**C/C++ PLAYERS ON A TEAM LAB REPORT**

**1) Enter your name, student ID, platform (Mac or PC) and date**

Name and StudentID: Samuel Indurkar 0888068

Class: CIS054 C/C++ Programming

Platform (Mac or PC): Eclipse and gcc on MAC

Date: 6/22/2017

**OBJECTIVES:**

Use **if...else if...else** statements to compare numeric values

**PROJECT DESCRIPTION:**

Design a C or C++ program that does the following: Determine whether a sports team manager needs to add more players to make a full team or cut players from the team if there are too many.

|  |  |  |
| --- | --- | --- |
| **INPUTS** | **PROCESSING** | **OUTPUTS** |
| teamSize  playersOnTeam | Read teamSize from the keyboard Read playersOnTeam from the keyboard  If playersOnTeam < teamSize Then  Display "There are not enough players" Compute how many more players are needed  Display "# more players are needed"  Else if playersOnTeam > teamSize  Display “There are too many players"  Compute how many more players need to be cut  Display "# players need to be eliminated"  Else  Display “You have the correct number of players” | Number of players needed to be added, cut, or indicate that the number is correct |

**LAB REPORT:**

**2) Fill in the TEST VALUES & RESULTS table**Fill in the **Test Data Values** and **Expected Results** as shown on the lab assignment from Moodle.  
Fill in the **Actual Results** after you have run and tested your program

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TEST DATA VALUES** | **EXPECTED RESULT**  Computed values before the program is run | **ACTUAL RESULT**  Fill in the output displayed  by the program |
| Too High | 60 | 53 | 7 players need to be eliminated |
| Too Low | 21 | 27 | 6 more players needed |
| Just Right | 13 | 13 | You have correct number of players |

**HIPO Chart**

|  |  |  |
| --- | --- | --- |
| input | process | output |
| Players permitted, Players on the team | Compare Players permitted with Players allowed on the team |  |
|  | If PlayersOnTeam < PlayersPermitted then Display “there aren’t enough players”  Compute Additional Players  Display Additional Players are needed | “not enough players xx needed |
|  | else If PlayersOnTeam > PlayersPermitted then Display “there are too many players”  Compute extra players  Display extra players to be eliminated | “too many” need to remove some |
|  | Else  Display “you have enough players” | You have enough players |

**DISCUSSION:**

**3) Complete the DISCUSSION section. It does not need to be long, but it needs to be complete.**3a) What did you do to develop the program? ("Followed the Directions" is not a complete description)

I wrote the program which compared the playersOnTeam with the teamSize, and based upon the comparison, it printed the correct response.

If playersOnTeam < teamSize then compute and print not enough players

If playersOnTeam > teamSize then compute and print too many players.

If playersOnTeam is same as teamSize, then print correct players.

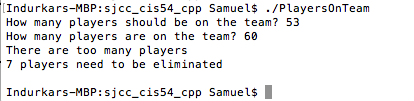
3b) What problems did you have and how did you overcome the problems?

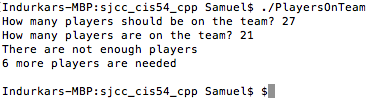
I did not have any major problem. As I type the program in the editor, if I make any typing mistake, eclipse will show a small bug symbol, so I know I have to fix it. I was missing ; at end of one line. Eclipse displayed bug. when I added ; the bug symbol went away.

Another problem: I don’t know what input values you want me to use for this exercise? Can I use any random values for the three cases?

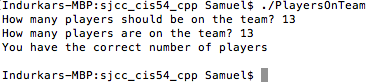
**PROGRAM OUTPUT:**

**4) Show three screen shots of the program execution.**

1. Too many players on a team
2. Not enough players on a team



1. The correct number of players on a team



For the Mac, hold down **command + shift + control** keys and press the **3** key.

Use **command+V** to paste the clipboard into the lab report.

For Windows, There are two ways you can capture a screen shot of only your program:

* Use Microsoft's **Snipping Tool** by clicking on the **Start** icon and selecting **"All Programs"** then **"Accessories".** Use the mouse to select the area of the screen you want to save then click Ctrl-C or select the menu items Edit-Copy to save the image to the clipboard.
* Capture the active window to the clipboard by holding down the **Alt** key and tapping the **PrintScreen** key. NOTE: some notebook computers require that you hold down a [**Fn**] key and **Alt** keys to activate the **PrintScreen** function. NOTE: Do not click PrintScreen without the Alt key. This would capture the entire screen which would make your program output difficult to see.

Use **Ctrl+V** to paste the clipboard into the lab report.

**PROGRAM LISTING:**

**5) Copy and paste the code that YOU typed to make the program work. Your program should include a comment block at the top that shows the name of the program, date, version and your name.**

/\*

\* PlayersOnTeam.cpp

\* version 1

\* Created on: Jun 22, 2017

\* Author: Samuel

\*/

#include <iostream>

using namespace std;

int main( int argc, char \* argv[] )

{

int teamSize;

int playersOnTeam;

int morePlayersNeeded;

int extraPlayers;

// Input data

cout << "How many players should be on the team? ";

cin >> teamSize;

cout << "How many players are on the team? ";

cin >> playersOnTeam;

// Process and output

if (playersOnTeam < teamSize)

{

cout << "There are not enough players" << endl;

morePlayersNeeded = teamSize - playersOnTeam;

cout << morePlayersNeeded << " more players are needed” <<endl << endl;

}

else if (playersOnTeam > teamSize)

{

cout << "There are too many players" << endl;

extraPlayers = playersOnTeam - teamSize;

cout << extraPlayers << " players need to be eliminated" << endl << endl;

}

else

{

cout << "You have the correct number of players" << endl << endl;

}

return 0;

}