	Contestant Number: _	
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ı ime:	
Rank:	

C++ PROGRAMMING (335)

NATIONAL – 2019

TOTAL POINTS	(380 points)
Job 1: Golden Oaks	(380 points)

Failure to adhere to any of the following rules will result in disqualification:

Production Portion:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.
- 3. Electronic devices will be monitored according to ACT standards.

No more than ten (10) minutes orientation No more than (90) minutes testing time No more than ten (10) minutes wrap-up

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Workplace Skills Assessment Program competition.

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Your application will be graded on the following criteria:

Solution and Project	10
Project was found on the flash drive	10 points
Project is named following the naming convention	10 points
Program Execution	
Program runs	20 points
If program does not execute, then remaining items in this section are not sco	ored.
The program gracefully handles an empty or missing input file	10 points
The program gracefully handles any data errors	20 points
The program shows a course/member list/exit menu to choose from	20 points
The program displays the complete list of members	10 points
The program displays the sorted list of member's handicaps for eac	h
of the courses from largest to smallest	30 points
The program displays the data to the user in clean even rows	10 points
The program displays the course name above the members list	5 points
The program displays a prompt for collecting user input and to retu	rn
the user back to the menu.	10 points
Source Code Review	
Contestant ID is commented at the top of the program	5 points
Code is commented at the top, for each method and as needed	15 points
Code uses structs	15 points
Code uses vectors(arrays) with structs(or classes)	40 points
A method called "Calc_Course_Handicap" is implemented	10 points
Calc_Course_Handicap code is commented to show what is being	
used to calculate the MGS.	5 points
Code uses reasonable and consistent variable/method/struct	
naming conventions	15 points
Code uses a sort algorithm to sort handicaps for each course	40 points
The program reads the data into the correct data structure(s)	
from a file called "Golf Data.txt"	40 points
The program gracefully handles remaining error checking	20 points
Code has a minimum of one pass by reference usage in a method	10 points
The program includes code to prompt the use to continue when	
they are ready.	10 points
	Total /380 points

Golden Oaks

The local country club wants you to build them a golf handicap program that members can use to find other members to play golf rounds with – for all six of their courses. Golden Oaks Supplied:

- 1. Data file called "Golf Data.txt" which has all the related program data.
- 2. Data file format:
 - a. Course Name, Rating, and Slope six (6) times.
 - b. Member's
 - i. Name
 - ii. Club ID#
 - iii. # of nine (9) hole rounds followed by that many scores for that course
 - iv. # of eighteen (18) hole rounds followed by that many scores for that course
 - These two steps are repeated six(6) times total for the six(6) courses
 - c. Number of rounds will always have values from zero (0) to twenty (20) scores.
 - d. A round's score will always be less than two hundred (200).
- 3. To calculate a player's course handicap:
 - a. Calculate a Modified Gross Score(MGS) by one of these ways:
 - i. Total 5 to 20 rounds of eighteen (18) holes.
 - ii. Total 10 to 20 rounds of nine (9) holes.
 - iii. Total of nine(9) holes < 10 and eighteen(18) holes < 10 take all the nine (9) hole rounds and double the scores, then add all the 18 hole scores.
 - b. Take an average to find the

Modifide Gross Score = Sum of Rounds Number of Rounds

MGS

Fig#1

- c. Take the MGS and subtract the course rating.
- d. Take that value and multiply it by 113.
- e. Divide that value by course's slope rating. The answer is the player's Handicap Index (HI).

Handicap Index =

(MGS - Course Rating) X 113 Slope Rating

Fig#2

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- f. Take the HI and multiply it by 0.96
- g. Take the answer and multiply that by the slope rating.
- h. Then divide by 113 rounding to the nearest whole number.

Course Handicap =

HI X 0.96 X Slope Rating

113

Round to the nearest whole number $_{\mathrm{Fig}\#3}$

- 4. Provide a menu so the user can pick from the course, member list or to exit the program.
- 5. Display a sorted list of members for any course the user chooses largest to smallest. (Image 3)

Developer inclusions:

- 1. Use structs or classes in your code.
- 2. Vectors (arrays)
- 3. Method call Calc_Course_Handicap
- 4. Sort Algorithm
- 5. Clear the display between screen changes.
- 6. Comments for methods and important code segments.
- 7. ID number as a comment at the top of the code.
- 8. Logical names for constants, variables and other methods
- 9. Use Pass by Reference in at least one method.
- 10. Code to wait for the user to continue when ready.
- 11. Displayed data is in clean even rows for ease of reading by user.

F:\Golden Oak exe\Golden Oaks.exe

Golden Oaks Membership Handicap List

1:Red Sands
2:Sea Side
3:Twin Lakes
4:City Center
5:Five Hills
6:Cedar Creek
?:Member List
8:Exit

Please pick the course number to display or exit and press enter.

Image#1

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```
Golden Oak exe\Golden Oaks.exe

Golden Oaks Membership List

1. Jonny deAlba Member #:1406
2. Chris Long Member #:1907
3. Garrett Long Member #:2108
4. Michael Rollman Member #:2105
5. Tyler Millsap Member #:1101
6. Jordan Higgins Member #:2108
8. Eric Colt Member #:2208
8. Eric Colt Member #:1559
9. James Jackson Member #:1212
10. Luke Tyler Member #:1624
11. Robert Murphy Member #:1942
12. Jon Morgan Member #:1515
13. Wesley Page Member #:1515
14. Joe Moore Member #:1535
15. Brian Roman Member #:1399

Please press ENTER to return to options menu.
```

Image#2

```
Course:Twin Lakes

1. Garrett Long Handicap:41
2. Robert Murphy Handicap:38
3. James Lott Handicap:33
4. Eric Colt Handicap:33
5. Michael Rollman Handicap:30
6. Luke Tyler Handicap:30
7. Joe Moore Handicap:30
8. Jon Morgan Handicap:29
9. Chris Long Handicap:28
10. Wesley Page Handicap:27
11. James Jackson Handicap:18
13. Tyler Millsap Handicap:18
13. Tyler Millsap Handicap:18
14. Jordan Higgins Handicap:16
15. Brian Roman Handicap:10

Please press ENTER to return to options menu.
```

Image #3