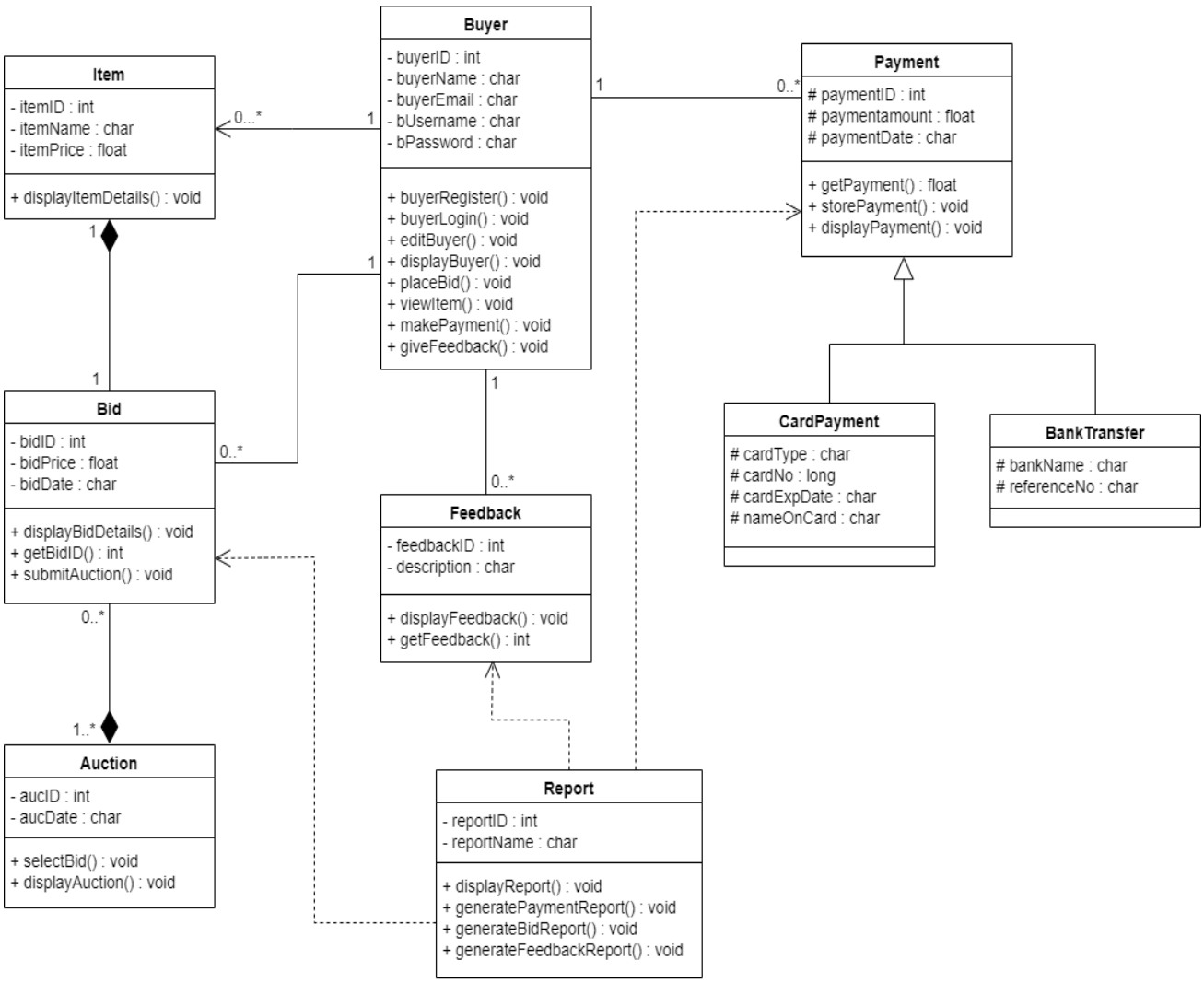
CardPayment Class	
Responsibilities	**Collaborations**
Store card payment details	
Display card payment details	

BankTransfer Class	
Responsibilities	**Collaborations**
Store bank transfer details	
Display bank transfer details	

Feedback Class	
Responsibilities	**Collaborations**
Store feedback details	
Display feedback details	

Report Class	
Responsibilities	**Collaborations**
Generate a report (list) of payments	Payment
Generate a report (list) of feedback	Feedback
Generate a report (list) of bids	Bid

(4) UML Diagram



Exercise 2

main.cpp file

```
#include "Buyer.h"
#include "Item.h"
#include "Bid.h"
#include "Auction.h"
#include "CardPayment.h"
#include "BankTransfer.h"
#include "Feedback.h"
#include "Report.h"

#include <iostream>
#include <cstring>
using namespace std;

int main() {

//objects of classes created
  Buyer byr(1586, "Ishara Perera", "ishara@gmail.com");
  Item itm(9576, "Laptop", 100000.00);
  Bid bid(24247, 120000.00, "20/05/2022");
  Auction auc(12456, "20/05/2020");
  Feedback fd(21256, "Exellent service!!");
  Report rpt(12378, "Monthly Sales Report");
  Payment pay(144677, 120000.00, "22/05/2022");
  CardPayment crd("Visa", 4216785693867412, "05/24", "Ishara Perera");
  BankTransfer bnk("Sampath Bank", "s56320#124");

  byr.displayBuyer();
  cout << "**********************************" << endl;
  itm.displayItemDetails();
  cout << "**********************************" << endl;
  bid.displayBidDetails();
  cout << "**********************************" << endl;
  auc.displayAuction();
  cout << "**********************************" << endl;
  fd.displayFeedback();
  cout << "**********************************" << endl;
  rpt.displayReport();
  cout << "**********************************" << endl;
```

```
 pay.displayPaymentDetails();

 return 0;
}
```

Buyer.h

```
class Buyer {
  private:
    int buyerID;
    char buyerName[10];
    char buyerEmail[10];
    char bUsername[10];
    char bPassword[10];
  public:
    Buyer();
    Buyer(int bID, char bName[], char bEmail[]);
    void buyerRegister();
    void buyerLogin();
    void editBuyer();
    void displayBuyer();
    void placeBid();
    void viewItem();
    void makePayment();
    void giveFeedback();
};
```

Buyer.cpp

```
#include "Buyer.h"
#include <iostream>
using namespace std;
#include <cstring>

Buyer::Buyer() {
  buyerID = 0;
  strcpy(buyerName, "");
  strcpy(buyerEmail, "");
  strcpy(bUsername, "");
  strcpy(bPassword, "");
}

Buyer::Buyer(int bID, char bName[], char bEmail[]) {
  buyerID = bID;
  strcpy(buyerName, bName);
```

```
  strcpy(buyerEmail, bEmail);
}

void Buyer::buyerRegister() {}
void Buyer::buyerLogin() {}
void Buyer::editBuyer() {}

void Buyer::displayBuyer() {
  cout << "Buyer ID : " << buyerID << endl;
  cout << "Buyer Name : " << buyerName << endl;
  cout << "Buyer Email : " << buyerEmail << endl;
}

void Buyer::placeBid() {}
void Buyer::viewItem() {}
void Buyer::makePayment() {}
void Buyer::giveFeedback() {}
```

Item.h

```
class Item {
  private:
    int itemID;
    char itemName[10];
    float itemPrice;
  public:
    Item();
    Item(int iID, char iName[], float iPrice);
    void displayItemDetails();
};
```

Item.cpp

```
#include "Item.h"
#include <iostream>
using namespace std;
#include <cstring>

Item::Item() {
  itemID = 0;
  strcpy(itemName, "");
  itemPrice = 0.0;
}
```

```
Item::Item(int iID, char iName[], float iPrice) {
  itemID = iID;
  strcpy(itemName, iName);
  itemPrice = iPrice;
}

void Item::displayItemDetails() {
  cout << "Item ID : " << itemID << endl;
  cout << "Item Name : " << itemName << endl;
  cout << "Item Price : " << itemPrice << endl;
}
```

Bid.h

```
class Bid {
  private:
    int bidID;
    float bidPrice;
    char bidDate[10];
  public:
    Bid();
    Bid(int bid_ID, float bid_Price, char bid_Date[]);
    void displayBidDetails();
    int getBidID();
    void submitAuction();
};
```

Bid.cpp

```
#include "Bid.h"
#include <iostream>
#include <cstring>
using namespace std;

Bid::Bid() {
  bidID = 0;
  bidPrice = 0.0;
  strcpy(bidDate, "");
}

Bid::Bid(int bid_ID, float bid_Price, char bid_Date[]) {
  bidID = bid_ID;
  bidPrice = bid_Price;
  strcpy(bidDate, bid_Date);
}
```

```
void Bid::displayBidDetails() {
  cout << "Bid ID : " << bidID << endl;
  cout << "Bidding Price : " << bidPrice << endl;
  cout << "Bidding Date : " << bidDate << endl;
}

int Bid::getBidID() {}
void Bid::submitAuction() {}
```

Auction.h

```
class Auction {
  private:
    int aucID;
    char aucDate[10];
  public:
    Auction();
    Auction(int aID, char aDate[]);
    void displayAuction();
    void selectBid();
};
```

Auction.cpp

```
#include "Auction.h"
#include <iostream>
#include <cstring>
using namespace std;

Auction::Auction() {
  aucID = 0;
  strcpy(aucDate, "");
}

Auction::Auction(int aID, char aDate[]) {
  aucID = aID;
  strcpy(aucDate, aDate);
}

void Auction::displayAuction() {
  cout << "Auction ID : " << aucID << endl;
  cout << "Auction Date : " << aucDate << endl;
}

void Auction::selectBid() {}
```

Payment.h

```
#ifndef PAYMENT_H
#define PAYMENT_H

class Payment {
  protected:
    int paymentID;
    float paymentAmount;
    char paymentDate[10];
  public:
    Payment();
    Payment(int pID, float pAmount, char pDate[]);
    float getPayment();
    void storePayment(int id, float amount, char *date);
    void displayPaymentDetails();
};

#endif
```

Payment.cpp

```
#include "Payment.h"
#include <iostream>
#include <cstring>
using namespace std;

Payment::Payment() {
  paymentID = 0;
  paymentAmount = 0.0;
  strcpy(paymentDate, "");
}

Payment::Payment(int pID, float pAmount, char pDate[]) {
  paymentID = pID;
  paymentAmount = pAmount;
  strcpy(paymentDate, pDate);
}

float Payment::getPayment() {}

void Payment::storePayment(int id, float amount, char *date) {
  paymentID = id;
  paymentAmount = amount;
  strcpy(paymentDate, date);
}
```

```
void Payment::displayPaymentDetails() {
  cout << "Payment ID : " << paymentID << endl;
  cout << "Payment Amount : " << paymentAmount << endl;
  cout << "Payment Date : " << paymentDate << endl;
}
```

CardPayment.h

```
#ifndef CARDPAYMENT_H
#define CARDPAYMENT_H
#include "Payment.h"

class CardPayment : public Payment {
  protected:
    char cardType[8];
    long cardNo;
    char cardExpDate[10];
    char nameOnCard[20];
  public:
    CardPayment();
    CardPayment(char cType[], long cNo, char expDate[], char nameCard[]);
    void displayCardDetails();
};

#endif
```

CardPayment.cpp

```
#include "CardPayment.h"
#include <iostream>
#include <cstring>
using namespace std;

CardPayment::CardPayment() {
  strcpy(cardType, "");
  cardNo = 0;
  strcpy(cardExpDate, "");
  strcpy(nameOnCard, "");
}

CardPayment::CardPayment(char cType[], long cNo, char expDate[], char nameCard[]) {
  strcpy(cardType, cType);
  cardNo = cNo;
  strcpy(cardExpDate, expDate);
  strcpy(nameOnCard, nameCard);
}
```

```
void CardPayment::displayCardDetails() {
  cout << "Card Type : " << cardType << endl;
}
```

BankTransfer.h

```
#ifndef BANKTRANSFER_H
#define BANKTRANSFER_H
#include "Payment.h"

class BankTransfer : public Payment {
  protected:
    char bankName[10];
    char referenceNo[10];
  public:
    BankTransfer();
    BankTransfer(char name[], char refNo[]);
};

#endif
```

BankTransfer.cpp

```
#include "BankTransfer.h"
#include <cstring>

BankTransfer::BankTransfer() {
  strcpy(bankName, "");
  strcpy(referenceNo, "");
}

BankTransfer::BankTransfer(char name[], char refNo[]) {
  strcpy(bankName, name);
  strcpy(referenceNo, refNo);
}
```

Feedback.h

```
class Feedback {
  private:
    int feedbackID;
    char description[30];
  public:
    Feedback();
    Feedback(int fID, char fDescription[]);
    int getFeedback();
    void displayFeedback();
```

```
};
```

Feedback.cpp

```
#include "Feedback.h"
#include <iostream>
using namespace std;
#include <cstring>

Feedback::Feedback(){
  feedbackID = 0;
  strcpy(description, "");
}

Feedback::Feedback(int fID, char fDescription[]) {
  feedbackID = fID;
  strcpy(description, fDescription);
}

int Feedback::getFeedback() {}

void Feedback::displayFeedback() {
  cout << "Feedback ID : " << feedbackID << endl;
  cout << "Feedback Description : " << description << endl;
}
```

Report.h

```
class Report {
  private:
    int reportID;
    char reportName[30];
  public:
    Report();
    Report(int rID, char rName[]);
    void displayReport();
    void generatePaymentReport();
    void generateFeedbackReport();
    void generateBidReport();
};
```

Report.cpp

```
#include "Report.h"
#include <iostream>
using namespace std;
#include <cstring>
```

```
Report::Report() {
  reportID = 0;
  strcpy(reportName, "");
}

Report::Report(int rID, char rName[]) {
  reportID = rID;
  strcpy(reportName, rName);
}

void Report::displayReport() {
  cout << "Report ID : " << reportID << endl;
  cout << "Report Name : " << reportName << endl;
}

void Report::generatePaymentReport() {}
void Report::generateFeedbackReport() {}
void Report::generateBidReport() {}
```

Contribution

Student ID	Student Name	Contributions
IT21187414	Ranaweera R.R.M.I.M.	◘ Did noun-verb analysis and identified classes ◘ **Item** and **Buyer** classes and its coding (.h file and .cpp file)
IT21187346	Wijekoon W.M.T.N.	◘ Did noun-verb analysis and identified classes ◘ **Payment**, **CardPayment** and **BankTransfer** classes and its coding (.h file and .cpp file)
IT21187650	Saubhagya A.M.D.T.	◘ Did noun-verb analysis and identified classes ◘ **Bid** class and its coding (.h file and .cpp file)
IT21186738	Samarakoon S.M.C.K.	◘ Did noun-verb analysis and identified classes ◘ **Auction** class and its coding (.h file and .cpp file)
IT21378270	Wimaladharma T. H. Y. B.	◘ Wrote user requirements ◘ Did noun-verb analysis and identified classes ◘ Designed the UML diagram and drew it using draw.io ◘ **Buyer**, **Report**, and **Feedback** classes with the **main program (main.cpp)** and its coding (.h file and .cpp file) ◘ Include all the details and designed the report