Computer Science

CAPE 2019

Internal Assessment

Group Memebers: Jevaughn Crawford, Peter-John Henry, Khemani Roberts

Teacher: Mr. Edwards

Centre no.: 100052

TABLE OF CONTENT

Introduction

The researchers have compiled a project entailing Software Engineering on a Tennis Club in Portmore, St. Catherine. The principles and ethics of Software Engineering have been used to gather this project.

Acknowledgement

The researchers would like to express immense gratitude to the Computer Science teacher, Mr. Edwards, for instilling the principles and giving the knowledge for our matriculation. Secondly, I would like to express thanks to the acting principal, Mr. Robinson, for instilling the manhood among our gentlemen and helping us to be disciplined.

Problem Statement

The coach of Greater Portmore table tennis club needs a sufficient system to monitor its players as well as money spent and earned at the club. Money is often lost because there is not a sufficient way to track it. The old paper based system is not reliable. On multiple occasions, heavy rains caused flooding destroying the paper based records as well as rodents and other creatures would often destroy old records stored in the archive. It also proves difficult to track each individual player's progress as there are a lot of players and coaches can sometimes forget and get confused.

The system will be designed to help keep track off the payments made to the club as well as the progress made by each individual player. Players information such as player names, ID number, gender, money paid, will be inputted to the system by the secretary. The system will also allow the main coach to input coaches notes, which will be notes made for specific players that contains information about the coach's thoughts about the specific players. The main coach will also have the option to input the number of tournaments won by each player as well as the players rank. The assistant coach will only have the option to input to view the notes and the progress report for each player system. The fitness coach will also have the option to input various exercises specific for each player as well as any pre-existing medical conditions that any player may have. The program will be a menu driven interface and will have options for the all users to choose the function he wants the program to perform.

Fact Finding Tools

In order to get the necessary information required for the functioning of the project and efficient flow of the system, fact finding tools such as an observation, interview and questionnaires.

Observation

The particular activities that were to be observed and recorded are known beforehand, and so no time is wasted in figuring out what to observe. Fieldwork generally occurs over a prolonged period, so that a sufficient rapport could be established with the study population and directly participates in the study population's activities. This permitted an understanding of the study population and their activities from their own perspective.

As a member of the club, the weekly meetings were observed and the problems could be clearly seen, such as unorganized member information, confusion with finances and no clear goals to be achieved such as fitness, skills and training progress.

Observation was used because it easy to do and less expensive. A first-hand account could be experienced, hence the information will be more in depth and reliable.

Interview

This is the first step in designing the system as it determines precisely what is needed to be known. It also helps to delve deeper into information that is already present and adds additional information that needs to be established.

The coach of the tennis club was interviewed about the problems he faced while managing the club as well as what things he would add or change, as well as specific needs. The responses received from this interview has helped in engineering a precise system to solve all these problems.

An interview was used because it got a complete and direct answer for the questions asked and the information was received was easy to comprehend. It was also suitable to untangle complex topics that the questionnaire would not be able to grasp.

The biggest problem that all of them seem to have is the tracking of money. The secretary seems to have a problem with monitoring the amount of money spent and earned at the club. The secretary also has a problem with tracking the money paid by players leading to the players sometimes paying more money than they should or less. When asked how much time is spent correcting these mistakes, she stated that about 10 hours a week is wasted on this problem. The players also complained that they do not get enough attention individually from the coaches. When asked of their opinion for why this is the case, most of them stated that there are simply too much of them for the coaches to remember every detail of an individual players playing style along with other details. The coaches seem to agree with the majority of the players, however, they do not believe that simply hiring more coaches will solve the issue. They think it will be more cost effective in the long run if they had software to help them with this issue. The secretary has asked that the system be able to keep track of payments made by each player as well as the amount of money spent at the club. The coaches have asked that the system be also able to help them track the progress off each individual player to prevent them from falling off track.

Sample questions

1. What is the biggest problem faced at the club?

2. Do you think an automated system is the best way to solve these problems?

3. Approximately how much time is spent solving these problems created by the current system?

For coaches

4. Do you need a system to keep track of players?

5. What would you like to input into the system?

6. Do you think that a software is the best way to keep track of the players rather than a paper based system?

Questionnaire

This fact finding method tabulates facts efficiently and gives the respondent greater freedom when inputting answers and so it can gather information about various issues of system from a number of persons.

Questionnaires were given to members of the club about what should be improved as well as their opinion on new things to be put in place. How well it will be able to solve the current problems are also queried as well as suggestions from this sample population. Questionnaires will also be given to users of the newly engineered system to grasp feedback and monitor the success.

A questionnaire was used as it was very dependable and helped to obtain information and feedback from a large amount of people in a short space of time. The information is also easily analysed and this method was economical in time, cost and effort.

1. State your name and the position in the club.

Name_____

Position _____

2. Please rate the current system in use from a scale of 1 to 10. (1 being the lowest and 10 being the highest)   _____

3. Please state the **MAIN** issue you have with the current system.

_____

_____

_____

_____

4. Do you thing that implementing this software would improve on the main issues of the

   system currently in use?

   Yes ▭   No ▭

5. Please state the reason for your answer in the question above.

_____

_____

_____

_____

FOR OFFICIAL USERS OF THE SYSTEM ONLY

6. Would you like to have access to the system password protected?

   Yes ▭   No ▭

7. Please state the reason why.

_____

_____

8. Would you like for the system to store information on players? (For example, name, gender, medical conditions etc.)

Yes ▪   No ▪

9. Please state why.

_____

_____

_____

_____

10. Please state any other task that you would like to see the system carry out.

_____

_____

_____

_____

Results

Most of the answers obtained from the questionnaire were similar to the responses made in the interview. 90% of the responders rated the current system below five while 95% of them indicated that the best course of action was to develop new software to fix the problems that they are having. Most of the responders stated that the insufficient tracking of money was the main problem of the current system while others stated that it was the
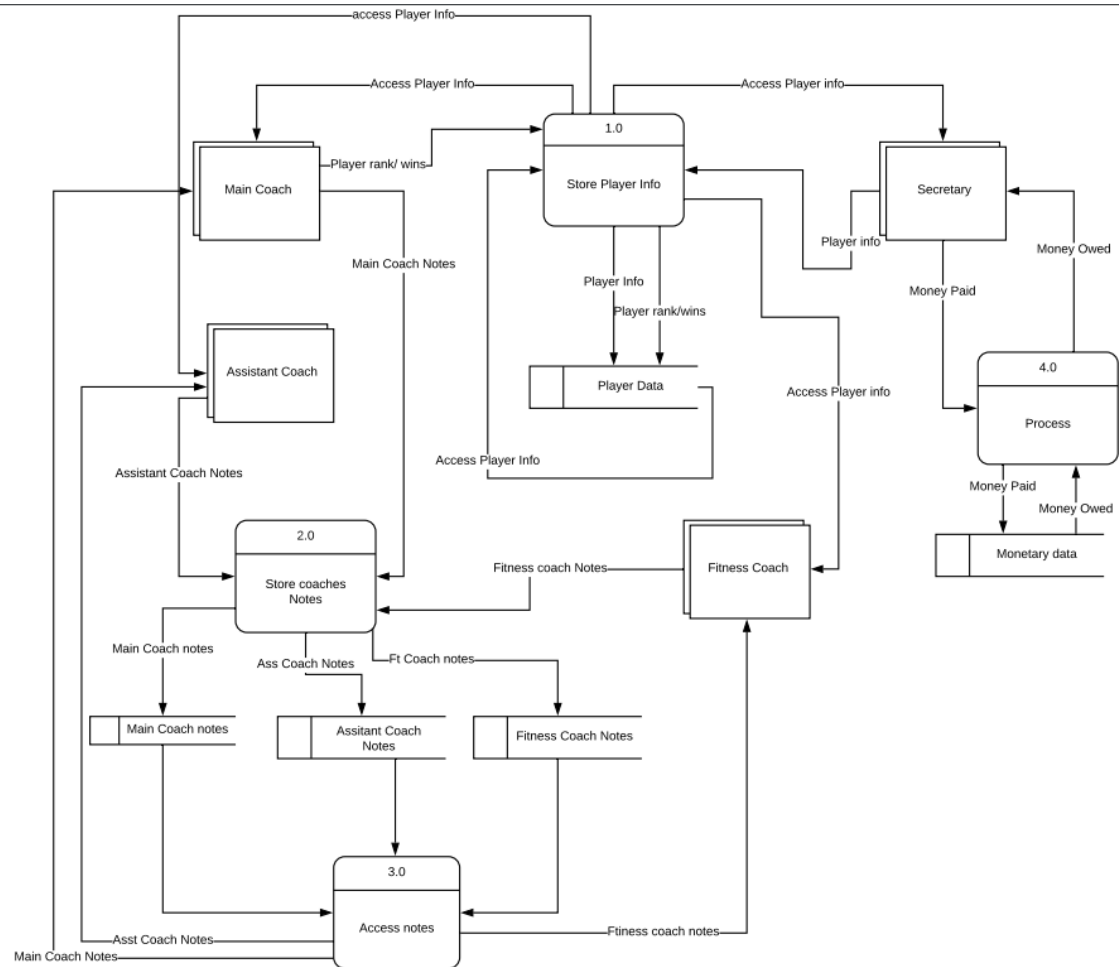
lack of attention that the players were getting was the main issue. Surprisingly 100% of the responders stated that the system should be password protected saying that the details of players information should be kept confidential at all cost.
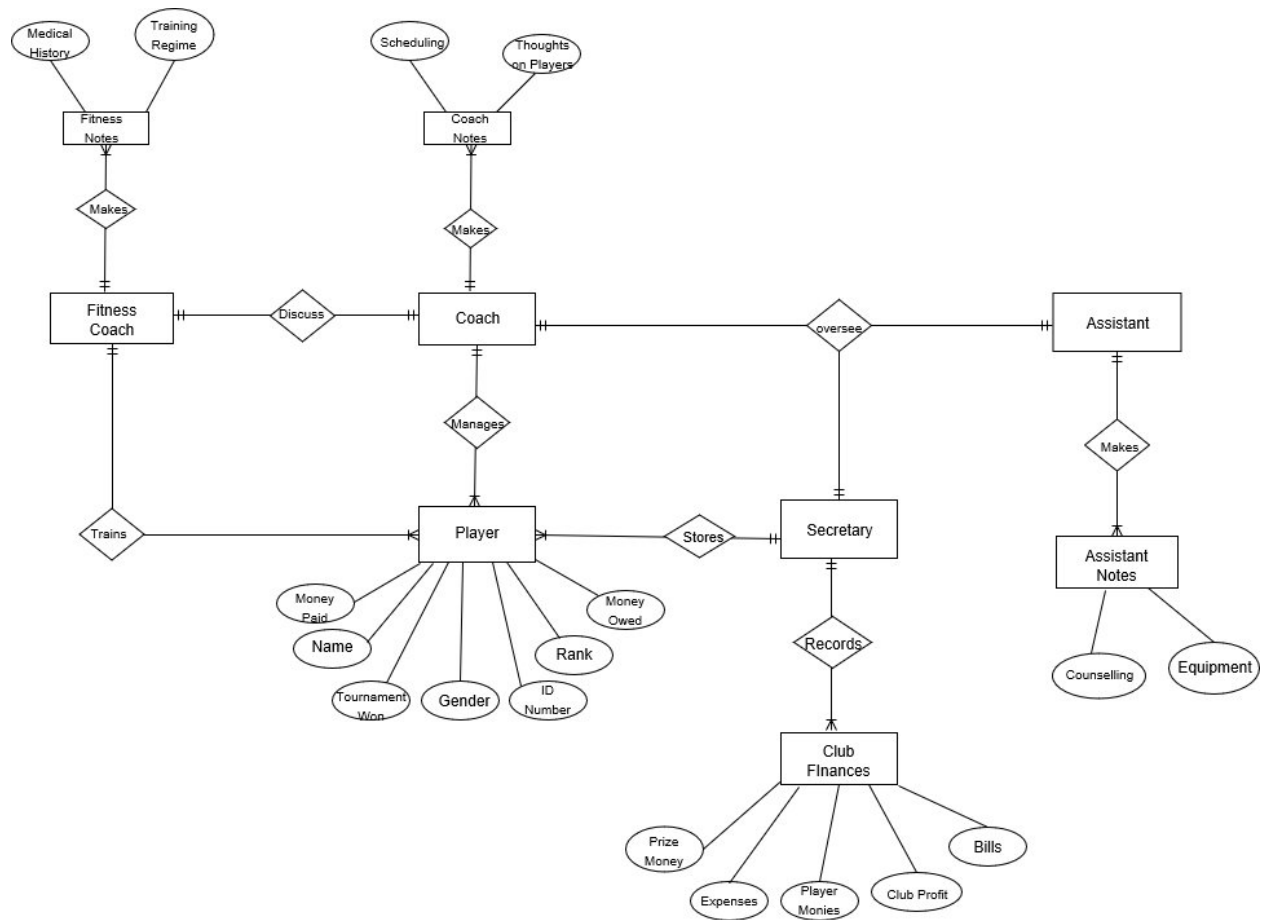
Data Flow Diagrams (DFDs)

Context-Level Diagram
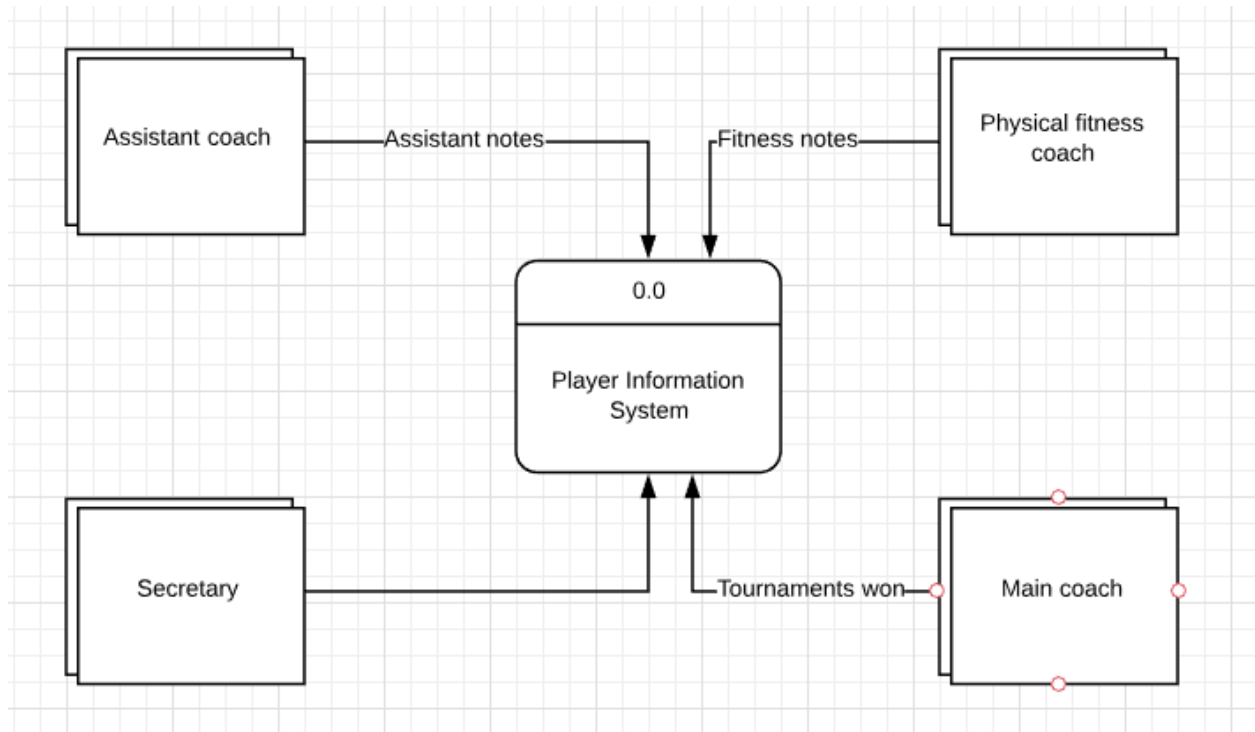
Level 0 Diagram

Entity Relation Diagram

Function and Non Functional Requirements

Function Requirements:

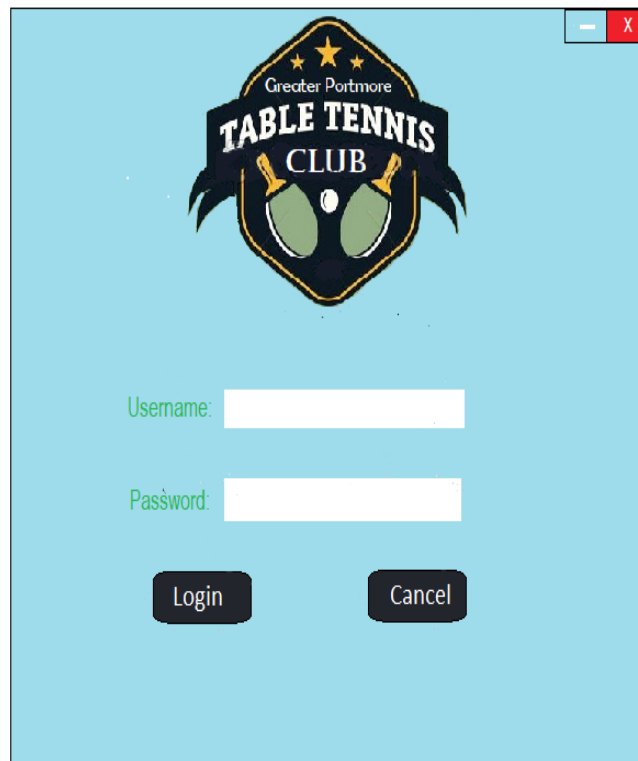| Functional Requirements	Functional Requirement Description
FR1	Friendly Graphical user interface
FR2	Generate reports for staffs
FR3	Manage current players
FR4	Display medical history and status of each player

Non Functional Requirements:

Non functional Requirements	Non Functional Descriptions
NFR1	Keeping the medical documentation confidential.
NFR2	Ascertain payroll of money paid and owed.
NFR3	Constraint of a maximum of 20 players in club.
NFR4	Staff members shall be forced to enter password.

Desired Graphical User Interface

User Interface

Login Screen

Error Screen

Registration Screen

Payment Screen

Enter Information here

First Name: _____

Last Name: _____

Player ID: _____

Amount Paid: _____

Next Entry   Done
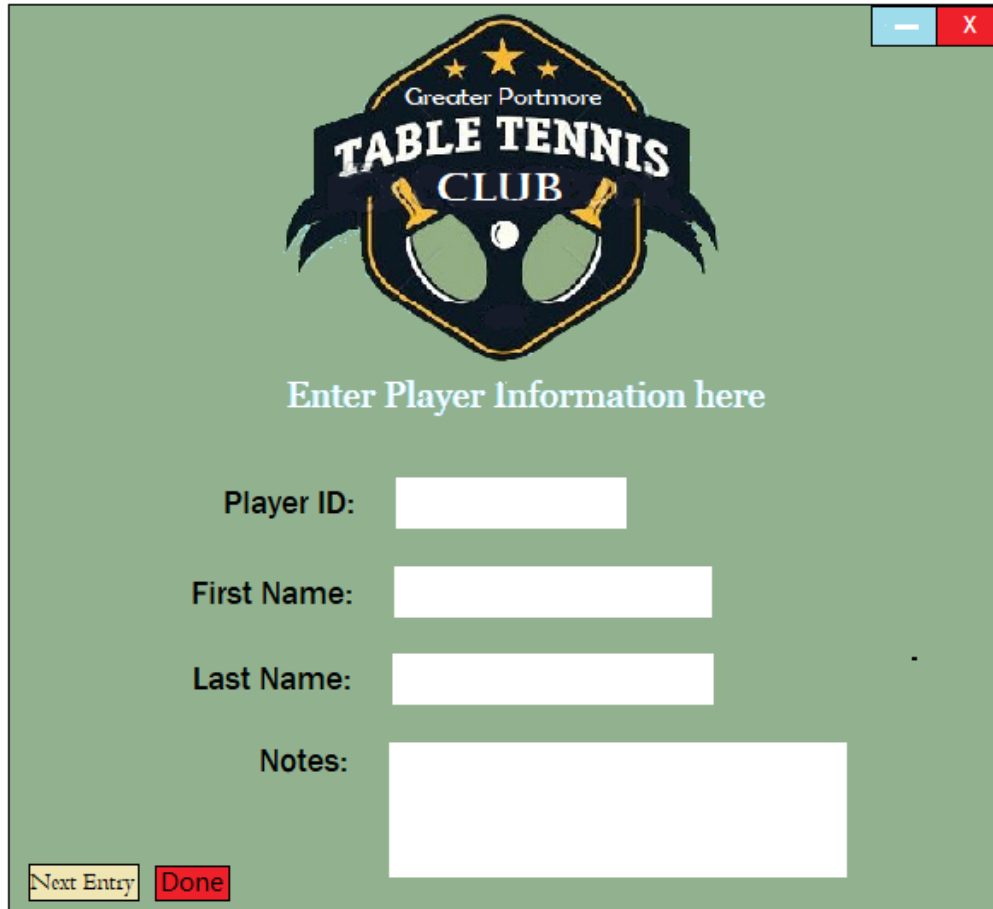
Main Coaches Screen

Coaches Rank Screen

Coaches Rank Screen

Enter Player Information here

Player ID:
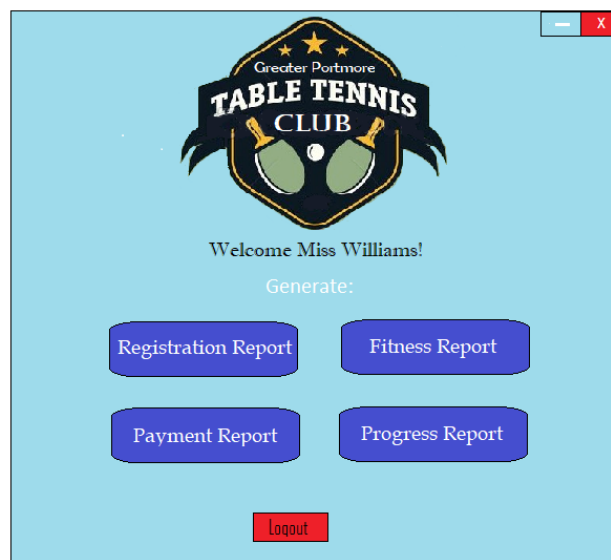
First Name:

Last Name:

Notes:

Next Entry Done

Assistant Coaches Screen

Welcome Miss Williams!

Generate:

Registration Report   Fitness Report

Payment Report   Progress Report

Logout

Fitness Coach Options
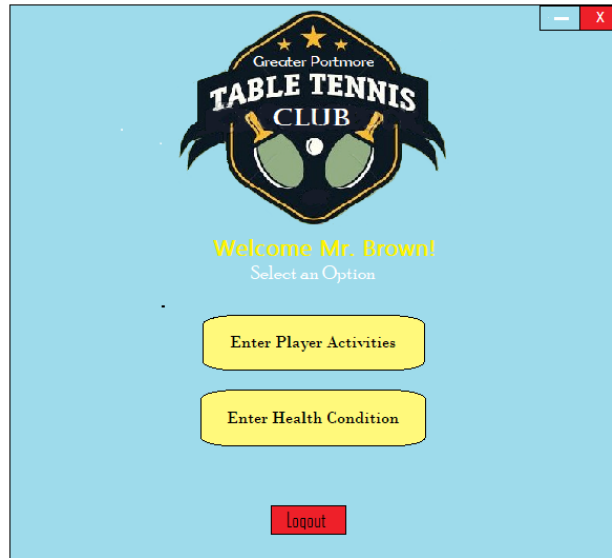
Fitness Activities

Fitness Conditions

Enter Information here

Player ID:

First Name:

Last Name:

Health Condition:

Next Entry   Done

Report Design

The system is will output the desired information using for reports. They are the Registration report, the Payment report, the Fitness Report and the Progress report.

The registration report will output the player's general information such as their name, gender and ID number. The payment report will output the amount paid by each player and the fitness report will output the physical activity of each player as well as the health condition of each player. The progress report contains the number of tournaments won, rank as well as the any notes the coach may have for the player. All of these reports may be subject to change based off of the limitations of the programming language being used.

Registration Report

ID number	Gender	First Name	Last Name
1000	M	Avaya	Corona
2000	F	Kaisha	Coleman
3000	F	Samanta	Oneill
4000	M	Jose	Naylor
5000	M	Coby	Cousins

Payment Report

ID number	First Name	Last Name	Amount Paid
1000	Avaya	Corona	9000

2000	Kaisha	Coleman	98000
3000	Samanta	Oneill	27000
4000	Jose	Naylor	27500
5000	Coby	Cousins	30000
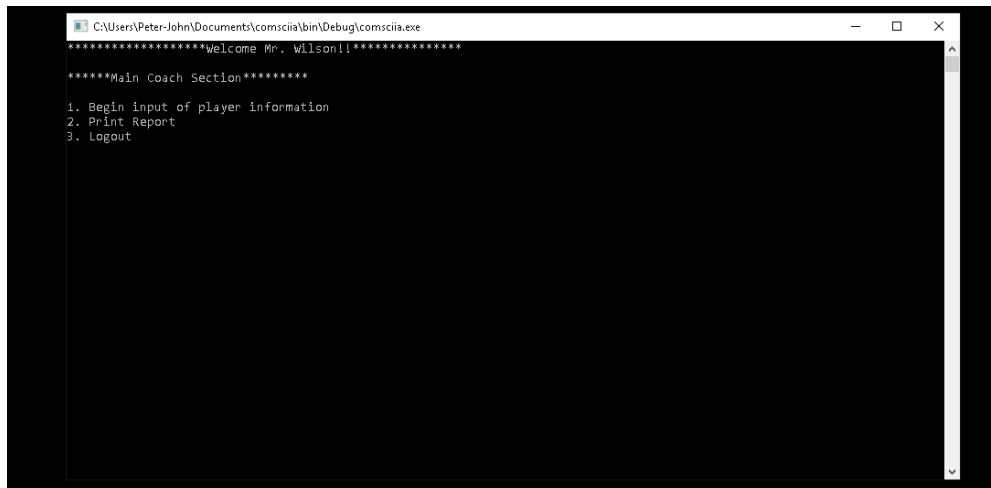
Fitness Report

ID number	First Name	Last Name
1000	Avaya	Corona
2000	Kaisha	Coleman
3000	Samanta	Oneill
4000	Jose	Naylor

5000	Coby	Cousins

Physical Activity:

Avaya   Corona,   None

Kaisha   Coleman,   Gymnastics

Samanta   Oneill,   Determined

Jose   Naylor,   None

Health Condition:

Avaya   Corona,   None

Kaisha   Coleman,   None

Samanta   Oneill,   None

Jose   Naylor,   None

Progress Report

ID Number	First Name	Last Name	Tournament Won	Rank
1000	Avaya	Corona	1	46
2000	Kaisha	Coleman	5	11
3000	Samanta	Oneill	2	27

4000	Jose	Naylor	1	28
5000	Coby	Cousins	1	23

Notes:

Avaya	Corona

Slacking

Kaisha	Coleman

Agile

Samanta	Oneill

Dieting

Jose	Naylor

Pseudocode

BEGIN

Procedure login

   Initialize UserName;

   Initialize PassWord;

   Initialize Usect To "PLewis"

   Initialize Psect To "sectGPTTC"

   Initialize Umain To "MWilson"

   Initialize Pmain To "mCoach"

   Initialize Ufit To "MBrown"

   Initialize Pfit To "FitCoach"

   Initialize Uassist To "MWilliams";

   Initialize Passist To "AsstCoach"   Print "GREATER PORTMORE TABLE TENNIS CLUB"

   Print "Please Enter Username: "

Read UserName

 Print "Please Enter Password"

 Read PassWord

 Print" ********************Welcome Miss Lewis!***************"

 Procedure Secretary_fun

 if (strcmp(Umain,UserName)==0 AND strcmp(Pmain,PassWord)==0)

Print "*****************Welcome Mr. Wilson!!**************"

Procedure Main_coach_fun

if(strcmp(Ufit,UserName)==0 AND strcmp(Pfit,PassWord)==0)

Print "*****************Welcome Mr. Brown!!**************"

Procedure Physical_fitness_coach_fun

if (strcmp(Uassist,UserName)==0ANDstrcmp(Passist,PassWord)==0)

Print "*******************Welcome Miss Williams!!***********"

Procedure Assistant_coach_fun

else

Print Username or Password incorrect please try again

Procedure login

Declare Secretary_fun

Declare Main_coach_fun

Declare Physical_fitness_coach_fun

Declare Assistant_coach_fun

Declare payment

Declare registration

Declare genReporting

Declare trackFitness

//structure to store player data in system

struct RegiSystem

      Declare fname

      Declare lname

      Declare playerid;

      Declare gender;

}

Declare struct RegiSystem Prosp_plyr[20]

struct payment

      Declare firstname

      Declare lastname

Declare id

Declare amtpaid

Declare Payment player[50]

struct progress

Declare firstname

Declare lastname

Declare id;

Declare notes

Declare asstnotes

Declare won

Declare rank

Declare struct Progress plyr[50]

struct fitness

Declare firstname

Declare lastname

Declare id;

Declare activity

Declare healthconds

Declare struct fitness ply[50]

Procedire main

Procedure Login

//main functions

Procedure Secretary_fun

Declare chc

Print" 1. Registration."

Print "2. Payments."

Print" 3. Delete file."

Print" 4. Print reports"

Print "Choose a number   "

Read chc

switch(chc)

case 1:

Procedure registration

case 2:

Procedure payment

case 3:

case 4:

Procedure genReporting

default:

 Print "Incorrect option please try again)"

Procedure Secretary_fun

Procedure Main_coach_fun

Declare ch

Initialize x to 0

Declare end

Declare file pointer ptr

Print "1. Enter coach notes"

Print" 2. Enter the number of tournament won"

Print" 3. Enter the player's rank"

Print "4. Logout"

Print Choice

Read ch

switch(ch)

case 1:

ptr=fopen("progress.txt "w+")

while(end<>1)

Print "Enter player information hear"

Print ID

Read   plyr[x].id

Print   "First Name"

Read   plyr[x].firstname

Print "Last Name"

Read   plyr[x].lastname

Print "Enter notes below"

Read   plyr[x].notes

PRINT TO FILE ptr plyr[x].id,plyr[x].firstname,plyr[x].lastname,plyr[x].notes);

INCREMENT X BY 1

Print "Enter the number '1' to stop"

CLOSE FILE POINTER PTR

Read end

Procedure Main_coach_fun

case 2:

ptr=fopen("progress.txt "a+)

while(end<>1)

Print Enter ID number

Read plyr[x].id)

Print Enter the number of tournaments won

Read plyr[x].won

PRINT TO FILE ptr plyr[x].won,plyr[x].id

Print "Enter the number '1' to stop"

Read end

Close file pointer ptr

Procedure Main_coach_fun();

case 3:

ptr=fopen("progress.txt "a+)

while(end<>1)

Print "Enter ID number"

Read   plyr[x].id

Print "Enter Player's rank"

Read plyr[x].rank"

PRINT TO FILE ptr plyr[x].id,plyr[x].rank

Print "Enter the number '1' to stop"

Read end

CLOSE FILE POINTER ptr

Procedure Main_coach_fun

case 4:

Procedure login

Procedure Physical_fitness_coach_fun

Declare chc

Print "***************Physical Fitness Coach Section****************** "

Print "1. Enter activity of player "

Print "2. Generate report. "

Print "3. Logout "

Print "Choice: "

Read chc

switch(chc)

case 1:

Procedure trackFitness

case 2:

     Procedure genReporting

case 3:

     Procedure login

Procedure Assistant_coach_fun

{

Declare chc

Print "1. Print reports   "

Print "2. logout   "

Print "Choice: "

Read   chc

switch (chc)

case 1:

     Procedure genReporting

case 2:

     Procedure login

Procedure registration

DECLARE FILE POINTER fp

fp = fopen("listing.txt "w+ ")

Declare x

Declare i

Print   "*********************Registering section.******************   "

Print   "How many players to add?"

Read i

for x → 1 to I do

      Print   " Enter Player First Name"

      Read   Prosp_plyr[x].fname

      Print "Enter Player Last Name"

      Read   Prosp_plyr[x].lname

      Print "What is the player id no.?"

      Read Prosp_plyr[x].playerid

      Print   "What is the gender?"

      Read Prosp_plyr[x].gender

For x $\rightarrow$ 1 to I do

PRINT TO FILE fp Prosp_plyr[x].playerid, Prosp_plyr[x].gender, Prosp_plyr[x].fname, Prosp_plyr[x].lname

CLOSE FILE POINTER fp

Procedure Secretary_fun

Procedure genReporting

DECLARE FILE POINTER fp

DECLARE FILE POINTER filpay

DECLARE FILE POINTER ptr

Declare choice

Declare x

Declae i

Initialize x=0;

Print" 1. Registration report "

Print "2. Payment report "

Print" 3. Fitness report   "

Print "4. Progress report   "

Read   choice

switch (choice)

case 1:

fp=fopen("listing.txt "r +)

while (filpay<>EOF)

PRINT TO FILE fp Prosp_plyr[x].playerid, &Prosp_plyr[x].gender, &Prosp_plyr[x].fname, &Prosp_plyr[x].lname

X → x+1

Print" ID number   Gender   First Name   Last Name   "

For I → 1 to 20 Do

Print   Prosp_plyr[x].playerid,Prosp_plyr[x].gender,Prosp_plyr[x].fname,Prosp_plyr[x].lnam

CLOSE FILE POINTER fp

case 2:

filpay=fopen("payment.txt "r +)

while (filpay<>EndOfFile) Do

Print" ID number\t First Name\t Last Name\t Amount Paid "

PRINT TO FILE filepay player[x].id, player[x].firstname, player[x].lastname, player[x].amtpaid

X → x+1

CLOSE FILE POINTER filpay

case 3:

fitPr=fopen("fitness.txt "r +)

while (fitPr<>EndOfFile)

Print" ID number\t First Name\t Last Name   Physical Activity: Health Condition: "

DISPLAY ply[x].id,ply[x].firstname,ply[x].lastname

Print "Phyical Activity   "

DISPLAY ply[x].activity

Print   Health Conditions

fprintf(stdout," ply[x].healthconds);

x → x+1

case 4:

ptr=fopen("progress.txt "r +)

while (ptr<>EOF)

Print "ID number\t First Name\t Last Name\t Tournaments Won\t Rank   "

DISLAY   plyr[x].id,plyr[x].firstname,plyr[x].lastname,plyr[x].won,plyr[x].rank);

X → x+1

Procedure trackFitness

Declare end

Declare x

While (end<>1)

Declare File Pointer fitPR

fitPR = fopen("fitness.txt "w+ ")

Print" Enter the Player ID. "

Read ply[x].id

Print" First Name: "

Read   ply[x].firstname

Print" Last Name: "

Read   &ply[x].lastname

Print "Enter the activity made by player.   "

Read ply[x].activity

Print "Enter any serious health conditions"

Read   ply[x].healthconds

PRINT TO FILE fitPr
ply[x].id,ply[x].firstname,ply[x].lastname,ply[x].activity,ply[x].healthconds);

CLOSE FILE POINTER fitPr

X → x+1

Print "Enter the number 1 to stop "

Read   end

Procedure Physical_fitness_coach_fun

Procedure payment

Declare num

Initialize x = 0

Declare i

DECLARE FILE POINTER filpay

filpay=fopen("payment.txt "w+ ")

while (num<>1)

Print "First name: "

Read   player[x].firstname

Print" Last name: "

Read   player[x].lastname

printf " ID#: "

Read   player[x].id

Print "Amount Paid: "

Read player[x].amtpaid

Print "Enter 1 to stop of 0 to continue   "
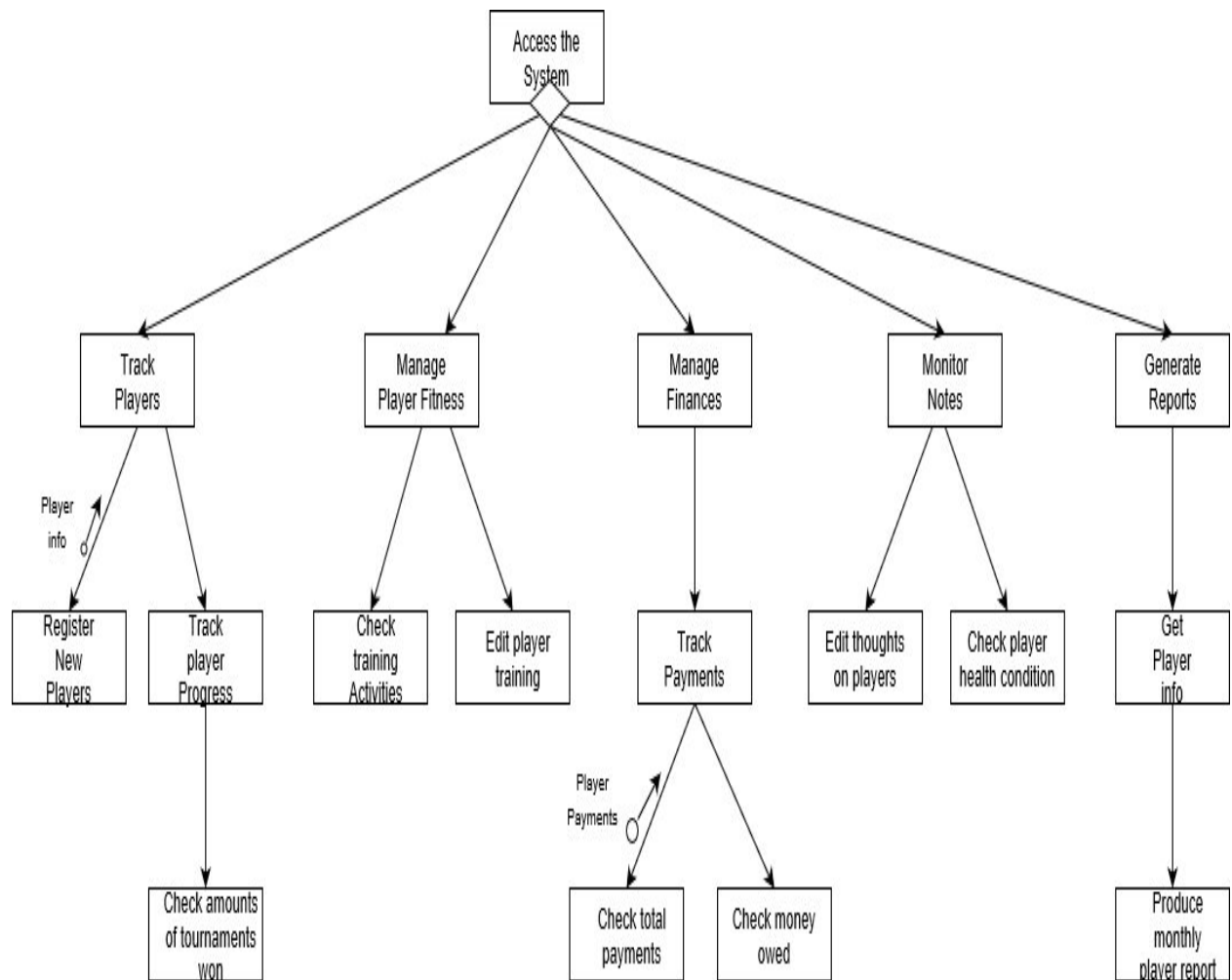
Read   num

for I → 1 to 20 Do

PRINT TO FILE filepay player[i].id,player[i].firstname,player[i].lastname,player[i].amtpaid);
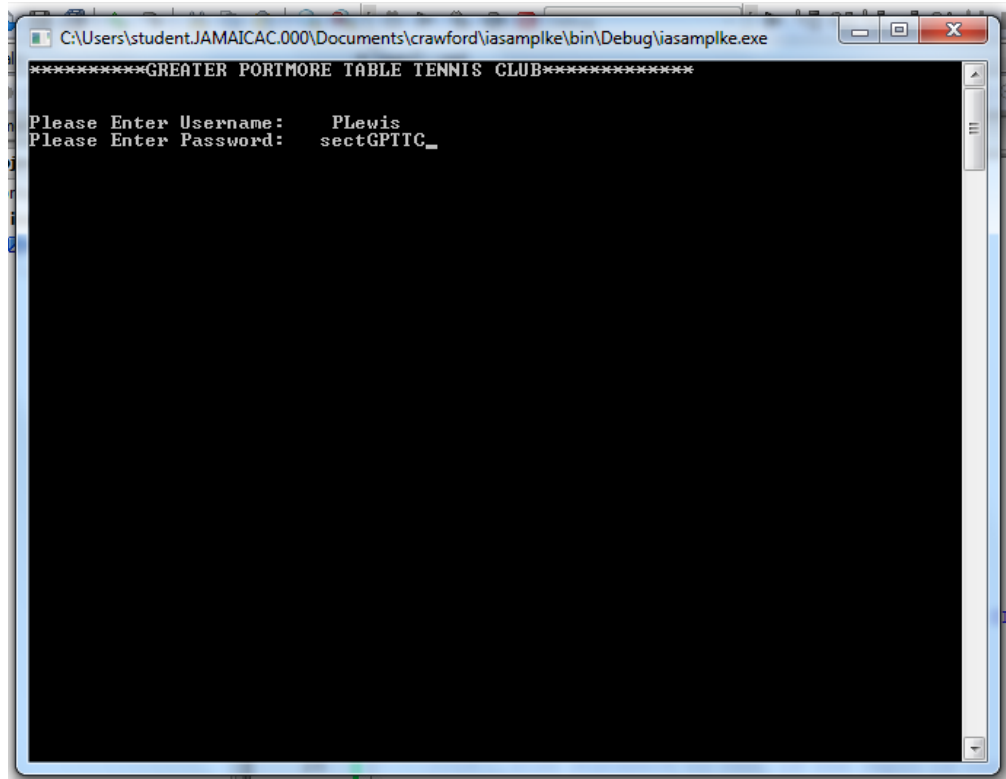
Procedue Secretary_fun

END

Hierarchy or Structure Chart
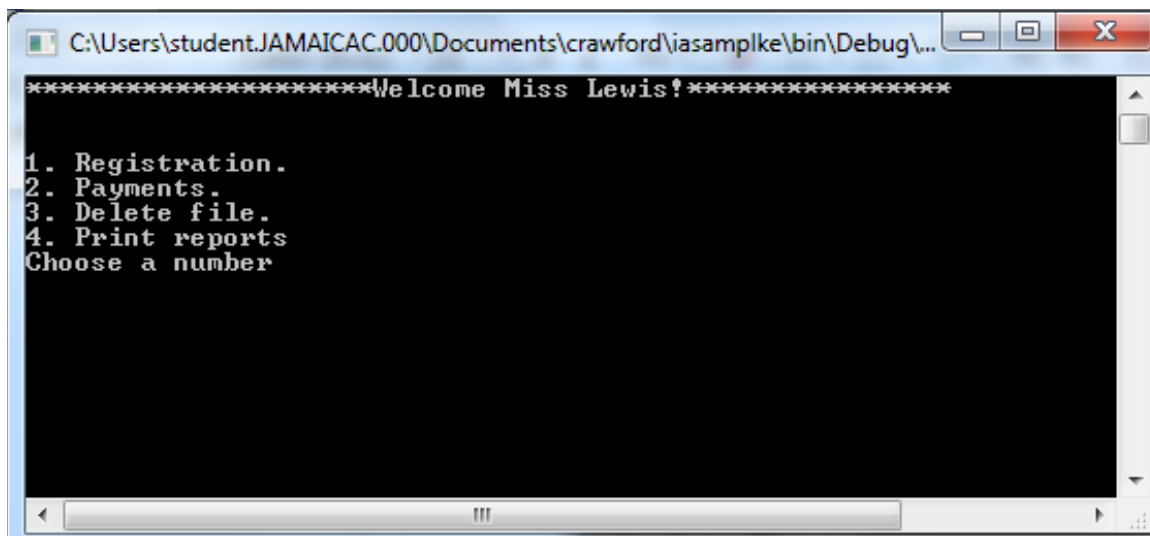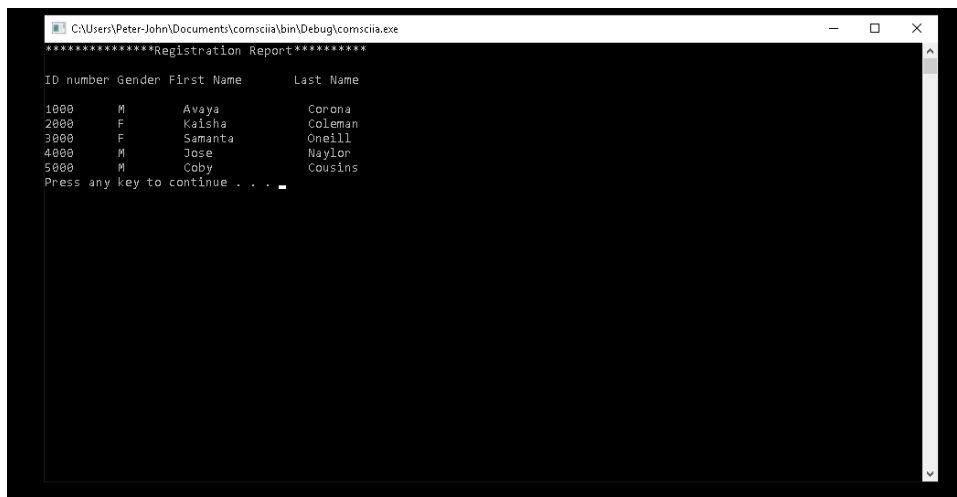
Print Screens

Login screen

Main menu

Report selection

Registration Reporting

Payment reporting

Fitness reporting

Progress reporting

Main Coach Sub Menu

Fitness Coach Sub Menu

Assistant Coach Sub Menu

Code

```c
1   #include <stdio.h>
2   #include <stdlib.h>
3   #include <string.h>
4
5   //Declaring main functions
6   void login();
7   void Secretary_fun();
8   void Main_coach_fun();
9   void Physical_fitness_coach_fun();
10  void Assistant_coach_fun();
11
12  //Declaring sub functions
13  void payment();
14  void registration();
15
16  void genReporting();
17  void trackFitness();
18
19
20
21
22
23
24
25
26
27
28  //structure to store player data in system
29  struct RegiSystem
30  {
31      int playerid;
32      char gender;
33      char fname[50];
34      char lname[50];
35
36
37
38  }Prosp_plyr[20];
39
40
41  struct payment
42  {
43      char firstname[50];
44      char lastname[50];
45      int id;
46      float amtpaid;
47
48
49  }player[50];
50
51  struct progress
52  {
53      char firstname[50];
54      char lastname[50];
```

```c
55          int id;
56          char notes[500];
57
58          int won;
59          int rank;
60      }plyr[50];
61
62      struct fitness
63      {
64          char firstname[50];
65          char lastname[50];
66          int id;
67          char activity[200];
68          char healthconds[500];
69      }ply[50];
70
71      //main
72
73      int main()
74      {
75          login();
76          return 0;
77      }
78
79      //login function
80      void login()
81      {
82          char UserName[50];
83          char PassWord[50];
84          char Usect[]="PLewis";
85          char Psect[]="sectGPTTC";
86          char Umain[]="MWilson";
87          char Pmain[]="mCoach";
88          char Ufit[]="MBrown";
89          char Pfit[]="FitCoach";
90          char Uassist[]="MWilliams";
91          char Passist[]="AsstCoach";
92
93          system("cls");
94          printf("**********GREATER PORTMORE TABLE TENNIS
CLUB*************\n\n\n");
95          printf("Please Enter Username:    ");
96          scanf("%s", UserName);
97          printf("Please Enter Password:   ");
98
99          scanf("%s", PassWord);
100         //if...else statement to test if the input is the correct username.
101
102
103
104         if (strcmp(Usect,UserName)==0&&strcmp(Psect,PassWord)==0)
105         {
106             system("cls");
107
108          printf("*********************Welcome Miss Lewis!
***************\n\n\n");
109          Secretary_fun();
```

```c
110
111
112          }
113      if (strcmp(Umain,UserName)==0&&strcmp(Pmain,PassWord)==0){
114              system("cls");
115          printf("*******************Welcome Mr. Wilson!!
**************\n\n");
116          Main_coach_fun();
117      }
118      if(strcmp(Ufit,UserName)==0&&strcmp(Pfit,PassWord)==0){
119          system("cls");
120          printf("*******************Welcome Mr. Brown!!
**************\n\n");
121          Physical_fitness_coach_fun();
122      }
123      if (strcmp(Uassist,UserName)==0&&strcmp(Passist,PassWord)==0){
124          system("cls");
125          printf("********************Welcome Miss Williams!!
************\n\n");
126          Assistant_coach_fun();
127      } else{
128          printf("Username or Password incorrect please try again\n\n");
129          system("pause");
130          system("cls");
131          login();
132
133      }
134
135
136  }
137
138
139  //main functions
140  void Secretary_fun()
141  {
142      int chc;
143
144
145          printf("*********Secretary Section*********\n\n");
146          printf("1. Registration.\n");
147          printf("2. Payments.\n");
148          printf("3. Print reports\n");
149          printf("4. logout\n");
150          printf("Choose a number  ");
151          scanf("%d", &chc);
152      switch(chc)
153      {
154      case 1:
155          registration();
156          break;
157      case 2:
158          payment();
159          break;
160      case 3:
161          genReporting();
162          break;
163      case 4:
```

```c
164            login();
165            break;
166
167        default:
168            printf("Incorrect option please try again :)\n ");
169            system("pause");
170            system("cls");
171            Secretary_fun();
172
173
174        }
175
176  }
177
178  void Main_coach_fun()
179  {
180      int ch, x, num,i;
181      char notes[500];
182      FILE*ptr;
183      printf("******Main Coach Section*********\n\n");
184     printf("1. Begin input of player information\n");
185     printf("2. Print Report\n");
186     printf("3. Logout\n");
187     scanf("%d",&ch);
188
189     system("cls");
190
191     switch (ch)
192     {
193         case 1:
194             ptr=fopen("progress.txt","w");
195             printf("Enter the number of records you want to enter\n");
196             scanf("%d",&num);
197             for(x=0;x<num;x++)
198             {
199
200             printf("Enter player ID\n");
201             scanf("%d",&plyr[x].id);
202             printf("Enter player first name\n");
203             scanf("%s",plyr[x].firstname);
204             printf("Enter player Last Name\n");
205             scanf("%s",plyr[x].lastname);
206             printf("Enter number of Tournaments won\n");
207             scanf("%d",&plyr[x].won);
208             printf("Enter player's rank\n");
209             scanf("%d",&plyr[x].rank);
210             printf("Enter notes on Player\n");
211             fflush(stdin);
212             gets(notes);
213             strcpy(plyr[x].notes,notes);
214
215             }
216             for(i=0;i<num;i++)
217             {
218                 fprintf(ptr,"%d %s %s %d %d\n
%s\n\n",plyr[i].id,plyr[i].firstname,plyr[i].lastname,plyr[i].won,plyr[i].rank
,plyr[i].notes);
```

```c
219                    }
220
221                fclose(ptr);
222                system("pause");
223                system("cls");
224                Main_coach_fun();
225                break;
226          case 2:
227                genReporting();
228          case 3:
229                login();
230          default:
231                printf("Incorrect option please try again\n\n");
232                system("pause");
233                system("cls");
234                Main_coach_fun();
235     }
236
237
238
239  }
240
241  void Physical_fitness_coach_fun()
242  {//physical fitness programs;keeping track of physical activities by
players
243
244      int chc;
245      printf("***************Physical Fitness Coach
Section******************\n\n");
246      printf("1. Enter activity of player\n");
247      printf("2. Generate report.\n");
248      printf("3. Logout\n");
249      printf("Choice:   ");
250      scanf("%d",&chc);
251
252      switch(chc)
253      {
254      case 1:
255          trackFitness();
256          break;
257      case 2:
258          genReporting();
259          break;
260      case 3:
261          system("cls");
262          system("pause");
263          login();
264      default:
265          printf("Incorrect option please try again\n");
266          system("pause");
267          system("cls");
268          Physical_fitness_coach_fun();
269      }
270
271
272
273  }
```

```c
274
275   void Assistant_coach_fun()
276   {
277
278       int chc;
279       printf("***********Assistant Coach Section*********\n\n");
280       printf("1.  Print reports\n");
281       printf("2.  logout\n");
282       printf("Choice:  ");
283
284       scanf("%d",&chc);
285       switch (chc)
286       {
287       case 1:
288           genReporting();
289           break;
290       case 2:
291           login();
292
293           break;
294       default:
295           printf("Incorrect Option Please try again\n");
296           system("pause");
297           system("cls");
298           Assistant_coach_fun();
299
300
301       }
302
303
304   }
305
306   ////////////////////////////////////////////////////////////////////////
      /////////////////////////////////////////////
307
308   //sub functions down here
309
310
311
312   void registration()
313   {
314       system("cls");
315
316       FILE *fp;
317       fp = fopen("listing.txt", "w+");
318       int x;
319       int i;
320       printf("\n********************Registering
section.*****************\n\n");
321       printf("\nHow many players to add?      ");
322       fflush(stdin);
323       scanf("%d", &i);
324       for (x=0;x<i;x++)
325       {
326
327
328       printf("\n\nEnter Player First Name    ");
```

```
329        scanf("%s",Prosp_plyr[x].fname);
330        printf("Enter Player Last Name      ");
331        scanf("%s",Prosp_plyr[x].lname);
332        printf("What is the player id no.?    ");
333        scanf("%d", &Prosp_plyr[x].playerid);
334        printf("\nWhat is the gender?      ");
335        fflush(stdin);
336        scanf("%c", &Prosp_plyr[x].gender);
337
338
339
340
341        }
342
343        for (x=0;x<i;x++)
344        {
345            fprintf(fp, "%d %c %s %s\n",Prosp_plyr[x].playerid,
Prosp_plyr[x].gender, Prosp_plyr[x].fname, Prosp_plyr[x].lname);
346
347        }
348        fclose(fp);
349        system("pause");
350        system("cls");
351        Secretary_fun();
352
353  }
354
355
356
357
358
359  void genReporting()
360  {
361        system("cls");
362        FILE*fp;
363        FILE*filpay;
364        FILE*fitPr;
365        FILE*ptr;
366        int choice,x,i;
367        char notes[500];
368        char activity[200];
369        char healthconds[200];
370
371        x=0;
372        printf("********Reporting section********\n\n");
373        printf("1. Registration report\n");
374        printf("2. Payment report\n");
375        printf("3. Fitness report\n");
376        printf("4. Progress report\n");
377        scanf("%d",&choice);
378
379        switch (choice)
380        {
381
382        case 1:
383
384            fp=fopen("listing.txt","r");
```

```c
385
386
387         fscanf(fp,"%d %c %s
%s",&Prosp_plyr[x].playerid,&Prosp_plyr[x].gender,Prosp_plyr[x].fname,Prosp_pl
yr[x].lname);
388             while(!feof(fp))
389             {
390             x++;
391             fscanf(fp,"%d %c %s
%s",&Prosp_plyr[x].playerid,&Prosp_plyr[x].gender,Prosp_plyr[x].fname,Prosp_pl
yr[x].lname);
392
393             }
394
395
396             system("cls");
397         printf("***************Registration Report*********\n\n");
398         printf("ID number Gender First Name\t  Last Name\n\n");
399     for(i=0;i<x;i++)
400     {
401         printf("%d \t  %c\t   %s \t    %s
\n",Prosp_plyr[i].playerid,Prosp_plyr[i].gender,Prosp_plyr[i].fname,Prosp_plyr
[i].lname);
402     }
403     fclose(fp);
404     system("pause");
405     system("cls");
406     login();
407
408     break;
409
410     case 2:
411
412         filpay=fopen("payment.txt","r");
413         fscanf(filpay,"%d %s %s
%f",&player[x].id,player[x].firstname,player[x].lastname,&player[x].amtpaid);
414
415         while(!feof(filpay))
416         {
417
418             x++;
419             fscanf(filpay,"%d %s %s
%f",&player[x].id,player[x].firstname,player[x].lastname,&player[x].amtpaid);
420         }
421         system("cls");
422         printf("***********Payment Report********\n\n");
423         printf("ID number\t First Name\t Last Name\t Amount Paid\n");
424         for(i=0;i<x;i++)
425         {
426             printf("%d\t\t %s\t\t%s\t
%f\n",player[i].id,player[i].firstname,player[i].lastname,player[i].amtpaid);
427         }
428         system("pause");
429         system("cls");
430         login();
431          break;
432     case 3:
```

```c
433            fitPr=fopen("fitness.txt","r");
434            fscanf(fitPr,"%d%s
%s",&ply[x].id,ply[x].firstname,ply[x].lastname);
435
436                fgets(activity,200,fitPr);
437
438                fgets(healthconds,200,fitPr);
439                strcpy(ply[x].activity,activity);
440                strcpy(ply[x].healthconds,healthconds);
441            while(!feof(fitPr)){
442
443                x++;
444
445                fscanf(fitPr,"%d%s
%s",&ply[x].id,ply[x].firstname,ply[x].lastname);
446                 fgets(activity,200,fitPr);
447
448                fgets(healthconds,200,fitPr);
449                strcpy(ply[x].activity,activity);
450                strcpy(ply[x].healthconds,healthconds);
451
452
453            }
454            system("cls");
455            printf("*****FITNESS REPORT********\n\n");
456            printf("ID number First Name Last Name\n\n ");
457            for(i=0;i<x;i++){
458                printf("%d      %s
%s\n",ply[i].id,ply[i].firstname,ply[i].lastname);
459
460
461
462                printf("Physical Activity:  %s\n",ply[i].activity);
463
464                printf("Health Conditions:   %s\n",ply[i].healthconds);
465            }
466            fclose(fitPr);
467            system("pause");
468            system("cls");
469            login();
470            break;
471        case 4:
472            system("cls");
473            printf("ID number  First Name\t  Last Name\t Tournaments Won\t
Rank\n\n");
474            ptr=fopen("progress.txt","r");
475            fscanf(ptr,"%d  %s  %s  %d %d
",&plyr[x].id,plyr[x].firstname,plyr[x].lastname,&plyr[x].won,&plyr[x].rank);
476            fgets(notes,500,ptr);
477            strcpy(plyr[x].notes,notes);
478                while(!feof(ptr))
479                {
480
481
482
483                x++;
484                fscanf(ptr,"%d  %s  %s  %d %d
```

```
",&plyr[x].id,plyr[x].firstname,plyr[x].lastname,&plyr[x].won,&plyr[x].rank);
485             fgets(notes,500,ptr);
486             strcpy(plyr[x].notes,notes);
487
488             }
489
490
491
492     for(i=0;i<x;i++)
493     {
494         printf("%d \t %s\t  %s\t  %d\t\t\t     %d\n\n Notes: %s\n\n
",plyr[i].id,plyr[i].firstname,plyr[i].lastname,plyr[i].won,plyr[i].rank,plyr[
i].notes);
495     }
496         fclose(ptr);
497         system("pause");
498         system("cls");
499         login();
500         break;
501     default:
502         printf("Incorrect option please try again\n\n\n");
503         system("pause");
504         system("cls");
505         genReporting();
506         break;
507     }
508
509
510  }
511
512  void trackFitness()
513  {
514      system("cls");
515      int num,x,i;
516      char activity[200];
517      char healthconds[200];
518      FILE *fitPR;
519      fitPR = fopen("fitness.txt", "w");
520      printf("*********Tracking Fitness***********\n\n");
521      printf("Enter the number of records you want to enter\n");
522      scanf("%d",&num);
523      for(x=0;x<num;x++){
524
525      printf("Enter the Player ID.   ");
526      scanf("%d", &ply[x].id);
527      printf("First Name:     ");
528      scanf("%s",ply[x].firstname);
529      printf("Last Name:     ");
530      scanf("%s",ply[x].lastname);
531      printf("Enter the activity made by player.\n");
532      fflush(stdin);
533      gets(activity);
534      printf("Enter any serious health conditions\n");
535      fflush(stdin);
536      gets(healthconds);
537      strcpy(ply[x].activity,activity);
538      strcpy(ply[x].healthconds,healthconds);
```

```
539        }
540
541        for(i=0;i<num;i++){
542
543        fprintf(fitPR,"%d %s %s %s\n
%s\n",ply[i].id,ply[i].firstname,ply[i].lastname,ply[i].activity,ply[i].health
conds);
544
545        }
546
547        fclose(fitPR);
548
549
550
551
552        system("pause");
553        system("cls");
554        Physical_fitness_coach_fun();
555    }
556
557    //payment function
558    void payment()
559    {
560        system("cls");
561        int num,x,i;
562        FILE*filpay;
563        filpay=fopen("payment.txt","w");
564        printf("********Payments********\n\n");
565        printf("Enter the amount of records to add\n\n");
566        fflush(stdin);
567        scanf("%d",&num);
568        for(x=0;x<num;x++){
569        printf("First name:  ");
570        fflush(stdin);
571        scanf("%s",player[x].firstname);
572        printf("Last name:  ");
573        fflush(stdin);
574        scanf("%s",player[x].lastname);
575        printf ("\nID#:  ");
576        scanf("%d",&player[x].id);
577        printf("Amount Paid: $");
578        scanf("%f",&player[x].amtpaid);
579
580
581
582
583
584
585        }
586        for(i=0;i<num;i++){
587            fprintf(filpay,"%d %s %s
%f\n",player[i].id,player[i].firstname,player[i].lastname,player[i].amtpaid);
588        }
589
590        fclose(filpay);
591        system("cls");
592        Secretary_fun();
```

```
593
594    }
595
```

Test Plan

Type of input	Section of Program	Description	Expected Results	Actual Results	Success?
Normal	Login screen	User enters "Plewis" as username, "sectGPTTC" as password	User should be rediected to Main menu	"Welcome Miss Lewis"	Successful
Extreme	Login screen	User enters "john" as username, "pass" as password	Prompt user that username/password combination does not match	"Username or Password incorrect please try again"	Successful
Erroneous	Login screen	User enters "@$%]" as username and "poi0" as password	Prompt user that username/password combination does not match	"Username or Password incorrect please try again"	Successful
Extreme	Registration	User enters "Lily May" as first name, "Mary" as last name, "F" as gender and "6000" as ID	Properly store in Registry section and properly display in Report section	Other questions are skipped, last name is not stored, first double barren name is not fully stored only showing "Lily"	Failed
Erroneous	Registration	User enters "@^*)" as first name, "!0" as last name, "F" as gender and "7000" as ID	Properly stored in Registry section and properly displayed in Report section, no question skipped	Properly store in Registry section and properly display in Report section	Successful
Erroneous	Payment	User enters "@^*)" as first name, "!0" as last name, "7000" as ID and "@@&&" as payment amount	Prompt user to retry with correct parameters	"Choose a number Incorrect option please try again :" However, 0.00 is shown for payment amount.	Successful

Extreme	Payment	User enters "Taj" as first name, "Souls" and last name, "8000" as ID and "6,000" as payment amount	Prompt user to retry with correct parameters	"Choose a number Incorrect option please try again :" However, 6.00 is shown for payment amount.	Failed
Extreme	Main coach notes	User enters "1000" as player ID, "Avaya" as first name, "Corona" as last name, "5,0" as number of tournaments won, "5,0" as player rank and ",,," as notes	Prompt user to retry with correct parameters	"5" was shown for number of tournaments won, but questiones were skipped and rank is shown "0" and not "5"	Failed
Erroneous	Main coach notes	User enters "2000" as player ID, "Kaisha" as first name, "Coleman" as last name, "@@^^" as number of tournaments won, " " as player rank and " " as notes	Prompt user to retry with correct parameters	Blank table is shown	Failed
Extreme	Physical fitness notes	User enters "Avaya" and first name, "Corona" as last name, "Jogging, Skipping and Karati" as activities made by players and "N/A" as serious health conditions.	Should store the parameters regrdless of alphanumeric conditions	Table properly shows the correct information	Successful

Erroneous	Physical fitness notes	User enters "Avaya" and first name, "Corona" as last name, "@^&*" as activities made by players and "!))*9," as serious health conditions.	Should prompt user to retry with extreme or normal data	Table properly shows the correct information	Failed