MBA 614 FINAL PROJECT

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# Executive Summary

The purpose of this project is to automate and facilitate the counseling of United States Army soldiers who do not pass the Army Physical Fitness Test (APFT). The project is designed to be used on a battery or company level. The project consists of 5 functions and three subroutine procedures (subs). The US Army must insure that its members are physically capable in case they are sent into a combat situation. The fitness level of each soldier is tested regularly through the administration of an APFT. When soldiers cannot meet the minimum requirement they should be counseled promptly in order to correct the deficiencies. This creates a problem because leadership rarely has the time to provide the necessary counseling. It has become commonplace for soldiers in the military to fail the APFT and receive no counseling at all. This application is designed to help leadership insure that APFT failures are being counseled in a prompt timely manner.

This excel-based application contains a list of all the soldiers in the company. It allow the end user to enter the raw score APFT data for each soldier. Once the data is entered the application will calculate the score for each soldier and identify any soldiers who have failed to meet the army standard. The raw score is simply the number of push-ups, sit-ups, and the 2-mile run time. This number is then converted to a real score using APFT conversion charts that take into account the age and gender of the soldier. The conversion charts have been built into this model.

After the application generates scores it uses a template of DA form 4856 (developmental counseling form) in order to quickly generate counseling statements for all the soldiers who have failed to meet the minimum required standard. On the click of button the forms can be printed and given to the soldiers. The application will automatically fill in the soldiers name, rank, and organization. It will also complete the section that requires a first line leader. The form will include a personalized statement that shows the individual score of the soldier and where they did not meat the army standard. It also includes a generic plan of action to help the soldier conform to the standards.

The application can be used repeatedly for the same Company and will maintain a concise record of each APFT that is administered, including the test date and scores for each soldier.

# Project Beginnings

This is a real project that can be used in any company or battery in the US Army. I plan to implement this application immediately in my Battery. However since I didn’t want to post personal information with of all the soldiers in my Battery I created a list of names, using the names of professional bowlers. I then assigned each name a birth date and social security number. I choose to include the birthday of the soldier rather than the age so the form won’t need to be updated each year as the Soldiers age. I had to include a section and platoon column as well as a column that shows leadership position in order have the application report the correct first line leader on the counseling form. In addition I pulled all of the APFT conversion charts into excel.

# First Line Leader Function

The first code I wrote was a function that would return the first line leader of each individual soldier. This was more complicated than one might expect because the program needed to know the leadership position of each individual so that it could find the appropriate first line leader. For the section members that are not currently in a leadership position and for the team leaders the Chief of Section (COS) is the appropriate counselor; however, for the COS the Platoon Sergeant would be the counselor. Finally, the first Sergeant would be the appropriate counselor if any of the Platoon Sergeants were to fail the test. What if the First Sergeant failed his APFT? The Command Sergeant Major would be the one to take care of his counseling and that would exceed the Battery level so the program is not designed to accommodate the rare occasion that a first sergeant fails. The following is the code that was created to select the first line leader. As you can see The code uses a series of IF Statements to determine if the individual is a First Sergeant, platoon leader, or Section Chief. The code then looks up and returns the appropriate leader in each case. The function was created so that it will work anywhere in the workbook but there is a specific column on the soldier data sheet where the function is used to pull the first line leader of each soldier.

Function FirstLineLeader(Lastname As String, Firstname As String) As String

Dim Section As String

Dim Platoon As Integer

Dim Y As Integer

Dim z As Integer

Dim X As Integer

Set D = Sheets("Soldier Data")

X = 10

Y = 10

z = 10

Do Until UCase(Lastname) = UCase(D.Cells(X, 1)) And UCase(Firstname) = UCase(D.Cells(X, 2)) Or X = 500

X = X + 1

Loop

If D.Cells(X, 7) = "PS" Then

Do Until D.Cells(z, 7) = "FSG"

z = z + 1

Loop

FirstLineLeader = D.Cells(z, 6) & " " & D.Cells(z, 1) & " " & D.Cells(z, 2)

ElseIf D.Cells(X, 7) = "FSG" Then

FirstLineLeader = "N/A"

Else

If D.Cells(X, 10) = "" Or D.Cells(X, 10) = "TL" Then

Section = D.Cells(X, 7)

Do Until D.Cells(Y, 10) = "COS" And D.Cells(Y, 7) = Section

Y = Y + 1

Loop

FirstLineLeader = D.Cells(Y, 6) & " " & D.Cells(Y, 1) & " " & D.Cells(Y, 2)

Else

Platoon = D.Cells(X, 8)

z = 10

Do Until D.Cells(z, 7) = "PS" And D.Cells(z, 8) = Platoon

z = z + 1

Loop

FirstLineLeader = D.Cells(z, 6) & " " & D.Cells(z, 1) & " " & D.Cells(z, 2)

End If

End If

End Function

# Converting Scores

Additional functions were created in order to convert raw scores to into final scores. These functions were a little more complex due to the complexity of the Army APFT scoring system. There are 8 different age categories in the scoring system. There is a separate chart that is used to calculate the Push-up score, the sit-up score, and the 2-mile run score. You can see the charts on sheets 2,3, and 4 of the excel workbook I created. Note that the sit-up score chart uses the same standard for both male and female soldiers, while the push and run standards differ depending on gender. With the push-up and run functions I began by selecting the correct gender and then I used a series of embedded IF statements to select the appropriate age and the appropriate score. I would have the program look at the age and make sure that if the individual exceeded the maximum amount of points it would just assign the score of 100 rather than looking to the chart. This is because the chart is blank for scores above 100. 100 points is the maximum score and individual can score in any given category. Here is a sample of how the code looks. This is just a portion of the push-up function but it will allow you to see the general Idea.

If RawPushUp > 77 Then

Pushup = 100

Else

Do Until RawPushUp = (PU.Cells(r, 2)) Or r = 500

r = r + 1

Loop

End If

If gender = "M" Then

If Age >= 62 Then

If RawPushUp > 50 Then

Pushup = 100

Else

Pushup = PU.Cells(r, 21)

End If

ElseIf Age >= 57 Then

If RawPushUp > 53 Then

Pushup = 100

Else

Pushup = PU.Cells(r, 19)

End If

ElseIf Age >= 52 Then

If RawPushUp > 56 Then

Pushup = 100

Else

Pushup = PU.Cells(r, 17)

End If

I encountered problems when I tried to use a similar code to format the run scores. I tried several different things and I was unable to make the code function properly. Finally I discovered that the score chart had listed the run times in hours and minutes rather than minutes and seconds. After I adjusted the format of the times the function worked properly. The Sit-up function works generally same as the push-up and run functions; however, gender is not a factor in the score so the code is less complex.

# Pass Fail Function

I also created a function that simply checks each individual soldier and determines if they met the required standard to pass the APFT. This function returns a code that shows which category, if any, the soldier failed. If the soldier passed all three events the function will return a 0.

# Add New Test Sub Procedure

I wanted to make it easy for the user of the form to add additional records for each additional APFT test. Therefore, I created a procedure that will create new columns for each new test. The user then just needs to enter the raw scores and fill in the appropriate functions in the real score columns. This will then generate the scores for each individual. I formatted the new columns so that the headers will appear in a different color in order to help distinguish the test from the last test. This sub is linked to the button “NEW APFT” in the soldier data worksheet.

# Create Counseling forms Sub Procedure

After the raw data has been entered and all the functions calculated, the next step is to generate the counseling statements. First I had to create a counseling form template in Excel. This was time consuming because I had to make sure that the format matched the official US Army form. After the form was created I created a function that would fill in the form for each individual who failed the most recent test reported in the soldier data worksheet. The code looks like this:

Sub Counsel()

Set D = Sheets("Soldier Data")

Dim Y As Integer

Dim X As Integer

Y = 0

X = 11

D.Activate

Do

Y = Y + 1

D.Cells(11, Y).Select

Loop Until Selection.Value = ""

Do

X = X + 1

If D.Cells(X, Y - 1).Value > 0 Then

Sheets("Counseling Template").Select

Sheets("Counseling Template").Copy After:=Sheets(5)

Sheets(6).Name = D.Cells(X, 1) & " " & D.Cells(X, 2)

Sheets(6).Activate

Cells(10, 1).Value = D.Cells(X, 1) & ", " & D.Cells(X, 2)

Cells(10, 5).Value = D.Cells(X, 6)

Cells(10, 7).Value = D.Cells(X, 9)

Cells(10, 9).Value = D.Cells(2, 2)

Cells(12, 1).Value = D.Cells(1, 2)

Cells(12, 7).Value = D.Cells(X, 11)

Cells(16, 1).Value = "APFT Failure – IAW AR 350-41 Chapter 9"

Cells(29, 1).Value = D.Cells(X, 6) & " " & D.Cells(X, 1) & ", on " & D.Cells(10, Y - 7) \_

& " you failed to pass the APFT administered by" & " " & D.Cells(1, 2) & ". Your failure to meet minimum" \_

& " Army standards is an overall indication of your less than acceptable fitness level/standards." \_

& " Since this was an APFT, you may be flagged or considered for a bar to reenlistment. This means" \_

& " you are not fully eligible for favorable actions like awards or promotions. However, this status" \_

& " is not permanent and will be lifted if you remain dedicated and determined to improve your" \_

& " overall level of fitness. You will take a diagnostic APFT every 30 days to measure your progress."

Cells(37, 1).Value = "On " & D.Cells(10, Y - 7) & " 10 Nov 2008 you were administered an APFT you achieved" \_

& "the following scores:"

Cells(40, 1).Value = "Push-ups Raw/Score" & " " & D.Cells(X, Y - 8) & "/" & D.Cells(X, Y - 5)

Cells(40, 4).Value = "Sit-ups Raw/Score" & " " & D.Cells(X, Y - 7) & "/" & D.Cells(X, Y - 4)

Cells(40, 7).Value = "2-Mile Run Raw/Score"

Cells(40, 9).Value = D.Cells(X, Y - 6)

Cells(40, 10).Value = "/" & D.Cells(X, Y - 3)

Cells(42, 1).Value = "You must achieve a score of at least 60 in each category in order to meet the" \_

& " mimimum army requirements."

Cells(4, 12).Value = "You will participate in the Battery's special fitness program (conducted" \_

& " concurrently with unit physical fitness training). Your First Line Leader, along with the unit" \_

& " Master Fitness Trainer (MFT) will design a program tailored to address your specific fitness" \_

& " needs. The program regimen will help you improve your areas of weakness and overall fitness" \_

& " level. It is recommended that you routinely spend some of your off-duty time to work on your" \_

& " physical conditioning. Achieving Army minimum standards is not difficult, the most important" \_

& " element to being successful is maintaining a positive, can-do, attitude and having the desire" \_

& " to succeed. This counseling is corrective not punitive in nature and will assist both you and" \_

& " the command to ensure you are capable of passing the APFT."

End If

Loop Until D.Cells(X, 1) = ""

End Sub

This Sub is linked to the button “Create Counseling Forms” on the soldier data worksheet. After the counseling forms have been created I wanted to create a simple way for them to be printed off and then deleted so that they don’t clutter up the spread sheet. Therefore I created a sub procedure that will print off all of the individual counseling forms. This procedure uses an input box to obtain the number of copies that will be printed of each form. I did this because the user may want up to 3 copies of each form in order to obtain a record in file as well as give on to the soldier and the first line leader. I created a similar procedure that will delete the counseling forms once that have been printed.

# Using the Form

For demonstration purposes I have filled in the first APFT columns with fictitious scores. Therefore to test the form, first run the sub that creates counseling forms. Then I suggest that you use the print counseling and delete counseling subs and then you can run the “New APFT” sub. If a new test is added first you will have to enter raw scores for each individual and then use the built in functions to calculate real scores as well as the pass/fail code. Then you can continue to test the other sub procedures.