



INDIVIDUAL ASSIGNMENT

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TECHNOLOGY PARK MALAYSIA

CT108-3-1-PYP

PROGRAMMING WITH PYTHON

UCDF1911 102020-TKS

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WEIGHTAGE: 100%

INSTRUCTIONS TO CANDIDATES:

1. Submit your assignment online in Moodle unless advised otherwise
2. Late submission will be awarded zero (0) unless Extenuating Circumstances (EC) are upheld
3. Cases of plagiarism will be penalized
4. You must obtain at least 50% in each component to pass this module

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Introduction

One of the fastest growing Sport Center in Malaysia is the Real Champions Sports Academy. 10 coaches are employed in each center who are specialized in their respective sports and conduct sport classes on Badminton, Archery, Volleyball, Cricket, Table Tennis, Swimming, Football, Gymnastics and Basketball in their respective Sport Centers. Depending on the sport training, all coaches are paid by hourly rate ranging from RM100-500. Rating can be provided by the students to the coaches ranging from 1-5 where 1 is considered very poor performance and 5 is exceptional performance. A system is required by Real Champions Sports Academy which is able to store information regarding coaches, who are identified by Coach ID, Name, Date Joined, Date Terminated, Hourly Rate, Phone, Address, Sport Centre Code, Sport Center Name, Sport Code, Sport Name, Rating [a single digit integer number ranging from 1 to 5]. One coach is allowed to provide training on their respective sports only to maintain quality and consistency.

The Sport Centers are managed by an admin staff. All the records; sport, coach and student, are maintained and managed by Sport Centre Head Quarter Human Resources Department. The existing records scheme is classified by location of the coaches. I.e. the Sport Center gathers all coaches' records. The papers of the coach are filed alphabetically at each position by the name of the coach. The principal issue with the file scheme is that when a record is searched, the record will not readily be identified because the record is not put in the proper alphabet series in a separate sports centre. This issue is difficult for the administrator of the Sport Center to quickly find the trainer record as well as the sport record and student record.

Students must register online by testing the framework to collect information about sport centres, sports, trainers, star coaching, sport costs, sports schedules, etc. The Sport Center administrator has determined that due to issues with the manual filling scheme, it's time to computerise records from teachers, sport and students at the Sport Centre. Since the Sports Center HR Manager knows how to build a computer system, he will help you to develop the system.

Assumptions

1. Assumptions for Admin functionality

- 1.1 Admin will be able to log in to the system by entering correct username and password.
- 1.2 Admin will be able to add records of --- Coach, Sport and Sport Schedule
- 1.3 Admin will be able to view records of --- Coach, Sport and Registered students
- 1.4 Admin will be able to search records of --- Coach by Coach ID, Coach by Overall performance, Sport by Sport ID and Student by Student ID.
- 1.5 Admin will be able to sort and display records of --- Coach in ascending order of names, coaches' hourly pay rate in ascending order and coaches' overall performance in ascending order.
- 1.6 Admin will be able to modify specific records of --- Coach, Sport and Sport schedule.
- 1.7 Admin will be able to exit the system

2. Assumptions for Student (Registered and Non-Registered) functionality

- 2.1 All Students will be able to view details of --- Sport and Sport schedule
- 2.2 New students will be provided an option to register to access registered students' functionalities
- 2.3 All students will be able to exit the system

3. Assumptions for only registered student functionality

- 3.1 Registered students will be able to view records of --- their coach, their own record and registered sport schedule
- 3.2 Registered students will be able to modify their record
- 3.3 Registered students will be able to provide feedback to their coach
- 3.4 Registered students will be able to exit the system

Design - Pseudocode

1

def adminlogin():

Begin

Declare adminuserID,adminpwd,adminusername,adminpassword

adminuserID = "a"

adminpwd = "admin@123"

while True:

Display ("Enter admin username:\n")

read adminusername

if len(str(adminusername)) == 0

Display("No value is entered. Please enter correct username.")

continue

else if adminusername == adminuserID

Display ("Username is correct")

break

else

Display (" Wrong username \n Please enter correct username.")

continue

end if

end while

while True:

Display ("Enter admin password:\n")

read adminpassword

if len(str(adminpassword)) == 0

Display ("No value entered !! type again")

```

        continue
    else if adminpassword == adminpwd
        Display ("Password is correct")
        Display (" Login verified ")
        Display ("-----Welcome to Admin page-----")
        break
    else
        Display (" Wrong password \n Please enter correct password.")
        continue
    end if
end while
End

```

1.1

```

def addrecordssport()
Begin
    Declare
    cnt,loop,sportname,sportID,sportfile,line,lines,row,sportcentername,sportcenterID,
    user

    cnt = 0
    while True
        try
            Display("Enter number of sports you want to add:")
            read loop
            break
        except ValueError
            Display("Value entered is not valid")
            continue
        end while
    for cnt in range(loop)
        Display("Enter sport", cnt+1, "details---")
        while True
            Display("Enter sport name:")

```

```

        read sportname
        if len(sportname) == 0
            Display("No value is entered.")
            continue
        else
            break
        end if
    end while
    while True
        Dispay("Enter Sport ID:")
        read sportID
        if len(sportID) == 0
            Display("No value is entered.")
            continue
        else
            break
        end if
    end while

    Display("Checking if Sport ID already exists in database\n -----
-")

    open sportfile ("sportdetailfile.txt") for read mode
    for line in sportfile
        lines = line.strip()
        row = lines.split("\t")
        if sportID == row[0]
            Display("Sport ID already exists.")
            adminuser()
        else
            break
        end if
    end if
    Display("Sport ID is unique")
    while True
        sportcentername = ""

```

```

        sportcenterID = ""
        Display("Choose a Sport center: \n1. Royal Champions Sports
Academy Bukit Jalil \n2. Royal Champions Sports Academy Kuala Lumpur \n3.
Royal Champions Sports Academy Damansara \n :")
        read user
        if user == 1
            Display("Sport center chosen - Royal Champions Sports
Academy Bukit Jalil")
            sportcenterID = " RCSA BKJ "
            sportcentername = "Royal Champions Sports Academy Bukit
Jalil"

            Display ("Sport center ID is:",sportcenterID)
            break
        else if user == 2
            Display("Sport center chosen - Royal Champions Sports
Academy Kuala Lumpur")
            sportcenterID = " RCSA KUL "
            sportcentername = "Royal Champions Sports Academy Kuala
Lumpur"

            Display ("Sport center ID is:",sportcenterID)
            break
        else if user == 3
            Display ("Sport center chosen - Royal Champions
Sports Academy Damansara")
            sportcenterID = "RCSA DMS"
            sportcentername = "Royal Champions Sports Academy
Damansara"

            Display ("Sport center ID is:",sportcenterID)
            break
        else
            Display (" Number is not valid. \n Please choose again")
            continue
        end if
    end while

```



```

open file ("sportdetailfile.txt") for append mode

write(sportID+"\t"+sportname+"\t"+sportcentername+"\t"+sportcenterID+"\n"
) in ("sportdetailfile.txt")
close ("sportdetailfile.txt")

End

```

1.2

```

def addsportschedule():
Begin
    Declare
cnt,loop,sportschedulename,sportscheduleID,sportfile,line,lines,row,sportschedule
1,sportschedule2,sportschedule3,sportschedule4
    cnt = 0
    while True:
        try:
            Display("Enter number of sports you want to add schedules
for:"))

            read loop
            break
        except ValueError:
            Display("Value entered is not valid")
            continue
    end while
    for cnt in range(loop):
        Display("Enter sport", cnt+1, "schedule---")
        while True:
            Display("Enter sport name:")
            read sportschedulename
            if len(sportschedulename) == 0:
                Display("No value is entered.")
                continue
            else:

```

```

        break
    end if
while True:
    Display("Enter Sport ID:")
    read sportscheduleID
    if len(sportscheduleID) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while
Display("Checking if Sport ID already exists in database---\n -----
----")

open file ("sportdetailfile.txt") for read mode
for line in sportfile:
    lines = line.strip()
    row = lines.split("\t")
    if sportscheduleID == row[0]:
        Display("Sport ID is valid.")
    else:
        Display("Sport ID is not valid. \n Please start over.")
        addsportschedule()
    end if
end for loop
end for loop
Display("Enter Sport schedule for:",sportschedulename)
Display("Enter schedule for U-9 boys/girls (Example - 8am-11am Friday :)")
read sportschedule1
Display("Enter schedule for U-12 boys/girls (Example - 8am-11am
Wednesday:")
read sportschedule2
Display("Enter schedule for U-15 boys/girls (Example - 8am-11am
Saturday:")

```

```

read sportschedule3
Display("Enter schedule for U-17 boys/girls (Example - 8am-11am Monday:")
read sportschedule4
open ("sportscheduledetailfile.txt") for append mode

write(sportscheduleID+"\t"+sportschedulename+"\t"+sportschedule1+"\t"+spo
rtschedule2+"\t"+sportschedule3+"\t"+sportschedule4+"\n") in
sportscheduledetailfile.txt
close file sportscheduledetailfile.txt
End

```

1.3

```

def addrecordscoach():
Begin
    Declare
cnt,coachfile,loop,coachname,coachID,line,lines,row,coachdatejoined,coachdatete
rminated,coachhourlyrate,sportsfile,coachphonenummer,coachaddress,coachsport,
coachsportcode,coachcentername,coachcentercode,coachrating
    cnt = 0
    open("coachdetailfile.txt") for append mode
    write("Coach name: \tCoach ID: \tDate joined: \tDate terminated: \tHourly
rate: \tphone number: \taddress: \tSport: \tSport code: \tCenter name: \tCenter
code: \tCoach Rating \n") in coachdetailfile.txt
    close file ("coachdetailfile.txt")

    while True:
        try:
            Display("Enter number of coaches you want to add:")
            read loop
            break
        except ValueError:
            Display("Value entered is not valid")
            continue

```

```

end while
for cnt in range(loop):
    Display("Enter coach", cnt+1, "details---")
    while True:
        Display("Enter Coach name:")
        read coachname
        if len(coachname) == 0:
            Display("No value is entered.")
            continue
        else:
            break
        end if
    end while
    while True:
        Display("Enter Coach ID:")
        read coachID
        if len(coachID) == 0:
            Display("No value is entered.")
            continue
        else:
            break
        end if
    end while

    Display("Checking if Coach ID already exists in database---\n -----
-----")

    open("coachdetailfile.txt") for read mode
    for line in coachfile:
        lines = line.strip()
        row = lines.split("\t")
        if coachID == row[0]:
            Display("Coach ID already exists.")
            adminuser()
        else:

```

```

        Display("")
    end if
end for loop

Display("Coach Id is unique!")
while True:
    Display("Enter Coach date joined:")
    read coachdatejoined
    if len(coachdatejoined) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

while True:
    Display("Enter Coach date terminated:")
    read coachdateterminated
    if len(coachdateterminated) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

while True:
    Display("Enter Coach hourly rate (in Rm):")
    read coachhourlyrate
    if len(coachhourlyrate) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if

```

```
end while
while True:
    Display("Enter Coach phone number:")
    read coachphonenumber
    if len(coachphonenumber) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
```

```
end while
while True:
    Display("Enter Coach address:")
    read coachaddress
    if len(coachaddress) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
```

```
end while
```

```
open("sportdetailfile.txt","r") in read mode
for rows in sportsfile:
    Display(rows+""+sportsfile.read())
```

```
while True:
    Display("Enter Coach sport:")
    read coachsport
    if len(coachsport) == 0:
        Display("No value is entered. Please enter correct username.")
        continue
    else:
        break
```

```

        end if
    end while
    while True:
        Display("Enter code of sport that coach teaches :")
        read coachsportcode
        if len(coachsportcode) == 0:
            Display("No value is entered. Please enter correct username.")
            continue
        else:
            break
        end if
    end while
    while True:
        Display("Enter name of sport center where coach teaches :")
        read coachcentername
        if len(coachcentername) == 0:
            Display("No value is entered. Please enter correct username.")
            continue
        else:
            break
        end if
    end while
    while True:
        Display("Enter code of sport center where coach teaches :")
        read coachcentercode
        if len(coachcentercode) == 0:
            Display("No value is entered. Please enter correct username.")
            continue
        else:
            break
        end if
    end while
    coachrating="0"
    open("coachdetailfile.txt") for append mode

```

```

        write(str(coachID)+"\t"+coachname+"\t"+coachdatejoined+"\t"+coachdateter
minated+"\t"+coachhourlyrate+"\t"+coachphonenummer+"\t"+coachaddress+"\t"+
coachsport+"\t"+coachsportcode+"\t"+coachcentername+"\t"+coachcentercode+"\
t"+coachrating+"\n") in coachdetailfile.txt
        close file ("coachdetailfile.txt")
    end for loop
end

```

1.4

```

def searchdata():
Begin
    Declare data,search,datasearch,coachfile,line,lines,row,sportfile,studentfile
    Display("1. Coach \n2. Sport \n3. Student \nPress any other key to
terminate\n")
    while True:
        try:
            Display("Which records do you want to search: \n")
            read data
            break
        except ValueError:
            Display("Value entered is not valid")
            continue
    end while
    if data >= 1 and data <= 3:
        if data == 1:
            Display(" 1. By Coach ID \n 2. By Coach rating")
            Display(" How would you like to search data: \n"))
            read search
            if search == 1:
                Display("Enter coach ID to search:")
                read datasearch
                open ("coachdetailfile.txt") in read mode

```



```

for line in coachfile:
    lines = line.rstrip()
    row = lines.split("\t")
    if datasearch == row[0]:
        Display("Coach ID found!")
        Display(row)
        adminuser()
    else:
        Display("Coach ID not found in database")
        searchdata()
    end if
end for loop
coachfile.close()
else:
    Display("Enter coach rating to search:")
    read datasearch
    open ("coachdetailfile.txt") in read mode
    for line in coachfile:
        lines = line.strip()
        row = lines.split("\t")
        if datasearch == row[11]:
            Display(row)
            adminuser()
        else:
            Display("Coach rating not found in database")
            adminuser()
        end if
    end for loop
    coachfile.close()
end if
else if data ==2:
    Display("Enter Sport ID to search:")
    read datasearch
    sportfile = open("sportdetailfile.txt","r")

```

```

        for line in sportfile:
            lines = line.strip()
            row = lines.split("\t")
            if datasearch == row[0]:
                Display("Sport ID found!")
                Display(row)
                adminuser()
            else:
                Display("Sport ID not found in database")
                adminuser()
        end if
    end for loop
else if data==3:
    Display("Enter student ID to search student")
    read datasearch
    studentfile = open("newstudentfile.txt","r")
    for line in studentfile:
        lines = line.rstrip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display(row)
            adminuser()
        else:
            Display("Student ID not found in database")
            adminuser()
    end if
end for loop

else:
    Display("")
    Display("Are you sure you wan to exit? \nPress 1 to restart
from where you left off or 0 to Exit")
    Display("Enter your decision")
    read restart

```

```

        if restart == 1:
            searchdatacoach()
        end if
    end if
end if
End

```

1.5

```
def modifydataadmin():
```

```
Begin
```

```
    Declare
```

```
    modify_admin,new[],line,lines,row[],choice,ele,datasearch,newcoachcode,newcoa
    chname,newsportcentername,newsportcentercode,data,data2,sportfile,newsportco
    de,newsportname,new_sportcentername,new_sportcentercode,sportschedulefile,ne
    w_sportschedule1,new_sportschedule2,new_sportschedule3,new_sportschedule4

```

```
    Display("-----Welcome to Modify records-----")
```

```
    Display("1.Coach\n2.Sport\nSport Schedule")
```

```
    while True:
```

```
        try:
```

```
            Display("Which records do you want to modify: \n")
```

```
            read modify_admin
```

```
            break
```

```
        except ValueError:
```

```
            Display("Value entered is not valid")
```

```
            continue
```

```
    end while
```

```
    if modify_admin >=1 and modify_admin <=3:
```

```
        if modify_admin ==1:
```

```
            Display("Enter Coach ID to search:")
```

```
            read datasearch
```

```
            coachfile = open("coachdetailfile.txt","r")
```

```
            for line in coachfile:
```

```
                lines = line.strip()

```

```

row = lines.split("\t")
if datasearch == row[0]:
    Display("Coach ID found!")
    Display("code\tCoach name\tSport center
name\t\t\tSport center code")
    Display(row)
    Display("1. Code\n2. Sport name\n3. Sport
center name \n4. Sport center code")
    while True:
        Display(input("Enter your choice to modify:"))
        read choice
        if choice ==1:
            ele = row[0]
            Display("Enter new coach code:")
            read newcoachcode
            row.remove(ele)
            row.insert(0,newcoachcode)
            break
        else if choice ==2:
            ele = row[1]
            Display("Enter new coach name:")
            read newcoachname
            row.remove(ele)
            row.insert(1,newcoachname)
            break
        else if choice ==3:
            ele = row[9]
            Display("Enter new sport center name:")
            read newsportcentername
            row.remove(ele)
            row.insert(9,newsportcentername)
            break
        else if choice ==4:
            ele =row[10]

```

```

        Display("Enter new sport center code:")
        read newsportcentercode
        row.remove(ele)
        row.insert(10,newsportcentercode)
        break
    else:
        Display("Wrong input")
        continue
    end if
end while
end if
new.append(row)
end for loop
coachfile=open("coachdetailfile.txt","w")
for data in new:
    for data2 in data:
        coachfile.write(data2)
        coachfile.write("\t")
    end for loop
    coachfile.write("\t")
end for loop
coachfile.close()
adminuser()

if modify_admin ==2:
    Display("Enter Sport ID to search:")
    read datasearch
    sportfile = open("sportdetailfile.txt","r")
    new=[]
    for line in sportfile:
        lines = line.strip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display("Sport ID found!")

```

```

Display("code\tSport name\tSport center
name\t\t\tSport center code")
Display(row)
Display("1. Code\n2.Sport name\n3. Sport
center name \n4. Sport center code")
while True:
    Display("Enter your choice to modify:")
        read choice
    if choice ==1:
        ele = row[0]
        Display("Enter new sport code:")
            read newsportcode
        row.remove(ele)
        row.insert(0,newsportcode)
        break
    else if choice ==2:
        ele = row[1]
        Display("Enter new sport name:")
            read newsportname
        row.remove(ele)
        row.insert(1,newsportname)
        break
    else if choice ==3:
        ele = row[2]
        Display("Enter new sport center name:")
            read new_sportcentername
        row.remove(ele)
        row.insert(2,new_sportcentername)
        break
    else if choice ==4:
        ele =row[3]
        Display("Enter new sport center code:")
            read new_sportcentercode
        row.remove(ele)

```

```

        row.insert(3,new_sportcentercode)
        break
    else:
        Display("Wrong input")
        continue
    end if
end while
end if
new.append(row)
end for loop
sportfile=open("sportdetailfile.txt","w")
for data in new:
    for data2 in data:
        sportfile.write(data2)
        sportfile.write("\t")
    end for loop
    sportfile.write("\t")
end for loop
sportfile.close()
adminuser()

if modify_admin ==3:
    Display("Enter Sport ID to search:")
    read datasearch
    sportschedulefile = open("sportscheduledetailfile.txt","r")
    for line in sportschedulefile:
        lines = line.strip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display("Sport ID found!")
            Display("code\tSport name\tSport schedule
1\t\tSport schedule 2\t\tSport schedule 3\t\tSport schedule 4")
            Display(row)

```

```

Display("1. Code\n2.Sport name\n3.Sport
schedule 1 \n4. Sport schedule 2\n5. Sport schedule 3\n6. Sport schedule 4")
while True:
Display("Enter your choice to modify:")
    read choice
if choice ==1:
    ele = row[0]
    Display("Enter new sport code:")
        read newsportcode
    row.remove(ele)
    row.insert(0,newsportcode)
    break
else if choice ==2:
    ele = row[1]
    Display("Enter new sport name:")
        read newsportname
    row.remove(ele)
    row.insert(1,newsportname)
    break
else if choice ==3:
    ele = row[2]
    Display("Enter new sport schedule:")
        new_sportschedule1
    row.remove(ele)
    row.insert(2,new_sportschedule1)
    break
else if choice ==4:
    ele =row[3]
    Display("Enter new sport schedule:")
        read new_sportschedule2
    row.remove(ele)
    row.insert(3,new_sportschedule2)
    break
else if choice ==5:

```



```

        ele =row[4]
        Display("Enter new sport schedule:")
            read new_sportschedule3
        row.remove(ele)
        row.insert(4,new_sportschedule3)
        break
    else if choice ==6:
        ele =row[5]
        Display("Enter new sport schedule:")
            read new_sportschedule4
        row.remove(ele)
        row.insert(5,new_sportschedule3)
        break
    else:
        Display("Wrong input")
        continue
    end if
end while
end if
new.append(row)
end for loop
sportschedulefile=open("sportscheduledetailfile.txt","w")
for data in new:
    for data2 in data:
        sportschedulefile.write(data2)
        sportschedulefile.write("\t")
    end for loop
    sportschedulefile.write("\n")
end for loop
sportschedulefile.close()
adminuser()
end if
end if
End

```

1.6

```
def sortdatacoach():
```

```
    Begin
```

```
        Declare
```

```
    user,namelist,coachfile,test[],lines,line,op,element,j,num,testing,li,restart
```

```
    while True:
```

```
        try:
```

```
            Display("1. Coaches in ascending order by name \n2. Coaches  
by hourly pay rate in ascending order \n3. Coaches by overall perfomace in  
ascending order \n Enter any other number to exit\nEnter how you would like to  
sort:\n")
```

```
            Read user
```

```
            break
```

```
        except ValueError:
```

```
            Display (" Oops! That is not a valid input. Enter again.")
```

```
            continue
```

```
    if user >= 1 and user <= 3:
```

```
        if user == 1:
```

```
            open("coachdetailfile.txt" in read mode
```

```
            test = coachfile.readlines()
```

```
            for lines in test:
```

```
                line=lines.strip()
```

```
                op=line.split("\t")
```

```
                append(op[1]) in namelist
```

```
            end for loop
```

```
            for element in range(len(namelist)):
```

```
                for j in range(element+1, len(namelist)):
```

```
                    if namelist[element] < namelist[j]:
```

```
                        Display("")
```

```
                    else:
```

```
                        num = namelist[element]
```

```
                        namelist[element] = namelist[j]
```

```

        namelist[j] = num
        Display("")
    end if
end for loop
end for loop

open("coachdetailfile.txt" in read mode
testing=coachfile.readlines()
for li in namelist:
    for lines in testing:
        line=lines.strip()
        ops=line.split("\t")
        if (ops[1] in li):
            Display(line)
        end if
    end for loop
end for loop

if user == 2:
    open("coachdetailfile.txt" in read mode
    test = coachfile.readlines()
    for lines in test:
        line=lines.strip()
        op=line.split("\t")
        namelist.append(op[4])

    for element in range(len(namelist)):
        for j in range(element+1, len(namelist)):
            if namelist[element] < namelist[j]:
                Display("")
            else:
                num = namelist[element]
                namelist[element] = namelist[j]
                namelist[j] = num
            Display("")

```

```

        end if
    end for loop
end for loop

open("coachdetailfile.txt" in read mode
testing=coachfile.readlines()
for li in namelist:
    for lines in testing:
        line=lines.strip()
        ops=line.split("\t")
        if (ops[4] in li):
            Display(line)
        end if
    end for loop
end for loop

if user == 3:
    open("coachdetailfile.txt" in read mode
    test = coachfile.readlines()
    for lines in test:
        line=lines.strip()
        op=line.split("\t")
        namelist.append(op[11])
    end for loop

    for element in range(len(namelist)):
        for j in range(element+1, len(namelist)):
            if namelist[element] < namelist[j]:
                Display("")
            else:
                num = namelist[element]
                namelist[element] = namelist[j]
                namelist[j] = num
                Display("")
            end if
        end if
    end for loop
end if

```

```

        end for loop
    end for loop

    open("coachdetailfile.txt" in read mode
    testing=coachfile.readlines()
    for li in namelist:
        for lines in testing:
            line=lines.strip()
            ops=line.split("\t")
            if (ops[11] in li):
                Display(line)
            end if
        end for loop
    end for loop
end if

else:
    Display("")
    Display("Are you sure you wan to exit? \nPress 1 to restart from where
you left off or 0 to Exit")
    Display("Enter your decision")
    read restart
    if restart == 1:
        sortdatacoach()
    End if
End

```

1.7

```

def opencoachfile():
Begin
    open("coachdetailfile.txt" in read mode
    Display(coachfile.read())
    coachfile.close()

```

End

1.8

```
def opensportfile():
```

```
Begin
```

```
    sportfile = open("sportdetailfile.txt","r")
```

```
    Display(sportfile.read())
```

```
    sportfile.close()
```

```
End
```

1.9

```
def opensportschedulefile():
```

```
Begin
```

```
    Display(" -----Sport Schedule -----")
```

```
    sportschedulefile = open("sportscheduledetailfile.txt","r")
```

```
    Display(sportschedulefile.read())
```

```
    sportschedulefile.close()
```

```
End
```

2

```
def openregisteredstudentfile():
```

```
Begin
```

```
    registeredstudentfile = open("newstudentfile.txt","r")
```

```
    Display(registeredstudentfile.read())
```

```
    registeredstudentfile.close()
```

```
End
```

2.1

```
def loginoldstudent():
```

```
Begin
```

```
    Declare studentname,studentpassword,i,file,success,a,b
```

```
    while True:
```

```
        success = False
```

```
        file = open("studentuserpass.txt","r")
```

```
        Display("Enter student username:")
```

```

        read studentname
        Display("Enter student password:")
        read studentpassword
        for i in file:
            a,b = i.split(",")
            b = b.strip()
            if (a==studentname and b==studentpassword):
                success = True
                break
            end if
        end for loop
        file.close()
        if (success):
            Display("Login successful")
            Display("-----Welcome to Student page-----")
            oldstudentuser()
            break
        else:
            Display ("Wrong username or password")
            continue
        end if
    end while
End

```

2.2

```
def newstudentregister():
```

```
Begin
```

```
    Declare
```

```

studentuserpass,studentname,studentpassword,studentID,newstdregister,line,lines,
row,student_name,sportfile,studentgender,studentage,studentphone,coachfile,sport
schedule,studentsportschedule,studentsportcode,studentsportname,studentsportcen
tername,studentsportcentercode,element,studentcoachname,studentcoachID,stude
ntcoachfee

```

```

studentuserpass = open("studentuserpass.txt","a")
while True:
    Display("Enter your username:")
    read studentname
    if len(studentname) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while
while True:
    Display("Enter your password:")
    read studentpassword
    if len(studentpassword) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

studentuserpass.write(studentname + "," + studentpassword + "\n")
studentuserpass.close()
while True:
    Display("Enter your ID (example - student1):")
    read studentID
    if len(studentID) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

```



```

Display("Checking if student ID already exists in database---\n -----")
newstdregister = open("newstudentfile.txt","r")
for line in newstdregister:
    lines = line.strip()
    row = lines.split("\t")
    if studentID == row[0]:
        Display("Student ID already exists.")
        newstudentregister()
    else:
        Display("")
    end if
end for loop

Display("Student ID was unique!")
while True:
    Display("Enter name:")
    read student_name
    if len(student_name) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while
while True:
    Display("Enter Male or Female:")
    read studentgender
    if len(studentgender) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

```

```

while True:
    Display("Enter age:")
    read studentage
    if len(studentage) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

while True:
    Display("Enter phone number:")
    read studentphone
    if len(studentphone) == 0:
        Display("No value is entered.")
        continue
    else:
        break
    end if
end while

sportfile = open("sportdetailfile.txt", "r")
Display("code\tSport name\tSport center name\t\t\tSport center code")
Display(sportfile.read())
Display("Enter the Sport code:")
read studentsportcode
Display("Enter corresponding Sport name:")
read studentsportname
Display("Enter Sport center name:")
read studentsportcentername
Display("Enter Sport center code:")
read studentsportcentercode
Display("Coach's code\tCoach's name\tHourly rate")
coachfile=open("coachdetailfile.txt", "r")
for element in coachfile:

```

```

        lines = element.strip()
        line= lines.split("\t")
        if (studentsportcode == line[8]):
            Display(line[0]+\t\t+line[1]+\t\t+line[4])
        end if
    end for loop
    Display("Enter coach name:")
    read studentcoachname
    Display("Enter coach ID:")
    read studentcoachID
    Display("Enter coach fee:")
    read studentcoachfee
    Display("The Sport schedule is:")
    sportschedule = open("sportscheduledetailfile.txt","r")
    for line in sportschedule:
        lines = line.strip()
        row = lines.split("\t")
        if studentsportcode == row[0]:
            Display(row)
        end if
    end for loop
    Display("Enter your sport schedule:")
    read studentsportschedule
    newstdregister = open("newstudentfile.txt", "a")

    newstdregister.write(studentID+"\t"+student_name+"\t"+studentgender+"\t"+s
tudentage+"\t"+studentphone+"\t"+studentsportcode+"\t"+studentsportname+"\t"+
studentsportcentername+"\t"+studentsportcentercode+"\t"+studentcoachname+"\t"
+studentcoachID+"\t"+"Rm"+studentcoachfee+"\t"+studentsportschedule+"\n")
    newstdregister.close()

    Display ("Successfully registered!")
    Display("-----Redirecting to Login page-----")
    loginoldstudent()

```

End

2.2

```
def adminuser():
```

```
    Begin
```

```
        Decalre admin_user,addrecorduser,displayrecorduser
```

```
        while True:
```

```
            try:
```

```
                Display("1. Add records \n2. Display records \n3. Search  
records \n4. Sort records \n5. Modify records \nPress 0 to Exit\n")
```

```
                read admin_user
```

```
                break
```

```
            except ValueError:
```

```
                Display (" Oops! That is not a valid input. Enter again.")
```

```
                continue
```

```
        end while
```

```
        if (admin_user >=1):
```

```
            if admin_user == 1:
```

```
                Display ("1. Coach \n 2. Sport \n 3. Sport schedule")
```

```
                Display("Enter correspondng number of which records you  
would like to add:")
```

```
                read addrecordsuser
```

```
                if addrecordsuser == 1:
```

```
                    addrecordscoach()
```

```
                    adminuser()
```

```
                else if addrecordsuser == 2:
```

```
                    addrecordssport()
```

```
                    adminuser()
```

```
                else if addrecordsuser ==3:
```

```
                    addsportschedule()
```

```
                    adminuser()
```

```
                else:
```

```
                    Display("Invalid input")
```

```
                    adminuser()
```

```

        end if

    else if admin_user == 2:
        Display ("1. Coach \n 2. Sport \n 3. Registered students")
        Display("Enter corresponding number of which records you
would like to display:")
        read displayrecorduser
        if displayrecorduser == 1:
            opencoachfile()
            adminuser()
        else if displayrecorduser == 2:
            opensportfile()
            adminuser()
        else if displayrecorduser == 3:
            openregisteredstudentfile()
            adminuser()
        else:
            Display("Invalid input")
            adminuser()
        end if
    else if admin_user ==3:
        searchdata()
    else if admin_user ==4:
        sortdatacoach()
    else if admin_user ==5:
        modifydataadmin()
    else:
        Display("Wrong input. Press any number \n")
        read admin_user
        adminuser()
    end if
else:
    Display("")
end if

```

End

2.3

```
def oldstudentuser():
```

```
    Begin
```

```
        Declare
```

```
        oldstudentuser,search,datasearch,coachfile,line,lines,row,studentfile,sportschedule
        file,choice,ele,new[],newstudentcode,newstudentname,newstudentgender,newstud
        entage,newstudentphone,new_sport,new_studentsportcentername,new_studentspo
        rtcentercode,new_studentsportschedule,data,data2,element,newcoachrating,newcr
        1,newcr2
```

```
        Display ("-----Welcome to Registered Student Page-----")
```

```
        while True:
```

```
            try:
```

```
                Display("1. Displpay records \n2. Modify your record \n3.
```

```
Provide feedback to coach \nPress any other key to Exit\n")
```

```
                read oldstudentuser
```

```
                break
```

```
            except ValueError:
```

```
                Display (" Oops! That is not a valid input. Enter again.")
```

```
                continue
```

```
        end while
```

```
        if oldstudentuser == 1:
```

```
            Display("1. Display record of Coach \n2. Display self-record \n3.
```

```
Display registered coach")
```

```
            read search
```

```
            if search ==1:
```

```
                Display("Enter your coach's ID to display records:")
```

```
                read datasearch
```

```
                coachfile = open("coachdetailfile.txt","r")
```

```
                for line in coachfile:
```

```
                    lines = line.rstrip()
```

```
                    row = lines.split("\t")
```

```
                    if datasearch == row[0]:
```

```

        Display(row)
        studentuser()
    else:
        Display("not found")
        studentuser()
    end if
else if search ==2:
    Display("Enter your student ID to display your records:")
    read datasearch
    studentfile = open("newstudentfile.txt","r")
    for line in studentfile:
        lines = line.rstrip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display(row)
            studentuser()
        else:
            Display("not found")
            studentuser()
    end if
else if search ==3:
    Display("Enter your sport ID to display your schedule:")
    read datasearch
    sportschedulefile = open("sportschedulefile.txt","r")
    for line in sportschedulefile:
        lines = line.rstrip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display(row)
            studentuser()
        else:
            Display("not found")
            studentuser()
    end if

```

```

        end if
    else:
        Display("Wrong input")
        studentuser()
    end if
else if oldstudentuser == 2:
    Display("Enter your student ID :")
    read datasearch
    studentfile = open("newstudentfile.txt","r")
    new=[]
    for line in studentfile:
        lines = line.strip()
        row = lines.split("\t")
        if datasearch == row[0]:
            Display("Student ID found!")
            Display(row)
            Display("1. Code\n 2. Name \n3.Gender \n4. Age \n5. Phone
number\n6. Sport \n7. Sport Center name \n8. Sport center code \n9. Sport
schedule")
        while True:
            Display("Enter your choice to modify:")
            read choice
            if choice ==1:
                ele = row[0]
                Display("Enter new student code:")
                read newstudentcode
                row.remove(ele)
                row.insert(0,newstudentcode)
                break
            else if choice ==2:
                ele = row[1]
                Display("Enter new student name:")
                read newstudentname
                row.remove(ele)

```



```

row.insert(1,newstudentname)
break
else if choice ==3:
ele = row[2]
Display("Enter new student gender:")
        read newstudentgender
row.remove(ele)
row.insert(2,newstudentgender)
break
else if choice ==4:
ele =row[3]
Display("Enter new age:")
        newstudentage
row.remove(ele)
row.insert(3,newstudentage)
break
else if choice ==5:
ele =row[4]
Display("Enter new student phone:")
        read new_studentphone
row.remove(ele)
row.insert(4,new_studentphone)
break
else if choice ==6:
ele =row[5]
Display("Enter new sport:")
        new_sport
row.remove(ele)
row.insert(5,new_sport)
break
else if choice ==7:
ele =row[6]
Display("Enter new sport center name:")
        read new_studentsportcentername

```

```

        row.remove(ele)
        row.insert(6,new_studentsportcentername)
        break
    else if choice ==8:
        ele =row[7]
        Display("Enter new sport center code:")
            read new_studentsportcentercode
        row.remove(ele)
        row.insert(7,new_studentsportcentercode)
        break
    else if choice ==9:
        ele =row[8]
        Display("Enter new sport schedule:")
            read new_studentsportschedule
        row.remove(ele)
        row.insert(8,new_studentsportschedule)
        break
    else:
        Display("Wrong input")
        studentuser()
    end if
end while
end for loop
    new.append(row)
    studentfile=open("newstudentfile.txt","w")
    for data in new:
        for data2 in data:
            studentfile.write(data2)
            studentfile.write("\t")
            studentfile.write("\t")
            studentfile.close()
            adminuser()
else if oldstudentuser ==3:
    Display("Enter your sport code:")

```

```

read studentsportcode
coachfile=open("coachdetailfile.txt","r")
for element in coachfile:
    lines = element.strip()
    line= lines.split("\t")
    if (studentsportcode == line[8]):
        Display("Coach's code\tCoach's name\tcoach rating")
        Display(line[0]+\t\t+line[1]+\t\t+line[11])
        ele = line[11]
        Display("Enter number out of 5 to rate your coach:")
        read newcoachrating
        newcr1 = newcoachrating + ele
        newcr2 = newcr1/2
        line.remove(ele)
        line.insert(11,newcr2)
    end for loop

else:
    Display("Wrong input")
    studentuser()

end if
End

```

2.4

```

def studentuser():
Begin
    Declare student_user
    Display ("1.View details of Sport \n2. View details of Sport Schedule \n3.
Register (only for new students) \n4. Login ( for existing students ) \n5. Press 5 to
Exit")
    while True
        try
            Display (input("Enter your option:"))

```

```

        read student_user
        break
    except ValueError
        Display ("oops! not a valid number! Enter your option again.")
        continue
end while
if student_user == 1
    opensportfile()
else if student_user == 2
    opensportschedulefile()
else if student_user == 3
    newstudentregister()
else if student_user == 4
    loginoldstudent()
else if student_user == 5
    Display("")
else
    Display(" Wrong input ")
    studentuser()
end if
End

```

2.5

```

def mainfunction()
Begin
    Declare user
    Display ("-----Welcome to Real Champions Sports Academy-----")
    Display (" 1. Admin \t 2. Student")
    while True
        try
            Display("Enter the corresponding number to select the user:")
            read user
            break
        except ValueError

```

```

        Display("oops! not a valid number! Enter your option again.")
    end while
    if user == 1
        adminlogin()
        adminuser()
    else if user == 2
        studentuser()
    else
        Display ("oops! not a valid number! Enter your option again.")
        mainfunction()
    end if
End
2.6
Begin
    mainfunction()
End

```


Sample Python Code/Source Code

1. Variables –

Variables are basically names given to reserved memory locations utilized to store data (Python Variables - GeeksforGeeks, 2020). They take up memory space based on the type of data user is asked to enter. There are 3 types of variables –

Float, Integer and String. The most basic rule of creating a variable is that it cannot start with a number, it must start with a number or an underscore. One more important rule to remember is that variable names are case sensitive. For example, Name and name are two different variables.

```
sportcentername = ""
sportcenterID = ""
user = int(input("Choose a Sport center: \n1. Royal Champions Sports Academy Bukit Jalil \n2. !
if user == 1:
    print("Sport center chosen - Royal Champions Sports Academy Bukit Jalil")
    sportcenterID = " RCSA BKJ "
    sportcentername = "Royal Champions Sports Academy Bukit Jalil"
    print ("Sport center ID is:",sportcenterID)
    break
elif user == 2:
    print("Sport center chosen - Royal Champions Sports Academy Kuala Lumpur")
    sportcenterID = " RCSA KUL "
    sportcentername = "Royal Champions Sports Academy Kuala Lumpur"
    print ("Sport center ID is:",sportcenterID)
    break
elif user == 3:
    print ("Sport center chosen - Royal Champions Sports Academy Damansara")
    sportcenterID = "RCSA DMS"
    sportcentername = "Royal Champions Sports Academy Damansara"
    print ("Sport center ID is:",sportcenterID)
    break
else:
    print (" Number is not valid. \n Please choose again")
    continue

sportfile = open("sportdetailfile.txt","a")
sportfile.write(sportID+"\t"+sportname+"\t"+sportcentername+"\t"+sportcenterID+"\n")
sportfile.close()

for line in coachfile:
    lines = line.strip()
    row = lines.split("\t")
    if datasearch == row[0]:
        print("Coach ID found!")
        print("code\tCoach name\tSport center name\t\t\t\tSport center code")
        print(row)
        print("1. Code\n2.Sport name\n3. Sport center name \n4. Sport center code")
        while True:
            choice = int(input("Enter your choice to modify:"))
            if choice ==1:
                ele = row[0]
                newcoachcode = input("Enter new coach code:")
                row.remove(ele)
                row.insert(0,newcoachcode)
                break
```

In the figures above, we can observe that I have utilized variables for different purposes in my source code.

1. sportcentername and sportcenterID both are empty string variables which are later assigned string values depending on the condition the “user” variable fulfills.
2. user variable is an integer variable that means it can only accept integer values else it will show an error.
3. sportfile is a variable used to open a text file called sportdetailfile in append mode. This makes it easier to handle files such as in cases of writing, reading and closing.
4. Lastly, row is being used as a list variable which stores values from a file

2. Control Structure

2.1.1 IF –

IF statements are generally control flow statements which helps one to run a specific code only when a certain condition is satisfied. (Singh,2020)

<https://beginnersbook.com/2018/01/python-if-statement-example/>

```
for line in sportschedule:
    lines = line.strip()
    row = lines.split("\t")
    if studentsportcode == row[0]:
        print(row)
```

In the figure above, we can observe the if structure. Here only if the pre-defined variable studentsportcode is equal to the value in 0th position of list variable row, then print the whole line in row. The line will be printed only if the condition is met.

2.1.2 IF ELSE –

If-else statement is usually used when one statement is to be judged on the basis of another. If the first statement is false, then there should be an else statement that should justify the logic of the code.

```
if datasearch == row[0]:
    print(row)
    studentuser()
else:
    print("not found")
    studentuser()
```

In the figure above, we can see how the if else statement actually works. If datasearch variable is equal to the 0th index value in list row, then print the row. Else if the

statement is false, print “not found” statement to make user understand that there the value he was searching for was not found.

2.1.3 Nested IF ELSE –

When you have an if statement inside another if condition, it is known as nested if-else control structure.

```
if (admin_user >=1):
    if admin_user == 1:
        print ("1. Coach \n 2. Sport \n 3. Sport schedule")
        addrecordsuser = int(input("Enter correspondning number of which records you would like to add:"))
        if addrecordsuser == 1:
            addrecordscoach()
            adminuser()
        elif addrecordsuser == 2:
            addrecordssport()
            adminuser()
        elif addrecordsuser ==3:
            addsportschedule()
            adminuser()
        else:
            print("Invalid input")
            adminuser()
```

In the figure above, we can see how nested if else is being used in the source code. First, the condition specifies the variable admin_user to be equal to or greater than 1. Next if admin_user equals to 1. A print statement is provided. Next another if statement is provided after taking input from user of the variable addrecorduser. If addrecorduser equals to 1, the first if statement comes true and executes, else if addrecorduser is equal to 2, the second statement becomes true and executes the functionalities within it. Same goes for the addrecorduser equal to 3. Finally, else statement is provided for all values except for the one's mentioned in the if statements.

2.2 Looping Structure

2.2.1 While Loop –

A while loop is a looping structure used in Python programming which repeats the given statements under it until the given condition is true. The loop can also become an infinite loop when the given condition is never False.

```

while True:
    choice = int(input("Enter your choice to modify:"))
    if choice ==1:
        ele = row[0]
        newstudentcode = input("Enter new student code:")
        row.remove(ele)
        row.insert(0,newstudentcode)
        break

```

In the figure above, we can see how while loop is implemented in my code. While True is a type of while loop which will run indefinitely unless exited through break. It runs infinitely because of the True statement written beside. Now, as true can never simply be false, the while loop runs infinitely. Therefore, a break statement is used after if condition is satisfied to exit the loop and execute the code further.

2.2.2 For Loop –

For loops are mostly used for repeating the code over a sequence of numbers. This can be achieved by using the range function. One can also utilize and decide the start point, end point and step while using range in for loops.

```

cnt = 0
while True:
    try:
        loop = int(input("Enter number of sports you want to add:"))
        break
    except ValueError:
        print("Value entered is not valid")
        continue
for cnt in range(loop):
    print("Enter sport", cnt+1, "details---")
    while True:
        sportname = input("Enter sport name:")
        if len(sportname) == 0:
            print("No value is entered.")
            continue
        else:
            break
    while True:
        sportID = input("Enter Sport ID:")
        if len(sportID) == 0:
            print("No value is entered.")
            continue
        else:
            break

```

In the source code above, for loop is being utilized in the 9th line. Two variables; cnt and loop are used in for loop. Loop variable asks user input for the number of times the for loop will repeat. Cnt variable is used for the convenience of the user, it will increase by one every time the loop iterates. For example, 1st time looping- Enter sport 1 details, 2nd time looping- Enter sport 2 details and this process goes on for “loop” number of times. If user enters loop’s value as 2, the user will be asked to enter sport name and sportID twice.

2.3 List

Python list is one of Python's very basic data structure. It can contain values of different data types separated by commas and stores between brackets. Each element in a list is provided an index. It is a numerical value which determines the location an element in a list.

```
coachfile = open("coachdetailfile.txt", "r")
test = coachfile.readlines()
namelist = []
for lines in test:
    line=lines.strip()
    op=line.split("\t")
    namelist.append(op[1])
```

In the figure above, namelist is an empty list at first. After the for loop is executed, the values of coachfile at 0th index is being appended to the name list one by one and row by row.

2.4 Functions

- a) Function name – adminlogin()

```
def adminlogin():
```

This function contains the code for logging in the admin user. Username and password of the admin user is stored in variables. This function decides whether the admin will be able to log in or not.

- b) Function name – addrecordssport()

```
def addrecordssport():
```

This function contains the code to let admin user add records of sport and then later write them to a file.

- c) Function name – addsportschedule()

```
def addsportschedule():
```

This function contains the code to let admin user add records of sport schedule and then later add them to a file.

- d) Function name – addrecordscoach()

```
def addrecordscoach():
```

This function contains the code which lets admin user to add records of coach and then later write them to a file.

- e) Function name – searchdata()

```
def searchdata():
```

This function contains the code which lets admin user to search data of Coach by Coach ID and coach rating, Sport by SportID and Student by StudentID

- f) Function name – modifydataadmin()

```
def modifydataadmin():
```

This function lets admin user modify records of Coach, Sport and Sport Schedule

- g) Function name – sortdatacoach()

```
def sortdatacoach():
```

This function lets admin user to sort records of coach by coach name in ascending order, by hourly pay in ascending order and by overall performance in ascending order.

- h) Function name – opencoachfile()

```
| def opencoachfile():
```

Function to display all records of coach

- i) Function name – opensportfile()

```
| def opensportfile():
```

Function to display all records of sports

- j) Function name – opensportschedulefile()

```
| def opensportschedulefile():
```

Function to display all records of sport schedule

- k) Function name – openregisteredstudentfile()

```
| def openregisteredstudentfile():
```

Function to display all records of registered student

- l) Function name –loginoldstudent()

```
| def loginoldstudent():
```

Function which checks username and corresponding password from file and logs in student

- m) Function name –newstudentregister()

```
| def newstudentregister():
```

Function to register new student and write their records in a file

- n) Function name –adminuser()

```
| def adminuser():
```

Function which contains main menu for admin through which user can access other functionalities.

- o) Function name –oldstudentuser()

```
| def oldstudentuser():
```

Function which contains all the services provided to only the registered students

- p) Function name –studentuser()

```
| def studentuser():
```

Function which contains all services provided to all the students; registered and unregistered.

- q) Function name –mainfunction()

```
| def mainfunction():
```

Function which contains the main menu of the system. All the other functions are somewhat connected to this.

2.5 File

- a) Write data in file:

```

print("Enter Sport schedule for:",sportschedulename)
sportschedule1 = input("Enter schedule for U-9 boys/girls (Example - 8am-11am Friday :)")
sportschedule2 = input("Enter schedule for U-12 boys/girls (Example - 8am-11am Wednesday:")
sportschedule3 = input("Enter schedule for U-15 boys/girls (Example - 8am-11am Saturday:")
sportschedule4 = input("Enter schedule for U-17 boys/girls (Example - 8am-11am Monday:")
schedulefile = open("sportscheduledetailfile.txt","a")
schedulefile.write(sportscheduleID+"\t"+sportschedulename+"\t"+sportschedule1+"\t"+sportschedule2+"\t"+sportschedule3+"\t"+sportschedule4+"\n")
schedulefile.close()

```

In the figure shown above, schedulefile is a variable used to open sportscheduledetail text file in append mode. Just before that the user enters 4 records of sports schedule. The sport records are then written in the schedulefile. Lastly, the file is closed so later file could be opened in read mode and displayed.

b) Read data from file:

```

print(" -----Sport Schedule -----")
sportschedulefile = open("sportscheduledetailfile.txt","r")
print(sportschedulefile.read())
sportschedulefile.close()

```

In the figure shown above, sportschedulefile variable is being used to open the sportscheduledetail text file in read mode. Then to display all records stored inside the file, print statement is used. Finally, the sportschedule file is closed.

c) Search data in file:

```

datasearch = input("Enter coach ID to search:")
coachfile = open("coachdetailfile.txt","r")
for line in coachfile:
    lines = line.rstrip()
    row = lines.split("\t")
    if datasearch == row[0]:
        print("Coach ID found!")
        print(row)
        adminuser()

```

In the figure shown above, input is required from the user on the basis of what they want to search. Then, coachfile variable is being used to open the coachdetailfile in read mode. Furthermore, line.rstrip() and lines.split() to split the records stored in the lines list. The data entered by user is then searched and compared with values inside the list. If the user data matches data in list and in that exact index, then the whole line is printed.

Input Output Screenshots

Main menu start-up

```
-----Welcome to Real Champions Sports Academy-----  
1. Admin      2. Student  
Enter the corresponding number to select the user:|
```

The first screen which comes up when the program is loaded. Welcome text is displayed at the top. The user will be asked to select their type of user.

User select main menu (no value entered by user)

```
===== RESTART: C:\Users\s4spa\OneDrive\Desktop\latestassignment.py =====  
-----Welcome to Real Champions Sports Academy-----  
1. Admin      2. Student  
Enter the corresponding number to select the user:  
oops! not a valid number! Enter your option again.  
Enter the corresponding number to select the user:|
```

In this case, where no value is entered by user, the program displays an error message and asks user to choose again until a response is provided.

User select main menu (Value entered not in range)

```
-----Welcome to Real Champions Sports Academy-----  
1. Admin      2. Student  
Enter the corresponding number to select the user:3  
oops! not a valid number! Enter your option again.  
-----Welcome to Real Champions Sports Academy-----  
1. Admin      2. Student  
Enter the corresponding number to select the user:|
```

When a value is entered which is not in range, such as in this case, the number entered is 3. Error message is displayed, and user is prompted to select option again until correct value is entered

Admin login (wrong user name and no value entered)

```
-----Welcome to Real Champions Sports Academy-----
1. Admin      2. Student
Enter the corresponding number to select the user:1
Enter admin username:
ad
Wrong username
Please enter correct username.
Enter admin username:

No value is entered. Please enter correct username.
Enter admin username:
|
```

After entering correct option on main menu for admin user, the user is asked to enter the username. If the username is wrong, error message will be displayed saying “Wrong username” and if no value is entered error message will say “No value was entered”. In both these cases, the user will be asked to re-enter the correct username.

Admin login (Correct username but wrong password or no value entered)

```
Enter admin username:
a
Username is correct
Enter admin password:
a
Wrong password
Please enter correct password.
Enter admin password:

No value entered !! type again
Enter admin password:
|
```


After entering correct option on username for admin user, the user is asked to enter the password. If the password is wrong, error message will be displayed saying “Wrong password” and if no value is entered error message will say “No value was entered”. In both these cases, the user will be asked to re-enter the correct password.

Admin login (Correct username and correct password)

```
-----Welcome to Real Champions Sports Academy-----
1. Admin      2. Student
Enter the corresponding number to select the user:1
Enter admin username:
admin
Username is correct
Enter admin password:
admin@123
Password is correct
Login verified
-----Welcome to Admin page-----
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
```

If both the values; username and password are correct, a message is displayed which says login verified and welcomes the admin to the admin panel. Options are provided to the admin to choose.

Admin Panel (No value chosen and wrong input)

```

-----Welcome to Admin page-----
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit

Oops! That is not a valid input. Enter again.
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
6
Wrong input. Press any number
1
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|

```

When no value is entered on the admin panel, error message is displayed, and the user is asked to enter the correct value again. Similarly, when a number out of range is entered, an error message is displayed, and the user has to enter correct value again.

Add Records (Wrong input)

```

1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
1
1. Coach
2. Sport
3. Sport schedule
Enter correspondning number of which records you would like to add:4
Invalid input
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|

```

When in add records section of admin, a wrong input is entered, an error message is displayed, and the user is taken back to admin panel.

Add Records (same error for all- coach, sport and sport schedule)

```
1. Coach
2. Sport
3. Sport schedule
Enter correspondning number of which records you would like to add:1
Enter number of coaches you want to add:s
Value entered is not valid
Enter number of coaches you want to add:
Value entered is not valid
Enter number of coaches you want to add:|
```

When entering the number of coaches, the admin wants to add, if the admin accidentally clicks the enter button without entering a value, error message is shown, and the user is again asked to enter number of coaches he would like to add. Similarly, if a string is written for looping purposes, the same error text is shown, and the user has to enter the value again.

Add Records Coach (success)

```

Enter correspondng number of which records you would like to add:1
Enter number of coaches you want to add:1
Enter coach 1 details---
Enter Coach name:Test
Enter Coach ID:coach16
Checking if Coach ID already exists in database---
-----

Coach Id is unique!
Enter Coach date joined:12/12/2020
Enter Coach date terminated:13/12/2021
Enter Coach hourly rate (in Rm):240
Enter Coach phone number:1234567890
Enter Coach address:Bukit jalil
code    Coach name    Sport center name    Sport center code
sport1  Football    Royal Champions Sports Academy Bukit Jalil    RCSA BKJ
sport2  Swimming    Royal Champions Sports Academy Kuala Lumpur    RCSA KUL
sport3  Archery     Royal Champions Sports Academy Damansara    RCSA DMS
sport4  Volleyball  Royal Champions Sports Academy Bukit Jalil    RCSA BKJ
sport5  Basketball  Royal Champions Sports Academy Kuala Lumpur    RCSA KUL
sport6  Cricket     Royal Champions Sports Academy Damansara    RCSA DMS
sport7  Tennis     Royal Champions Sports Academy Bukit Jalil    RCSA BKJ
sport8  Table Tennis Royal Champions Sports Academy Kuala Lumpur    RCSA KUL
sport9  Badminton   Royal Champions Sports Academy Damansara    RCSA DMS
sport11 Gymnastics Royal Champions Sports Academy Bukit Jalil    RCSA BKJ
Enter Coach sport:Badminton
Enter code of sport that coach teaches :sport9
Enter name of sport center where coach teaches :Royal Champions Sports Academy Bukit Jalil
Enter code of sport center where coach teaches :RCSA BKJ

```

Coach record has been successfully added in the database in the code above. While selecting the coach ID, the code is able to identify if the coach ID has been used before. If the ID has been used before, the user is redirected to admin panel to select next move. If ID is unique, the registration of coach continues.

Add Records Sport (ID exists)

```

1. Coach
2. Sport
3. Sport schedule
Enter correspondng number of which records you would like to add:2
Enter number of sports you want to add:1
Enter sport 1 details---
Enter sport name:Hockey
Enter Sport ID:sport1
Checking if Sport ID already exists in database
-----
Sport ID already exists.
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|

```

In the screenshot above, while adding record of a sport, the code identified that the sport ID was used before. Therefore, the record was not added, and the user was redirected back to admin panel

Add Records Sport schedule (Value error)

```
1. Coach
2. Sport
3. Sport schedule
Enter correspondning number of which records you would like to add:3
Enter number of sports you want to add schedules for:
Value entered is not valid
Enter number of sports you want to add schedules for:s
Value entered is not valid
Enter number of sports you want to add schedules for:|
```

When inputting values like string and even nothing at all for “Enter number of sports you want to add schedules for:”, the code detects the error and asks user to input correct data.

Add Records Sport schedule (Successful)

```
1. Coach
2. Sport
3. Sport schedule
Enter correspondning number of which records you would like to add:3
Enter number of sports you want to add schedules for:8
Enter sport 1 schedule---
Enter sport name:Archery
Enter Sport ID:sport3
Checking if Sport ID already exists in database---
-----
Sport ID found!
Enter Sport schedule for: Archery
Enter schedule for U-9 boys/girls (Example - 8am-11am Friday :8am-11am Monday
Enter schedule for U-12 boys/girls (Example - 8am-11am Wednesday:8am-11am Tuesday
Enter schedule for U-15 boys/girls (Example - 8am-11am Saturday:8am -11am Wednesday
Enter schedule for U-17 boys/girls (Example - 8am-11am Monday:8am-11am Saturday
Enter sport 2 schedule---
Enter sport name:Volleyball
Enter Sport ID:sport4
Checking if Sport ID already exists in database---
-----
Sport ID found!
Enter Sport schedule for: Volleyball
```

Code will search for Sport ID first before letting admin to add records. If sport ID is in sportdetailfile, then admin can proceed with adding records of schedule for that particular sport.

Display Records (Invalid input)

```
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:4
Invalid input
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|
```

Number 4 is out of range. Therefore, an error message of invalid input pops up. This will lead the user back to admin panel.

Display Records (Successful)

```
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:1
Code name Date joined Date terminated Hourly rate: phone number: address: Sport: Sport code: Center name: Center code: Rat
ing
coach1 Sparsh 12/11/2002 12/11/2021 300 0178850243 Bukit Jalil Football sport1 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach2 Sagar 13/10/2002 13/10/2021 350 0188850243 Kuala Lumpur Swimming sport2 Royal Champions Sports Academy Kuala Lumpur RCSA KUL 0
coach3 Karan 15/01/1999 15/10/2021 400 0278850243 Bukit Jalil Archery sport3 Royal Champions Sports Academy Damansara RCSA DMS 0
coach4 Hanan 25/11/2000 26/11/2022 450 178550243 Damansara Volleyball sport4 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach5 Adeel 18/02/2005 18/02/2021 300 1785502430 Kuala Lumpur Basketball sport5 Royal Champions Sports Academy Kuala Lumpur RCSA KUL 0
coach6 Raj 17/05/2010 17/06/2030 380 0178920522 Damansara Cricket sport6 Royal Champions Sports Academy Damansara RCSA DMS 0
coach7 Saigham 17/09/2013 17/10/2023 200 0123456789 Bukit Jalil Tennis sport7 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach8 Amitabh 02/02/1995 02/03/2026 470 9560167868 Kuala Lumpur Table Tennis sport8 Royal Champions Sports Academy Kuala Lumpur RCSA KUL 0
coach9 Sonu 09/09/2009 09/10/2021 230 9570178965 Damansara Badminton sport9 Royal Champions Sports Academy Damansara RCSA DMS 0
coach10 Manan 11/11/2011 11/11/2021 310 9818077335 Bukit Jalil Gymnastics sport11 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach11 Jyoti 16/07/1994 17/08/2022 480 9717089335 Kuala Lumpur Football sport1 Royal Champions Sports Academy Kuala Lumpur RCSA KUL 0
coach12 Naqsh 10/11/1999 10/11/2023 450 9022104942 Bukit Jalil Swimming sport2 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach13 Faizan 25/10/2000 24/11/2022 410 3362228290 Damansara Volleyball sport4 Royal Champions Sports Academy Damansara RCSA DMS 0
coach14 Faissal 28/02/2002 27/03/2021 340 1121005967 Bukit Jalil Archery sport3 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
coach15 Gogi 13/02/2007 13/04/2027 430 0278850234 Bukit Jalil Cricket sport6 Royal Champions Sports Academy Bukit Jalil RCSA BKJ 0
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|
```

Records of coach are being displayed and the user then get reverted back to the admin main panel.

Display Records Sport(Successful)

```
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:2
sport1 Football Royal Champions Sports Academy Bukit Jalil RCSA BKJ
sport2 Swimming Royal Champions Sports Academy Kuala Lumpur RCSA KUL
sport3 Archery Royal Champions Sports Academy Damansara RCSA DMS
sport4 Volleyball Royal Champions Sports Academy Bukit Jalil RCSA BKJ
sport5 Basketball Royal Champions Sports Academy Kuala Lumpur RCSA KUL
sport6 Cricket Royal Champions Sports Academy Damansara RCSA DMS
sport7 Tennis Royal Champions Sports Academy Bukit Jalil RCSA BKJ
sport8 Table Tennis Royal Champions Sports Academy Kuala Lumpur RCSA KUL
sport9 Badminton Royal Champions Sports Academy Damansara RCSA DMS
sport11 Gymnastics Royal Champions Sports Academy Bukit Jalil RCSA BKJ
^ _ _ _ _
```

Records of sport are being displayed and the user then get reverted back to the admin main panel.

Display Records Sport schedule(Successful)

```
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:3
Code      Name      Gender  Age  Phone      sportcode  sport      sportcentername      sportcentercode coach  coachID hourlypay  Sche
dule
student1  Sparsh  Male    17   123456789  sport1     Football    Royal Champions Sports Academy Bukit Jalil  RSCA BKJ  Sparsh  coach5  Rm80  mond
ay 10-12pm

1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|
```

Records of Registered students showing successfully. After displaying, the user goes back to the main panel

Search Records (Error same for all-coach, sport and student)

```
-----Welcome to Admin page-----
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
3
1. Coach
2. Sport
3. Student
Press any other key to terminate

Which records do you want to search:

Value entered is not valid
Which records do you want to search:
S
Value entered is not valid
Which records do you want to search:
|
```

When value entered is not within range and no value is entered, the error message pops up and asks the user to input the values again.

Search Records Coach(Successful)

```
1. By Coach ID
2. By Coach rating
How would you like to search data:
1
Enter coach ID to search:coach1
Coach ID found!
['coach1', 'Sparsh', '12/11/2002', '12/11/2021', '300', '0178850243', 'Bukit Jalil', 'Football', 'sport1', '', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', '0']
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
```

Coach records are being displayed correctly after searching. The user automatically gets back to the admin panel.

Search Records Sport(Successful)

```
Enter Sport ID to search:sport1
Sport ID found!
code    Sport name    Sport center name    Sport center code
['sport1', 'Football', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ']
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|
```

Sport records are being displayed correctly after searching. The user automatically gets back to the admin panel.

Search Records student (Successful)

```
Which records do you want to search:
3
Enter student ID to search studentsstudent1
['student1', 'Sparsh', 'Male', '17', '123456789', 'sport1', '', 'Football', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', 'Sparsh', 'coach5', 'Rm80', '', 'monday 10-12pm']
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
|
```

Student records are being displayed correctly after searching. The user automatically gets back to the admin panel.

Sort Records (error)

```
1. Coaches in ascending order by name
2. Coaches by hourly pay rate in ascending order
3. Coaches by overall performace in ascending order
Enter any other number to exit
Enter how you would like to sort:
```

Oops! That is not a valid input. Enter again.

```
1. Coaches in ascending order by name
2. Coaches by hourly pay rate in ascending order
3. Coaches by overall performace in ascending order
Enter any other number to exit
Enter how you would like to sort:
```

S

Oops! That is not a valid input. Enter again.

```
1. Coaches in ascending order by name
2. Coaches by hourly pay rate in ascending order
3. Coaches by overall performace in ascending order
Enter any other number to exit
Enter how you would like to sort:
```

When value entered is not within range and no value is entered, the error message pops up and asks the user to input the values again.

Sort Records by coach name (successful) same for others

coach5	Adeel	18/02/2005	18/02/2021	300	1785502430	Kuala Lumpur	Basketball	sport5	Royal Champions Sports Academy Kuala Lumpur	RCSA KUL	0
coach5	Amitabh	02/02/1995	02/02/2026	470	9560167869	Kuala Lumpur	Table Tennis	sport8	Royal Champions Sports Academy Kuala Lumpur	RCSA KUL	0
coach14	Faisal	28/02/2002	27/03/2021	340	1121005967	Bukit Jalil	Archery	sport3	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach13	Faizan	25/10/2000	24/11/2022	410	3362228290	Damansara	Volleyball	sport4	Royal Champions Sports Academy Damansara	RCSA DMS	0
coach15	Gigi	13/02/2007	13/04/2027	430	0278850234	Bukit Jalil	Cricket	sport6	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach4	Hanan	23/11/2000	26/11/2022	450	178550243	Damansara	Volleyball	sport4	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach11	Jyoti	16/07/1994	17/08/2022	480	9717088335	Kuala Lumpur	Football	sport1	Royal Champions Sports Academy Kuala Lumpur	RCSA KUL	0
coach3	Karan	15/01/1999	15/10/2021	400	0278850243	Bukit Jalil	Archery	sport3	Royal Champions Sports Academy Damansara	RCSA DMS	0
coach10	Manan	11/11/2011	11/11/2021	310	9818077335	Bukit Jalil	Gymnastics	sport11	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach12	Naqsh	10/11/1999	10/11/2023	490	9022104942	Bukit Jalil	Swimming	sport2	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach6	Raj	17/05/2010	17/06/2030	380	0178820522	Damansara	Cricket	sport6	Royal Champions Sports Academy Damansara	RCSA DMS	0
coach2	Sagar	13/10/2002	13/10/2021	350	0188850243	Kuala Lumpur	Swimming	sport2	Royal Champions Sports Academy Kuala Lumpur	RCSA KUL	0
coach5	Sonu	09/09/2009	09/10/2021	230	9570178965	Damansara	Badminton	sport9	Royal Champions Sports Academy Damansara	RCSA DMS	0
coach1	Sparsh	12/11/2002	12/11/2021	300	0178850243	Bukit Jalil	Football	sport1	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0
coach7	Zaigham	17/09/2013	17/10/2023	200	0123456789	Bukit Jalil	Tennis	sport7	Royal Champions Sports Academy Bukit Jalil	RCSA BKJ	0

Coach being arranged in alphabetical order correctly by the code

Modify Records (error)

```
-----Welcome to Admin page-----
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
5
-----Welcome to Modify records-----
1.Coach
2.Sport
Sport Schedule
Which records do you want to modify:

Value entered is not valid
Which records do you want to modify:
S
Value entered is not valid
Which records do you want to modify:
|
```

When value entered is not within range and no value is entered, the error message pops up and asks the user to input the values again.

Modify Records coach (successful)

```
-----Welcome to Modify records-----
1.Coach
2.Sport
Sport Schedule
Which records do you want to modify:
1
Enter Coach ID to search:coach20
Coach ID found!
code    Coach name    Sport center name    Sport center code
['coach20', 'Spash', '12/11/2002', '12/11/2021', '300', '0178850243', 'Bukit Jalil', 'Football', 'sport1', '', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', '0']
1. Code
2.Sport name
3. Sport center name
4. Sport center code
Enter your choice to modify:1
Enter new coach code:coach1
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
2
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:1
Code    name    Date joined Date terminated Hourly rate: phone number: address:    Sport:    Sport code:    Center name:    Center code:    Rat
ing
coach1  Spash  12/11/2002    12/11/2021    300    0178850243    Bukit Jalil    Football    sport1    Royal Champions Sports Academy Bukit Jalil    RCSA BKJ    0
```

After all the necessary information is entered, the modify function seems to work. As in the sample above, coach Id was changed from coach20 to coach1

Modify Records sport (successful)

```
-----Welcome to Modify records-----
1.Coach
2.Sport
Sport Schedule
Which records do you want to modify:
2
Enter Sport ID to search:sport1
Sport ID found!
code    Sport name    Sport center name    Sport center code
['sport1', 'Football', 'Royal Champions Sports Academy Bukit Jalil', ' RCSA BKJ']
1. Code
2.Sport name
3. Sport center name
4. Sport center code
Enter your choice to modify:1
Enter new sport code:sport15
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
2
1. Coach
2. Sport
3. Registered students
Enter corresponding number of which records you would like to display:2
sport15 Football    Royal Champions Sports Academy Bukit Jalil    RCSA BKJ
```

After all the necessary information is entered, the modify function seems to work. As in the sample above, sport Id was changed from sport1 to sport15

Modify Records sport schedule (successful)

```
Enter Sport ID to search:sport1
Sport ID found!
code   Sport name      Sport schedule 1      Sport schedule 2      Sport schedule 3      Sport schedule 4
['sport1', 'Football', '8-10am Monday', '8-10am Tuesday', '8-10am Wednesday', '8-10am Thursday']
1. Code
2. Sport name
3. Sport schedule 1
4. Sport schedule 2
5. Sport schedule 3
6. Sport schedule 4
Enter your choice to modify:3
Enter new sport schedule:9am-11am Monday
1. Add records
2. Display records
3. Search records
4. Sort records
5. Modify records
Press 0 to Exit
```

After all the necessary information is entered, the modify function seems to work. As in the sample above, sport schedule was changed from 8-10am Monday to 9am-11am Monday.

Student Panel (No value chosen and wrong input)

```
-----Welcome to Real Champions Sports Academy-----
1. Admin      2. Student
Enter the corresponding number to select the user:2
1. View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:
oops! not a valid number! Enter your option again.
Enter your option:s
oops! not a valid number! Enter your option again.
Enter your option:|
```

When the student user does not enter an integer value, no value at all and not within the range. The program shows an error message and requests user to enter valid option.

All Student Panel (Display sport)

```
1.View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:1
sport15 Football      Royal Champions Sports Academy Bukit Jalil      RCSA BKJ
sport2  Swimming      Royal Champions Sports Academy Kuala Lumpur      RCSA KUL
sport3  Archery        Royal Champions Sports Academy Damansara          RCSA DMS
sport4  Volleyball     Royal Champions Sports Academy Bukit Jalil        RCSA BKJ
sport5  Basketball     Royal Champions Sports Academy Kuala Lumpur        RCSA KUL
sport6  Cricket        Royal Champions Sports Academy Damansara          RCSA DMS
sport7  Tennis         Royal Champions Sports Academy Bukit Jalil        RCSA BKJ
sport8  Table Tennis   Royal Champions Sports Academy Kuala Lumpur        RCSA KUL
sport9  Badminton      Royal Champions Sports Academy Damansara          RCSA DMS
sport11 Gymnastics    Royal Champions Sports Academy Bukit Jalil        RCSA BKJ
```

All students can successfully access the records of all the sports and then go back to the main panel

All Student Panel (Display sport schedule)

```
-----Welcome to Real Champions Sports Academy-----
1. Admin      2. Student
Enter the corresponding number to select the user:2
1.View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:2
-----Sport Schedule -----
sport1  Football      9am-11am Monday      8-10am Tuesday      8-10am Wednesday      8-10am Thursday
sport2  Swimming      7-9am Monday         7 -9am Tuesday       7-9am Wednesday       7am -9am Friday
sport3  Archery        8am-11am Monday      8am-11am Tuesday     8am -11am Wednesday   8am-11am Saturday
sport4  Volleyball     1pm-3pm Monday       1pm-3pm Tuesday      1pm-3pm Thursday       1pm-3pm Friday
sport5  Basketball     5pm-6pm Monday       5pm-6pm Thursday     5pm-6pm Saturday      5pm-6pm Sunday
sport6  Cricket        6pm-7pm Monday       6pm-7pm Tuesday      6pm-7pm Wednesday     6pm-7pm Sunday
sport7  Tennis         4-7pm Tuesday        4-7pm Wednesday     4-7pm Thursday        4-7pm Friday
sport8  Table Tennis   5am-6am Monday       5am-6am Tuesday      5am-6am Friday         5am-6am Saturday
sport9  Badminton      7am-10am Wednesday   7am-10am Thursday    7am-10am Friday        7am-10am Saturday
sport11 Gymnastics    9pm-10pm Tuesday     9pm-10pm Wednesday   9pm-10pm Friday        9pm-10pm Sunday

1.View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:|
```

All students can successfully access the records of all the sport schedules and then go back to the main panel.

Student Register (Successful)

```
1.View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:3
Enter your username:Sprzz
Enter your password:Sagar
Enter your ID (example - student1):student2
Checking if student ID already exists in database---
-----

Student ID was unique!
Enter name:Sparsh
Enter Male or Female:Male
Enter age:18
Enter phone number:0178850243

code   Sport name      Sport center name      Sport center code
sport15 Football      Royal Champions Sports Academy Bukit Jalil      RCSA BKJ
sport2  Swimming        Royal Champions Sports Academy Kuala Lumpur      RCSA KUL
sport3  Archery         Royal Champions Sports Academy Damansara      RCSA DMS
sport4  Volleyball      Royal Champions Sports Academy Bukit Jalil      RCSA BKJ
sport5  Basketball     Royal Champions Sports Academy Kuala Lumpur      RCSA KUL
sport6  Cricket        Royal Champions Sports Academy Damansara      RCSA DMS
sport7  Tennis         Royal Champions Sports Academy Bukit Jalil      RCSA BKJ
sport8  Table Tennis    Royal Champions Sports Academy Kuala Lumpur      RCSA KUL
sport9  Badminton      Royal Champions Sports Academy Damansara      RCSA DMS
sport11 Gymnastics    Royal Champions Sports Academy Bukit Jalil      RCSA BKJ

Enter the Sport code:sport2
Enter corresponding Sport name:Swimming
Enter Sport center name:Royal Champions Sports Academy Kuala Lumpur
Enter Sport center code:RCSA KUL
Coach's code   Coach's name   Hourly rate
coach2         Sagar         350
coach12        Naqsh         490
Enter coach name:coach2
Enter coach ID:coach2
Enter coach fee:350
The Sport schedule is:
['sport2', 'Swimming', '7-9am Monday', '', '7-9am Tuesday', '', '7-9am Wednesday', '', '7am-9am Friday']
Enter your sport schedule:7-9am Monday
Successfully registered!
-----Redirecting to Login page-----
```

First when a student clicks register, he/she is redirected to new student register. First, they will need to set their username and password which will then be stored later in a separate file for login purposes. Next, student is asked general info and then asked to select sports, coach and the preferred schedule. Finally, the student is registered and then being redirected to login page.

Student Login (Error)

```
-----Welcome to Real Champions Sports Academy-----
1. Admin      2. Student
Enter the corresponding number to select the user:2
1.View details of Sport
2. View details of Sport Schedule
3. Register (only for new students)
4. Login ( for existing students )
5. Press 5 to Exit
Enter your option:4
Enter student username:Sparsh
Enter student password:Sagar
Wrong username or password
Enter student username:
Enter student password:
Wrong username or password
Enter student username:
```

When the registered student either enters a wrong username or a wrong password. The access will be denied showing an error message. Similarly, if no input is provided, the same error message will be depicted.

Student Login (success)

```
Enter student username:Sparsh
Enter student password:Sagar
Wrong username or password
Enter student username:Sprzz
Enter student password:Sagar
Login successful
-----Welcome to Student page-----
-----Welcome to Registered Student Page-----
1. Display records |
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
```

Login is successful only when the password is associated with the username and not just present in the file with other usernames and passwords.

Registered student panel (error)

```
-----Welcome to Student page-----
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit

  Oops! That is not a valid input. Enter again.
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
S
  Oops! That is not a valid input. Enter again.
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
|
```

When the student user does not enter an integer value, no value at all and not within the range. The program shows an error message and requests user to enter valid option.

Registered student panel Display self-record (success)

```
-----Welcome to Student page-----
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
1
1. Display record of Coach
2. Display self-record
3. Display registered schedule2
Enter your student ID to display your records:student1
['student1', 'Sparsh', 'Male', '17', '123456789', 'sport1', '', 'Football', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', 'Sparsh', 'coach5', 'Rm80', '', 'Monday 10-12pm']
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
|
```

When a student enters their sport ID, they are able to see their whole record

Registered student panel Display coach record (success)

```
-----Welcome to Student page-----
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
1
1. Display record of Coach
2. Display self-record
3. Display registered schedule1
Enter your coach's ID to display records:coach1
['coach1', 'Sparsh', '12/11/2002', '12/11/2021', '300', '0178850243', 'Bukit Jalil', 'Football', 'sport1', '', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', '0']
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
|
```

When a student enters their coach's ID, they are able to see their whole record.

Registered student panel modify self-record (success) (goes same for coach feedback)

```
-----welcome to student page-----
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
2
Enter your student ID :student1
Student ID found!
['student1', 'Sparsh', 'Male', '17', '123456789', 'sport1', '', 'Football', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', 'Sparsh', 'coach5', 'Rm80', '', 'monday 10-12pm']
1. Code
2. Name
3. Gender
4. Age
5. Phone number
6. Sport
7. Sport Center name
8. Sport center code
9. Sport schedule
Enter your choice to modify:4
Enter new age:18
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
1
1. Display record of Coach
2. Display self-record
3. Display registered schedule2
Enter your student ID to display your records:student1
['student1', 'Sparsh', 'Male', '18', '123456789', 'sport1', '', 'Football', 'Royal Champions Sports Academy Bukit Jalil', 'RCSA BKJ', 'Sparsh', 'coach5', 'Rm80', '', 'monday 10-12pm']
-----Welcome to Registered Student Page-----
1. Display records
2. Modify your record
3. Provide feedback to coach
Press any other key to Exit
|
```

The student is able to modify his or her record and see the change in the file by displaying it later.

Additional features

1. **Split function** – It is mainly used in splitting strings from one another.
In my source code, this split is used to split 2 values from one another and store into a list so that they can be accessible using indexes.
2. **Strip function** – Strip is used to remove certain characters from a variable or list.
In my source code, strip and split are usually used together when reading from a file and storing into a list. When strings from a file are stored into a list, characters like \n and \t are also printed. So, to remove them, I used strip function.
3. **Readlines and Writelines** – Readlines is used to read a file to a list whereas writelines is used to write data of a list into a file. I used them in my code to reduce my work of storing list into a file and reading file to a list. They are being utilized all over my code for searching function.
4. Finally, I stored all new usernames and passwords of students in a different file (Other than the one their records are in). This was done to provide a secure login system as while using simple search methods, the usernames and passwords will be scanned all over the file and will let the user login even if the username and password are not related. This is because, search will only search if value is present in file not if it is connected to one another.

```
#login for registered student
def loginoldstudent():
    while True:
        success = False
        file = open("studentuserpass.txt", "r")
        studentname = input("Enter student username:")
        studentpassword = input("Enter student password:")
        for i in file:
            a,b = i.split(",")
            b = b.strip()
            if (a==studentname and b==studentpassword):
                success = True
                break
        file.close()
        if (success):
            print("Login successful")
            print("-----Welcome to Student page-----")
            oldstudent_user()
            break
        else:
            print("Wrong username or password")
            continue
```

This will make sure username and password are related

Conclusion

1. I conclude that the admin will be able to login and utilize all the functionalities mentioned in assumptions section properly without many errors.
2. I conclude that this system will help Royal Champions Sports Academy while storing and accessing records.
3. I conclude that students will be able to utilize the functionalities to the fullest and without any unexpected errors.

References –

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