CSC404 – PROGRAMMING II

Group Project Final Report

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Title: UiTM Perlis Sport Centre

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INTRODUCTION

Our project is about a system where students can access to sport management through the internet easily without needing to go to the sports centre by walking to it, which consumes energy and needs to queue up when there are many people. So we came up with making UiTM Perlis Sport Centre where students can make court reservations, trainer reservation and sports equipment renting easily. At first opening this system, students need to sign up to UiTM Perlis Sport Centre by entering their first name, last name, student ID and password then after that they need to sign in to the system using the student ID and password they just entered before. Then the main menu will appear and shows some options; court reservation, rental sport equipment, trainer reservation and print receipt. For the first option which is court reservation, users will need to choose which sport will be played. Six sports have been set and users need to input how many hours of playing. Secondly is rental sport equipment, users are given the opportunity to rent basic necessities for playing any game for a reasonable price. Various equipment can be used for six types of sport available. For each item users can demand any quantity they want. Prices are based on each item whether they come in pairs or pieces. Next is trainer reservation, where users can choose their preferred trainer available in particular sports on the system. They also can request how many hours they want to be trained by the chosen trainer. Lastly is the print receipt, bills of those reservations and rentals will be calculated into one receipt and print it out to inform the user, total bill to be paid.
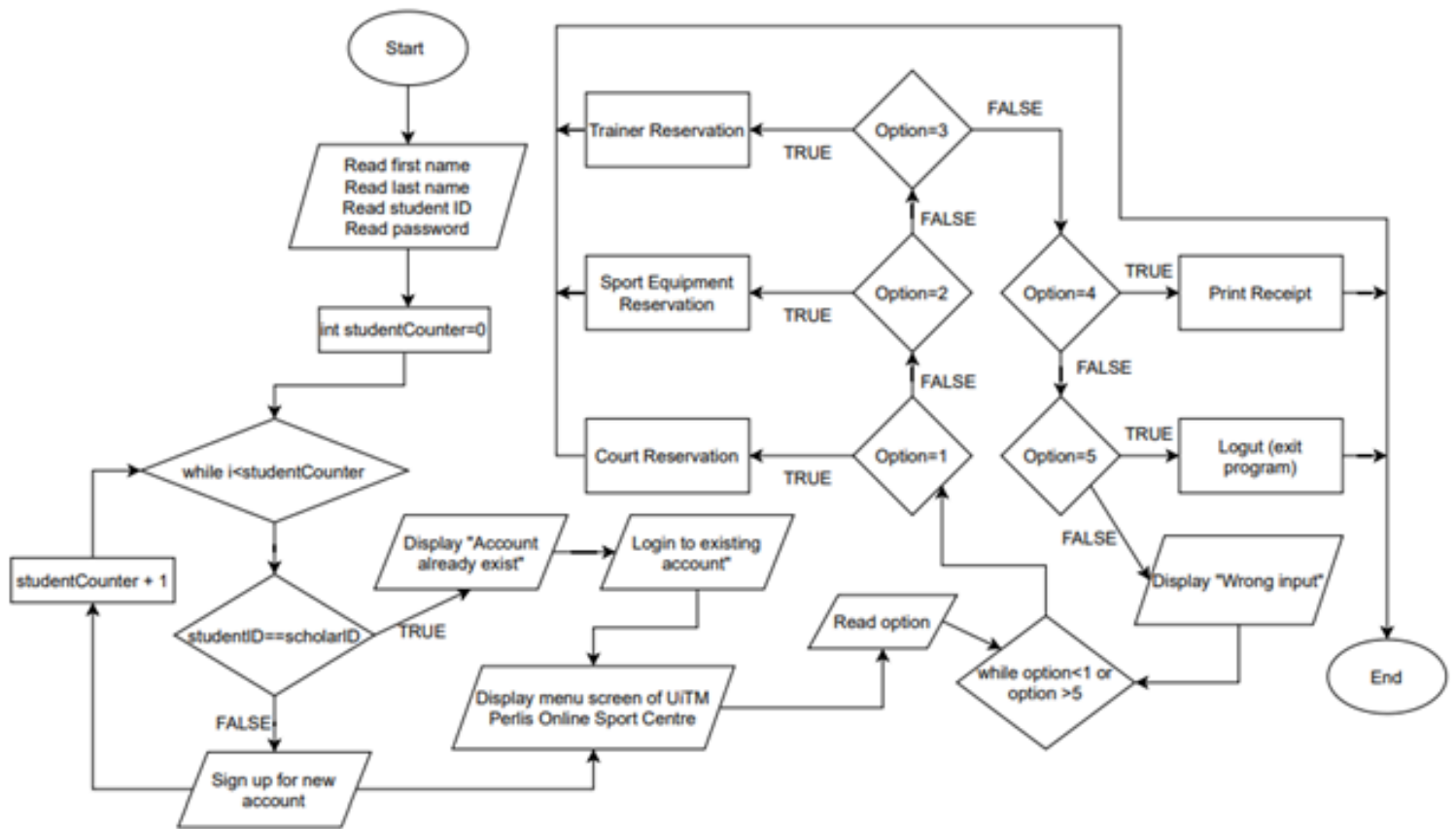
PROBLEM STATEMENT

In UiTM, students will need to go to the UiTM Sport Centre for any booking for sport facilities which will take time for a student. In this project we would like to create a program that may help the student. Students just need to login into UiTM Sport Centre portal for a booking for court, tools and trainer. Students will be provided a price for each facility. Students may also know any sport facilities being prepared in UiTM Sport Centre by login into the portal. Any problem can be directly said in the portal and will be solved as soon as possible by the UiTM Sport Centre.

OBJECTIVE

Our project is for the purpose of making sport a seamless activity with less hustle by going to the sport facility, queueing up and waiting for just a simple matter such as to rent equipment and make court or coach reservations. The C++ program we developed could cut the queues due to the fact that the application could save their time so that they could have a longer time in the fields. Other than that, the sport reservation made by the student is systematic where the student just need to access through internet and click at UiTM Perlis Online Sport Centre for booking any court, sport equipment and trainer. Plus, the system is user friendly because it is easier to use. Thus could help create a healthier environment in UiTM Perlis.

FLOWCHART

```
Start
  │
  ▼
┌─────────────────────┐
│ Read first name     │
│ Read last name      │
│ Read student ID     │
│ Read password       │
└─────────────────────┘
  │
  ▼
┌─────────────────────┐
│ int studentCounter=0│
└─────────────────────┘
  │
  ▼
◇ while i<studentCounter ◇
  │
  ▼
◇ studentID==scholarID ◇ ──TRUE──► Display "Account already exist" ──► Login to existing account
  │ FALSE                                                                        │
  ▼                                                                              ▼
Sign up for new account ──────────► Display menu screen of UiTM Perlis Online Sport Centre
                                                                                 │
  studentCounter + 1                                                             │
                                                                                 ▼
                                            Read option ──► ◇ while option<1 or option >5 ◇

Court Reservation ◄──TRUE── ◇ Option=1 ◇ ◄── ◇ Option=5 ◇ ──TRUE──► Logut (exit program)
                               │ FALSE        │ FALSE
Sport Equipment Reservation ◄──TRUE── ◇ Option=2 ◇ ◄── ◇ Option=4 ◇ ──TRUE──► Print Receipt
                               │ FALSE        │ FALSE
Trainer Reservation ◄──TRUE── ◇ Option=3 ◇ ──FALSE──►
                                                       Display "Wrong input"
                                                       End
```

PROGRAM CODING

```cpp
1    #include<iostream>
2    #include<fstream>
3    #include<string.h>
4    #include<windows.h>
5    #include<iomanip>
6    #include<sstream>
7    #include<string>
8    using namespace std;
9    int forgot=0;
10   // all purchasement counter open
11   int allTrainer=0, allCourt=0, allEquipment=0;
12   int trainerCounter=0, courtCounter=0, equipmentCounter=0;
13   int purchaseCounter=0;
14   // all purchasement counter close
15
16   // initialization account login/menu interface open
17   void signUp(int count);
18   void saveFile(int studentCounter);
19   int loadFile();
20   void logIn(int count);
21   void menu();
22   void logOut();
23   // initialization account login/menu interface close
24
25   // initialization kemal open
26   int courtRow[6];
27   void courtReservation();
28   int file();
29   double duit(double total);
30   double Total=0;
31   // initialization kemal close
32
33   // initialization apikkk open
34   int equipmentRow[12];
35   int unitcounter (int price);
36   void RentTotal (int total);
37   int readFile();
38   void errorrental();
39   void equipmentReservation();
```

```cpp
40   // initialization apikkk close
41
42   // initialization taqin open
43   void calculateAllReceipt();
44   int row[6];
45   void trainer();
46   void getTrainerData(struct trainerDetails listTrainer[][6], ifstream &getFile);
47   void displayTrainer();
48   void chooseTrainer(int &sports, int &coach);
49   void trainerFee(double salary);
50   void printReceipt();
51   // initialization taqin close
52
53   // struct kemal open
54   struct courtReceipt{
55       string selectedCourt;
56       double selectedHours;
57   }courtReceiptDetails[100];
58   struct court{
59       string sukan;
60       int price;
61   }sport[6];
62   // struct kemal close
63
64   // struct apikkk open
65   struct equipmentReceipt{
66       string selectedEquipment;
67       int numUnit;
68   }equipmentReceiptDetails[100];
69   struct equipment{
70       string name;
71       int rental;
72   }eqp[12];
73   // struct apikkk close
74
75   // struct taqin open
76   struct invoice{
77       double totalAll;
78   };
```

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```cpp
79  struct calcPayment{
80      invoice receipt;
81      double totalTrainer, totalEquipment, totalCourt;
82  }calcFee[100], calcAll;
83  struct trainerReceipt{
84      string selectedTrainer;
85      double selectedHours;
86  }trainerReceiptDetails[100];
87  struct trainerDetails{
88      int trainerWage;
89      string trainerName;
90  }trainers[6][6];
91  // struct tagin close
92
93  // account login/menu interface open
94  struct presentStudent{
95      string *currentFname, *currentLname;
96      int currentID;
97      char currentKeyword[100];
98  }currentStudent;
99  struct scholarDetails{
100     char Fname[100], Lname[100];
101     int scholarID;
102     char keyword[100];
103 }scholar[100];
104 struct primaryKey{
105     char firstName[100], lastName[100];
106     int studentID;
107     char password[100];
108 }student[100];
109 int main(){
110     system("cls");
111     ifstream checkFile;
112     int studentCounter=0;
113     checkFile.open("password1.txt");
114 if(checkFile.is_open()){
115     studentCounter=loadFile();
116 }
117     checkFile.close();
118 //   cout << studentCounter << endl; //to check the total student is correct or not
119     int option;
120     cout << "//////////////////////////////////////" << endl;
121     cout << "//UiTM Perlis Online Sport Centre//" << endl;
122     cout << "//////////////////////////////////////" << endl;
123     cout << "1. Sign up for new account\n2. Log in to existing account" << endl;
124     cout << "Your option: ";
125     cin >> option;
126     do{
127     switch(option){
128         case 1:
129             system("cls");
130             signUp(studentCounter);
131             break;
132         case 2:
133             logIn(studentCounter);
134             break;
135         default:
136             cout << "Invalid input! Please re-enter..." << endl;
137             cout << "Your option: ";
138             cin >> option;
139         }
140 }while(option<1 || option>2);
141
142     return 0;
143 }
144 void signUp(int count){
145     cin.ignore();
146     cout << "Enter your first name: ";
147     cin.getline(student[count].firstName, 100);
148     cout << "Enter your last name: ";
149     cin.getline(student[count].lastName, 100);
150     cout << "Enter your student ID: ";
151     cin >> student[count].studentID;
152     cin.ignore();
153     cout << "Enter your password (MUST EXCLUDE SPACE!): ";
154     cin.getline(student[count].password, 100);
155
156     int accountCheck=0;
```

```cpp
157              for(int i=0; i<count; i++){
158                  if(student[count].studentID==scholar[i].scholarID){
159                      cout << "This student ID already has an account! Please login...";
160                      ++accountCheck;
161                      i=count;
162                      Sleep(3500);
163                      main();
164                  }
165              }
166          ifstream loadData1;
167          loadData1.open("password1.txt");
168          if(loadData1.is_open()){
169              int i=0;
170              while(!loadData1.eof()){
171                  loadData1 >> student[i].studentID;
172                  loadData1.getline(student[i].firstName, 100);
173                  ++i;
174              }
175          }
176          loadData1.close();
177          ifstream loadData2;
178          loadData2.open("password2.txt");
179          if(loadData2.is_open()){
180              int i=0;
181              while(!loadData2.eof()){
182                  loadData2.getline(student[i].lastName, 100, ',');
183                  loadData2.getline(student[i].password, 100);
184                  ++i;
185              }
186          }
187          loadData2.close();
188      if(accountCheck==0){
189          ++count;
190          saveFile(count);
191      }
192  }
193  void saveFile(int studentCounter){ //save data to text file
194      ofstream saveData1, saveData2;
195      int endLine1=1, endLine2=1;
196          saveData1.open("password1.txt");
197          if(!saveData1.is_open()){
198              cerr << "Unabled to open the file :(";
199          }
200      for(int j=0; j<studentCounter; j++){
201          saveData1 << student[j].studentID << student[j].firstName;
202          if(endLine1<studentCounter)
203              saveData1 << endl;
204          endLine1++;
205      }
206          saveData1.close();
207          saveData2.open("password2.txt");
208          if(!saveData2.is_open()){
209              cerr << "Unabled to open the file :(";
210          }
211      for(int i=0; i<studentCounter; i++){
212          saveData2 << student[i].lastName << "," << student[i].password;
213          if(endLine2<studentCounter)
214              saveData2 << endl;
215          endLine2++;
216      }
217          saveData2.close();
218          cout << "Sign up completed! Please login...";
219          Sleep(3500);
220          main();
221  }
222  int loadFile(){ //load data from text file
223      ifstream loadData1, loadData2;
224      int i=0, j=0;
225      loadData1.open("password1.txt");
226      if(!loadData1.is_open()){
227          cerr << "Unabled to open the file :(";
228      }
229      while(!loadData1.eof()){
230          loadData1 >> scholar[i].scholarID;
231          loadData1.getline(scholar[i].Fname, 100);
232          ++i;
233      }
234          loadData1.close();
```

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```cpp
235         loadData2.open("password2.txt");
236         if(!loadData2.is_open()){
237             cerr << "Unabled to open the file :(";
238         }
239     while(!loadData2.eof()){
240         loadData2.getline(scholar[j].Lname, 100, ',');
241         loadData2.getline(scholar[j].keyword, 100);
242         ++j;
243     }
244     /* for(int i=0; i<j; i++){ //to check whether the read data is successfully running or not
245         cout << scholar[i].scholarID << "," << scholar[i].Fname
246             << ",";
247         cout << scholar[i].Lname << "," << scholar[i].keyword
248             << endl;
249     }*/
250         loadData2.close();
251         return j;
252     }
253     void logIn(int count){
254         system("cls");
255         cout << "Enter your student ID: ";
256         cin >> currentStudent.currentID;
257         cin.ignore();
258         cout << "Enter your password (MUST EXCLUDE SPACE!): ";
259         cin.getline(currentStudent.currentKeyword, 100);
260
261         int j=0, current, invalid=0;
262         while(j<count){ //search student id(if not available then cout invalid command)
263             if(currentStudent.currentID==scholar[j].scholarID){
264                 current=j;
265                 j=count;
266             }
267             else if(currentStudent.currentID!=scholar[j].scholarID){
268                 ++j;
269                 if(j==count){
270                     invalid++;
271                 }
272             }
273         }
```

```cpp
274         string compare=scholar[current].keyword;
275         if(currentStudent.currentKeyword!=compare){
276             invalid++;
277         }
278         string firstName=scholar[current].Fname, lastName=scholar[current].Lname;
279         switch(invalid){
280             case 0:
281                 currentStudent.currentFname=&firstName;
282                 currentStudent.currentLname=&lastName;
283                 cout << "Login successfully!";
284                 Sleep(3500);
285                 menu();
286                 break;
287             case 1:
288             case 2:
289                 cout << "Incorrect student ID or password! Please login again...";
290                 Sleep(3500);
291                 main();
292                 break;
293         }
294     }
295     void menu(){
296         system("cls");
297     //  cout << "Forgot: " << forgot << endl;
298         cout << "Welcome student, " << *currentStudent.currentFname << "!" << " To" << endl;
299         cout << "///////////////////////////////////////" << endl;
300         cout << "//UiTM Perlis Online Sport Centre//" << endl;
301         cout << "///////////////////////////////////////" << endl;
302         cout << "\nMain Menu >> " << endl;
303         cout << "1.Court Reservation" << endl;
304         cout << "2.Sport Equipments" << endl;
305         cout << "3.Trainer Reservation" << endl;
306         cout << "4.Print Receipt" << endl;
307         cout << "5.Log Out" << endl;
308         cout << "\nPlease select an option: ";
309         int option;
310         cin >> option;
311         while(option<1 || option>5)
312         {
```

```cpp
313                  cout << "\nYou've entered an invalid input! Please re-enter..." <<
314                  cout << "Select a proper option: ";
315                  cin >> option;
316          }
317          system("cls");
318          switch(option)
319          {
320              case 1:
321                  courtReservation();
322                  break;
323              case 2:
324                  equipmentReservation();
325                  break;
326
327              case 3:
328                  trainer();
329                  displayTrainer();
330                  break;
331
332              case 4:
333                  printReceipt();
334                  break;
335
336              case 5:
337                  logOut();
338                  break;
339          }
340  }
341  void logOut(){
342      int PrintReceipt;
343      if(forgot<1){
344          cout << "Oops! Looks like you didn't print the receipt yet." << endl;
345          cout << "Press 1 to print receipt or 2 to logout...";
346          cin >> PrintReceipt;
347          while(PrintReceipt<1 || PrintReceipt>2){
348              cout << "You've entered an invalid input! Please re-enter...";
349              cin >> PrintReceipt;
350          }
351          system("cls");
```

```cpp
352      if(PrintReceipt==1){
353          printReceipt();
354      }
355      else{
356          cout << "Logout successfully!" << endl;
357          cout << "Thanks for using our service, wish you a great day! :)" << endl;
358      }
359      }
360      else{
361          cout << "Logout successfully!" << endl;
362          cout << "Thanks for using our service, wish you a great day! :)" << endl;
363      }
364  }
365  // account login/menu interface close
366
367  // function kemal open
368  void courtReservation(){
369      int option;
370      forgot=0;
371      float total, hours;
372      if(allCourt>=1){
373          cout << "Your next reservation made for this service will add up with the previous one...";
374          Sleep(6000);
375          system("cls");
376      }
377      cout << "*************************************"<<endl
378          << "Welcome to UiTM Perlis Sport Centre"<<endl
379          << "         Court Reservation         "<<endl
380          << "*************************************"<<endl<<endl
381          <<"Please choose your sport today:"<<endl<<endl;
382
383      file();
384      cout << "\nEnter an option: ";
385      cin >> option;
386
387      while(option<1 || option>6)
388      {
389          cout << "\nYou've entered invalid input! Please re-enter..." << endl;
390          cout << "Please choose a proper option: ";
```

```cpp
391              cin >> option;
392          }
393          if(option==1)
394          {
395              cout << "Enter how many hour(s) do you want: ";
396              cin >> hours;
397              courtReceiptDetails[courtCounter].selectedCourt=sport[0].sukan;
398              courtReceiptDetails[courtCounter].selectedHours=hours;
399              {
400              total=sport[0].price*hours;
401              }
402              duit(total);
403          }
404          else if(option==2)
405          {
406              cout << "Enter how many hour(s) do you want: ";
407              cin >> hours;
408              courtReceiptDetails[courtCounter].selectedCourt=sport[1].sukan;
409              courtReceiptDetails[courtCounter].selectedHours=hours;
410              {
411              total=sport[1].price*hours;
412              }
413              duit(total);
414          }
415          else if(option==3)
416          {
417              cout << "Enter how many hour(s) do you want: ";
418              cin >> hours;
419              courtReceiptDetails[courtCounter].selectedCourt=sport[2].sukan;
420              courtReceiptDetails[courtCounter].selectedHours=hours;
421              {
422              total=sport[2].price*hours;
423              }
424              duit(total);
425          }
426          if(option==4)
427          {
428              cout << "Enter how many hour(s) do you want: ";
429              cin >> hours;
430              courtReceiptDetails[courtCounter].selectedCourt=sport[3].sukan;
431              courtReceiptDetails[courtCounter].selectedHours=hours;
432              {
433              total=sport[3].price*hours;
434              }
435              duit(total);
436          }
437          if(option==5)
438          {
439              cout << "Enter how many hour(s) do you want: ";
440              cin >> hours;
441              courtReceiptDetails[courtCounter].selectedCourt=sport[4].sukan;
442              courtReceiptDetails[courtCounter].selectedHours=hours;
443              {
444              total=sport[4].price*hours;
445              }
446              duit(total);
447          }
448          if(option==6)
449          {
450              cout << "Enter how many hour(s) do you want: ";
451              cin >> hours;
452              courtReceiptDetails[courtCounter].selectedCourt=sport[5].sukan;
453              courtReceiptDetails[courtCounter].selectedHours=hours;
454              {
455              total=sport[5].price*hours;
456              }
457              duit(total);
458          }
459      }
460  double duit(double total){
461      int sambung;
462      ++allCourt; // taqin tambah +++++++++++++++++++++++++++++++++++++++++
463      ++purchaseCounter; // taqin tambah +++++++++++++++++++++++++++++++++++++
464      calcFee[courtCounter].totalCourt=total; // taqin tambah ++++++++++++++
465      ++courtCounter; // taqin tambah +++++++++++++++++++++++++++++++++++++++
466      Total+=total;
467      cout << "\nTotal fees for court reservation: RM" << Total;
468      total=0;
```

```
469        cout << "\nPress 1 to continue or press 2 to go back at main menu >> ";
470        cin >> sambung;
471        while(sambung<1 || sambung>2)
472        {
473            cout << "\nYou've entered invalid input! Please re-enter..." << endl;
474            cout << "Choose a proper option: ";
475            cin >> sambung;
476        }
477        switch(sambung)
478        {
479            case 1:
480                Sleep(1500);
481                system("cls");
482                courtReservation();
483                return Total;
484                break;
485            case 2:
486                Sleep(1500);
487                system("cls");
488                menu();
489                return Total;
490                break;
491        }
492
493    }
494    int file(){
495        ifstream courtReserve;
496        courtReserve.open("court.txt");
497        if(courtReserve.fail())
498        {
499            cerr<<"error opening file"<<endl;
500            exit(1);
501        }
502
503        int i=0;
504        while(!courtReserve.eof())
505        {
506        courtReserve >> sport[i].price;
507        getline(courtReserve, sport[i].sukan,';');
```

```
508        courtReserve >> courtRow[i]; // taqin tambah ++++++++++++++++++++++++++++++++++++++
509        cout << i+1 <<"."<<sport[i].sukan << " " << sport[i].price << " per hour" <<endl;
510        cout << endl;
511        i++;
512        }
513        courtReserve.close();
514    }
515    // function kemal close
516
517    // function apikkk open
518    void counterEquipment(){ // taqin tambah +++++++++++++++++++++++++++++++++++++++
519        ++allEquipment;
520        ++equipmentCounter;
521        ++purchaseCounter;
522    }
523    int unitcounter (int price){
524        int total, n;
525        cout << " how many would you like to rent :";
526        cin >> n;
527        equipmentReceiptDetails[equipmentCounter].numUnit=n;
528        total=price*n;
529        calcFee[equipmentCounter].totalEquipment=total; // taqin tambah+++++++++++++++++++++++
530        return total;
531    }
532    void RentTotal (int total){
533        cout << "\n## Accumulative Total = RM"<<total<< " ##" << endl;
534        cout << "\nIf you would like to continue...";
535        cout << "\n Choose your next sport today or press 0 to show total\n" <<endl;
536    }
537    int readFile(){
538
539        ifstream equipmentFile;
540        equipmentFile.open("equipments.txt");
541        if(equipmentFile.fail())
542        {
543            cerr<<"error opening file"<<endl;
544            exit(1);
545        }
546        int i=0;
```

10

```cpp
547         while(!equipmentFile.eof())
548         {
549             equipmentFile >> eqp[i].rental;
550             getline(equipmentFile, eqp[i].name, ':');
551             equipmentFile >> equipmentRow[i]; // taqin tambah ++++++++++++++++++++++++++++++++++++++++++++
552     //      cout<<eqp[i].name<<":";
553     //      cout<<eqp[i].rental<<endl;
554             i++;
555         }
556         equipmentFile.close();
557     }
558  void errorrental(){
559      cout << "*ERROR* \nPlease re-enter selection\n";
560  }
561  void equipmentReservation(){
562
563      int sport, choice, value, n, rent;
564      forgot=0;
565      if(allEquipment>=1){
566          cout << "Your next reservation made for this service will add up with the previous one...";
567          Sleep(6000);
568          system("cls");
569      }
570      cout << "\n## Welcome to UiTM Perlis Sport Centre ##" <<endl;
571      cout << "\n Equipment Rental Service Department" <<endl ;
572      cout << "\n Choose your sport today or press 0 to show total\n" <<endl;
573      readFile();
574      string anyKEY; // taqin tambah
575      do
576      {
577          cout << " 1. Futsal\t 3. Volleyball\t 5. Badminton\n";
578          cout << " 2. Tennis\t 4. Takraw\t 6. Squash\n";
579          cin>>sport;
580
581          // taqin baiki
582          while(sport<0 || sport>6){
583              errorrental();
584              cout << "Select a proper option: ";
585              cin >> sport;
```

```cpp
586      }
587          // taqin baiki
588
589          switch (sport)
590          {
591              case 1 :                              //futsal
592              {
593                  cout <<"\n Choose an item for rental:(1/2/3)"<<endl;
594                  cout <<eqp[0].name<<"\t RM"<<eqp[0].rental<<" (1)"<<endl;
595                  cout <<eqp[1].name<<"\t\t RM"<<eqp[1].rental<<" (2)"<<endl;
596                  cout <<eqp[2].name<<"\t RM"<<eqp[2].rental<<" (3)"<<endl;
597                  cin>>choice;
598
599                  if (choice == 1)
600                  {
601                      value=eqp[0].rental;
602                      equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[0].name;
603                      rent+=unitcounter(value);
604                      counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++++++++++
605                  }
606                  else if (choice == 2)
607                  {
608                      value=eqp[1].rental;
609                      equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[1].name;
610                      rent+=unitcounter(value);
611                      counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++++++++++
612                  }
613                  else if (choice == 3)
614                  {
615                      value=eqp[2].rental;
616                      equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[2].name;
617                      rent+=unitcounter(value);
618                      counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++++++++++
619                  }
620                  else        //error404
621                  {
622                      errorrental();
623                  }
624                  RentTotal(rent);
```

```cpp
625             break;
626           }
627
628           case 2 :                              //tennis
629           {
630               cout <<"\n Choose an item for rental:(1/2)"<< endl;
631               cout <<eqp[3].name<<"\t RM"<<eqp[3].rental<<" (1)"<<endl;
632               cout <<eqp[4].name<<"\t RM"<<eqp[4].rental<<" (2)"<<endl;
633               cin>>choice;
634
635                if (choice == 1)
636                {
637                   value=eqp[3].rental;
638                   equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[3].name;
639                   rent+=unitcounter(value);
640                   counterEquipment(); // taqin tambah +++++++++++++++++++++++++++++++++++++++
641                }
642                else if (choice == 2)
643                {
644                   value=eqp[4].rental;
645                   equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[4].name;
646                   rent+=unitcounter(value);
647                   counterEquipment(); // taqin tambah +++++++++++++++++++++++++++++++++++++++
648                }
649                else       //error404
650                {
651                   errorrental();
652                }
653               RentTotal(rent);
654           break;
655           }
656
657           case 3 :                              //volleyball
658           {
659                cout <<"\n Choose an item for rental:(1/2)"<< endl;
660                cout <<eqp[5].name<<"\t RM"<<eqp[5].rental<<" (1)"<<endl;
661               cout <<eqp[6].name<<"\t RM"<<eqp[6].rental<<" (2)"<<endl;
662                cin>>choice;
663
664                if (choice == 1)
665                {
666                   value=eqp[5].rental;
667                   equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[5].name;
668                   rent+=unitcounter(value);
669                   counterEquipment(); // taqin tambah +++++++++++++++++++++++++++++++++++++++
670                }
671                else if (choice == 2)
672                {
673                   value=eqp[6].rental;
674                   equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[6].name;
675                   rent+=unitcounter(value);
676                   counterEquipment(); // taqin tambah +++++++++++++++++++++++++++++++++++++++
677                }
678                else       //error404
679                {
680                   errorrental();
681                }
682               RentTotal(rent);
683           break;
684           }
685
686           case 4 :                              //takraw
687           {
688               cout <<"\n Choose an item for rental:"<< endl;
689               cout <<eqp[7].name<<"\t RM"<<eqp[7].rental<<" (1)"<<endl;
690               cin>>choice;
691
692                if (choice == 1)
693                {
694                   value=eqp[7].rental;
695                   equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[7].name;
696                   rent+=unitcounter(value);
697                   counterEquipment(); // taqin tambah +++++++++++++++++++++++++++++++++++++++
698                }
699                else       //error404
700                {
701                   errorrental();
702                }
```

```cpp
703                RentTotal(rent);
704            break;
705        }
706
707        case 5 :                          //badminton
708        {
709            cout <<"\n Choose an item for rental:(1/2)"<< endl;
710            cout <<eqp[8].name<<"\t RM"<<eqp[8].rental<<" (1)"<<endl;
711            cout <<eqp[9].name<<"\t RM"<<eqp[9].rental<<" (2)"<<endl;
712            cin>>choice;
713
714            if (choice == 1)
715            {
716                value=eqp[8].rental;
717                equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[8].name;
718                rent+=unitcounter(value);
719                counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++
720            }
721            else if (choice == 2)
722            {
723                value=eqp[9].rental;
724                equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[9].name;
725                rent+=unitcounter(value);
726                counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++
727            }
728            else          //error404
729            {
730                errorrental();
731            }
732
733            RentTotal(rent);
734        break;
735        }
736
737        case 6 :                          //squash
738        {
739            cout <<"\n Choose an item for rental:(1/2)"<< endl;
740            cout <<eqp[10].name<<"\t RM"<<eqp[10].rental<<" (1)"<<endl;
741            cout <<eqp[11].name<<"\t RM"<<eqp[11].rental<<" (2)"<<endl;
742            cin>>choice;
743
744            if (choice == 1)
745            {
746                value=eqp[10].rental;
747                equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[10].name;
748                rent+=unitcounter(value);
749                counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++
750            }
751            else if (choice == 2)
752            {
753                value=eqp[11].rental;
754                equipmentReceiptDetails[equipmentCounter].selectedEquipment=eqp[11].name;
755                rent+=unitcounter(value);
756                counterEquipment(); // taqin tambah ++++++++++++++++++++++++++++++++++++
757            }
758            else          //error404
759            {
760                errorrental();
761            }
762            RentTotal(rent);
763        break;
764        }
765        case 0 :        //no choice
766        {
767            cout << " No sport selected"<< endl;
768    //      cout << "\n Please enter a valid number or press 0 to exit program" << endl;
769        break;
770        }
771    }
772
773    }while (sport !=0);
774    {
775    cout << "---------------------------------";
776    cout << "\nTotal rent = RM"<<rent<< endl;
777    cout << "Payment upon pick-up" << endl;
778    cout << "Press any key...";
779    cin >> anyKEY;
```

13

```cpp
781        system("cls");
782        menu();
783    }
784  }
785  // function apikkk close
786
787  // function tagin open
788  void calculateAllReceipt(){
789      calcAll.receipt.totalAll=0;
790      if(allCourt!=0){
791  for(int i=0; i<allCourt; i++){
792      calcAll.receipt.totalAll+=calcFee[i].totalCourt;
793  }
794      }
795      if(allEquipment!=0){
796  for(int i=0; i<allEquipment; i++){
797      calcAll.receipt.totalAll+=calcFee[i].totalEquipment;
798  }
799      }
800      if(allTrainer!=0){
801  for(int i=0; i<allTrainer; i++){
802      calcAll.receipt.totalAll+=calcFee[i].totalTrainer;
803  }
804      }
805  }
806  void printReceipt(){
807      if(purchaseCounter==0){
808          cout << "Hmmm looks like you didn't made any reservation of our service yet." << endl;
809          Sleep(5000);
810          cout << "How about you have a look first? :)";
811          Sleep(3000);
812          menu();
813      }
814      else{
815      ++forgot;
816      int num=1;
817      string anyKEY;
818      system("cls");
819      cout << "#####################################" << endl;
820      cout << "## UiTM PERLIS OFFICIAL INVOICE ##" << endl;
821      cout << "#####################################" << endl;
822      cout << endl;
823      cout << "Student's Name: " << *currentStudent.currentFname
824          << " " << *currentStudent.currentLname << endl;
825      cout << "Student's ID: " << currentStudent.currentID << endl;
826      cout << endl;
827      cout << "=================================================================================" << endl;
828      cout << "==NO.==          DESCRIPTION          ==   QUANTITY   ==          AMOUNT          ==" << endl;
829
830      // court reservation
831      if(allCourt!=0){
832  for(int i=0; i<allCourt; i++){
833      cout << "  " << num << ".   ";
834      cout << " Court Reservation: " << "\t\t       " << courtReceiptDetails[i].selectedHours << " hours\t\tRM" << calcFee[i].totalCourt << endl;
835      cout << "           " << courtReceiptDetails[i].selectedCourt << endl;
836      ++num;
837  }
838      }
839      // court reservation
840
841      // sport equipment reservation
842      if(allEquipment!=0){
843  for(int i=0; i<allEquipment; i++){
844      cout << "  " << num << ".   ";
845      cout << " Sport Equipment Reservation:" << "\t\t" << equipmentReceiptDetails[i].numUnit << "x\t\tRM" << calcFee[i].totalEquipment << endl;
846      cout << "           " << equipmentReceiptDetails[i].selectedEquipment << endl;
847      ++num;
848  }
849      }
850      // sport equipment reservation
851
852      // trainer reservation
853      if(allTrainer!=0){
854  for(int i=0; i<allTrainer; i++){
855      cout << "  " << num << ".   ";
856      cout << " Trainer Reservation: " << "\t\t     " << trainerReceiptDetails[i].selectedHours << " hours\t\tRM" << calcFee[i].totalTrainer << endl;
857      cout << "           " << trainerReceiptDetails[i].selectedTrainer << endl;
858      ++num;
```

```cpp
859        }
860      }
861      calculateAllReceipt();
862      cout << "=============================================================================" << endl;
863      cout << "                                                        TOTAL    =="
864          |  << "\tRM" << calcAll.receipt.totalAll;
865      // trainer reservation
866      cout << endl;
867      cout << "Press any key to continue: ";
868      cin >> anyKEY;
869    menu();
870      }
871    }
872    void trainer(){
873        ifstream readFile;
874        readFile.open("trainer.txt");
875        if(!readFile.is_open()){
876            cerr << "Unabled to open the file...";
877        }
878        else
879            getTrainerData(trainers, readFile);
880        readFile.close();
881    }
882    void getTrainerData(struct trainerDetails listTrainer[][6], ifstream &getFile){
883        int i=0;
884        while(!getFile.eof()){
885            int j=0;
886            if(i==0){
887                    while(j<6){
888                        getFile >> listTrainer[i][j].trainerWage;
889                        ++j;
890                        getline(getFile, listTrainer[i][j].trainerName, ',');
891                        ++j;
892                        if(j==6){
893                            getFile >> row[0];
894                        }
895                    }
896                }
897            if(i==1){
898                    while(j<6){
899                        getFile >> listTrainer[i][j].trainerWage;
900                        ++j;
901                        getline(getFile, listTrainer[i][j].trainerName, ',');
902                        ++j;
903                        if(j==6){
904                            getFile >> row[1];
905                        }
906                    }
907                }
908            if(i==2){
909                    while(j<6){
910                        getFile >> listTrainer[i][j].trainerWage;
911                        ++j;
912                        getline(getFile, listTrainer[i][j].trainerName, ',');
913                        ++j;
914                        if(j==6){
915                            getFile >> row[2];
916                        }
917                    }
918                }
919            if(i==3){
920                    while(j<6){
921                        getFile >> listTrainer[i][j].trainerWage;
922                        ++j;
923                        getline(getFile, listTrainer[i][j].trainerName, ',');
924                        ++j;
925                        if(j==6){
926                            getFile >> row[3];
927                        }
928                    }
929                }
930            if(i==4){
931                    while(j<6){
932                        getFile >> listTrainer[i][j].trainerWage;
933                        ++j;
934                        getline(getFile, listTrainer[i][j].trainerName, ',');
935                        ++j;
936                        if(j==6){
```

```cpp
937                             getFile >> row[4];
938                         }
939                     }
940                 }
941             if(i==5){
942                     while(j<6){
943                         getFile >> listTrainer[i][j].trainerWage;
944                         ++j;
945                         getline(getFile, listTrainer[i][j].trainerName, ',');
946                         ++j;
947                         if(j==6){
948                             getFile >> row[5];
949                         }
950                     }
951                 }
952             i++;
953         }
954 }
955 void displayTrainer(){
956     system("cls");
957     forgot=0;
958     if(allTrainer>=1){
959         cout << "Your next reservation made for this service will add up with the previous one...";
960         Sleep(6000);
961         system("cls");
962     }
963     cout << "^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^" << endl;
964     cout << "^^Welcome to Trainer Reservation of UiTM Perlis!^^" << endl;
965     cout << "^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^" << endl;
966     cout << "\n1.Futsal" << endl;
967     cout << "2.Tennis" << endl;
968     cout << "3.Volleyball" << endl;
969     cout << "4.Takraw" << endl;
970     cout << "5.Badminton" << endl;
971     cout << "6.Squasy" << endl;
972     cout << "7.Back to main menu" << endl;
973     cout << "\nChoose an option: ";
974     int option;
975     cin >> option;
976         while(option<1 || option>7)
977         {
978             cout << "\nYou've entered invalid input! Please re-enter..." << endl;
979             cout << "Please choose a proper option: ";
980             cin >> option;
981         }
982     system("cls");
983     int i, counter=1, choose;
984     switch(option){
985         case 1:
986             i=0;
987             for(int j=0; j<6; j++){
988                 ++j;
989                 if(j%2!=0){
990                     cout << counter << "."
991                         << trainers[i][j].trainerName << " ";
992                     counter++;
993                 }
994                 --j;
995                 if(j%2==0){
996                     cout << "(RM" << trainers[i][j].trainerWage
997                         << " per hour)" << endl;
998                 }
999             }
1000            break;
1001        case 2:
1002            i=1;
1003            for(int j=0; j<6; j++){
1004                ++j;
1005                if(j%2!=0){
1006                    cout << counter << "."
1007                        << trainers[i][j].trainerName << " ";
1008                    counter++;
1009                }
1010                --j;
1011                if(j%2==0){
1012                    cout << "(RM" << trainers[i][j].trainerWage
1013                        << " per hour)" << endl;
1014                }
```

```cpp
                    }
                break;
            case 3:
                i=2;
                for(int j=0; j<6; j++){
                    ++j;
                    if(j%2!=0){
                        cout << counter << "."
                             << trainers[i][j].trainerName << " ";
                        counter++;
                    }
                    --j;
                    if(j%2==0){
                        cout << "(RM" << trainers[i][j].trainerWage
                             << " per hour)" << endl;
                    }
                }
                break;
            case 4:
                i=3;
                for(int j=0; j<6; j++){
                    ++j;
                    if(j%2!=0){
                        cout << counter << "."
                             << trainers[i][j].trainerName << " ";
                        counter++;
                    }
                    --j;
                    if(j%2==0){
                        cout << "(RM" << trainers[i][j].trainerWage
                             << " per hour)" << endl;
                    }
                }
                break;
            case 5:
                i=4;
                for(int j=0; j<6; j++){
                    ++j;
                    if(j%2!=0){
```
```cpp
                        cout << counter << "."
                             << trainers[i][j].trainerName << " ";
                        counter++;
                    }
                    --j;
                    if(j%2==0){
                        cout << "(RM" << trainers[i][j].trainerWage
                             << " per hour)" << endl;
                    }
                }
                break;
            case 6:
                i=5;
                for(int j=0; j<6; j++){
                    ++j;
                    if(j%2!=0){
                        cout << counter << "."
                             << trainers[i][j].trainerName << " ";
                        counter++;
                    }
                    --j;
                    if(j%2==0){
                        cout << "(RM" << trainers[i][j].trainerWage
                             << " per hour)" << endl;
                    }
                }
                break;
            case 7:
                menu();
                break;
        }
        cout << endl;
        cout << "Please choose your trainer: ";
        cin >> choose;
        while(choose<1 || choose>3)
        {
            cout << "\nYou've entered invalid input! Please re-enter..." << endl;
            cout << "Choose a proper option: ";
            cin >> choose;
```

```cpp
1093                }
1094                chooseTrainer(i, choose);
1095        }
1096  void chooseTrainer(int &sports, int &coach){
1097        string trainer;
1098        double wage;
1099        switch(coach){
1100            case 1:
1101                --coach; //trainer wage
1102                wage=trainers[sports][coach].trainerWage;
1103                //cout << wage;
1104                ++coach; //trainer name
1105                trainer=trainers[sports][coach].trainerName;
1106                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1107                break;
1108            case 2:
1109                      //trainer wage
1110                wage=trainers[sports][coach].trainerWage;
1111                //cout << wage;
1112                ++coach; //trainer name
1113                trainer=trainers[sports][coach].trainerName;
1114                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1115                break;
1116            case 3:
1117                ++coach; //trainer wage
1118                wage=trainers[sports][coach].trainerWage;
1119                //cout << wage;
1120                ++coach; //trainer name
1121                trainer=trainers[sports][coach].trainerName;
1122                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1123                break;
1124        }
1125        trainerFee(wage);
1126  }
1127  void trainerFee(double salary){
1128        ++allTrainer;
1129        ++purchaseCounter;
1130        double hours;
1131        cout << "Enter how many hour(s) do you want: ";
```

```cpp
1106                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1107                break;
1108            case 2:
1109                      //trainer wage
1110                wage=trainers[sports][coach].trainerWage;
1111                //cout << wage;
1112                ++coach; //trainer name
1113                trainer=trainers[sports][coach].trainerName;
1114                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1115                break;
1116            case 3:
1117                ++coach; //trainer wage
1118                wage=trainers[sports][coach].trainerWage;
1119                //cout << wage;
1120                ++coach; //trainer name
1121                trainer=trainers[sports][coach].trainerName;
1122                trainerReceiptDetails[trainerCounter].selectedTrainer=trainer;
1123                break;
1124        }
1125        trainerFee(wage);
1126  }
1127  void trainerFee(double salary){
1128        ++allTrainer;
1129        ++purchaseCounter;
1130        double hours;
1131        cout << "Enter how many hour(s) do you want: ";
1132        cin >> hours;
1133        trainerReceiptDetails[trainerCounter].selectedHours=hours;
1134        calcFee[trainerCounter].totalTrainer=hours*salary;
1135        cout << endl;
1136        cout << "Your total pay would be RM" << calcFee[trainerCounter].totalTrainer
1137            << endl;
1138        cout << "Press any key to continue: ";
1139        string anyKEY;
1140        cin >> anyKEY;
1141        ++trainerCounter;
1142        menu();
1143  }
1144    // function taqin close
```
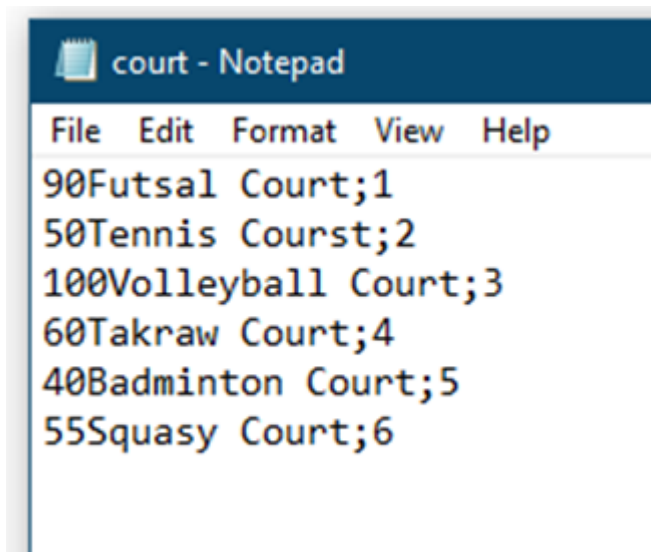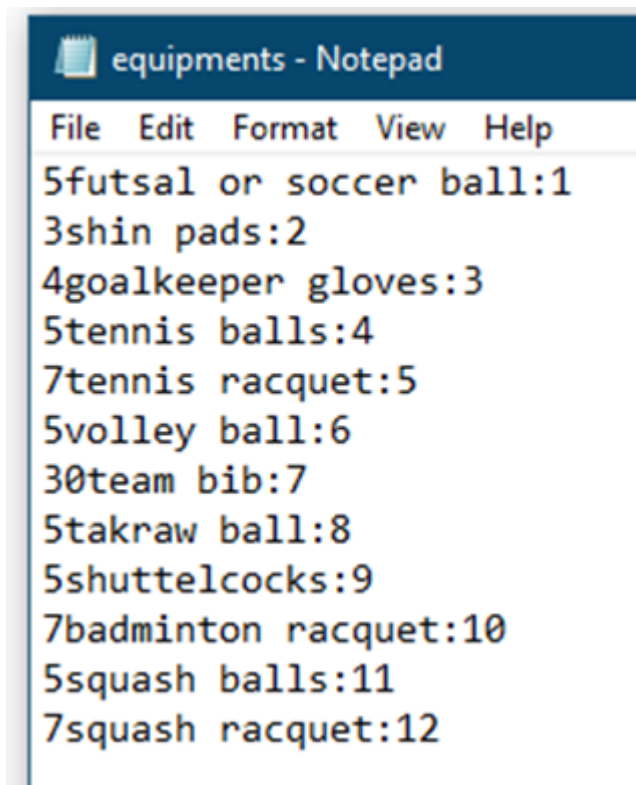
PROGRAM TEXT FILES

court - Notepad

File   Edit   Format   View   Help

```
90Futsal Court;1
50Tennis Courst;2
100Volleyball Court;3
60Takraw Court;4
40Badminton Court;5
55Squasy Court;6
```

equipments - Notepad

File   Edit   Format   View   Help

```
5futsal or soccer ball:1
3shin pads:2
4goalkeeper gloves:3
5tennis balls:4
7tennis racquet:5
5volley ball:6
30team bib:7
5takraw ball:8
5shuttelcocks:9
7badminton racquet:10
5squash balls:11
7squash racquet:12
```

```
trainer - Notepad

File   Edit   Format   View   Help

500Jurgen Klopp,450Pep Guordiola,399Joachim Low,1
489Roger Federer,449Novak Djokovic,389Rafael Nadal,2
525Shoyo Hinata,430Kiyoko Shimuzu,419Tobio Kageyama,3
470Suebsak Phunsueb,425Anuwat Chaichana,325Azlan Alias,4
469Lee Chong Wei,460Lin Dan,400Taufik Hidayat,5
499Nicol David,439Dani Pedrosa,415Valentino Rossi,6
```

Sample Output 1:

```
 C:\Users\USER\Desktop\Degree\Sem2\CSC404\Coding\Group Project Sport Centre\sportCentre_finalize\sportCentre_finalize.exe

####################################
## UiTM PERLIS OFFICIAL INVOICE ##
####################################

Student's Name: muhammad zainul muttaqin mohd zainudin
Student's ID: 2020828578


==================================================================================================
==NO.==           DESCRIPTION            ==    QUANTITY    ==          AMOUNT            ==
  1.    Court Reservation:                    2 hours          RM100
        Tennis Courst
  2.    Sport Equipment Reservation:           3x                          RM15
        tennis balls
  3.    Sport Equipment Reservation:           3x                          RM21
        tennis racquet
  4.    Trainer Reservation:                  1.5 hours                   RM673.5
        Novak Djokovic
==================================================================================================
                                             TOTAL     ==     RM809.5
Press any key to continue:
```

Sample Output 2:

```
 C:\Users\USER\Desktop\Degree\Sem2\CSC404\Coding\Group Project Sport Centre\sportCentre_finalize\sportCentre_finalize.exe

####################################
## UiTM PERLIS OFFICIAL INVOICE ##
####################################

Student's Name: muhammad akmal ahmad nazri
Student's ID: 2020819092


==================================================================================================
==NO.==           DESCRIPTION            ==    QUANTITY    ==          AMOUNT            ==
  1.    Court Reservation:                    3 hours          RM270
        Futsal Court
  2.    Sport Equipment Reservation:           5x                          RM25
        futsal or soccer ball
  3.    Sport Equipment Reservation:           1x                          RM3
        shin pads
  4.    Sport Equipment Reservation:           2x                          RM8
        goalkeeper gloves
  5.    Trainer Reservation:                  0.5 hours                   RM250
        Jurgen Klopp
==================================================================================================
                                             TOTAL     ==     RM556
Press any key to continue: _
```