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Homework Subject: Writing a Ball Catching Game Between Two Teams  
in C Programming Language

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The project, which this report is about, aims to create a simple ball catching game. Goal of this project is teaching students about simple C programming language functions and loops. Therefore, student will learn about simple abilities of C programming language.

The development environment consists of C as Programming Language, Windows 10 Home 64-bit and Ubuntu 15.10 64-bit as operating systems, Dev C++ 5.11 and Geany as Integrated Development Environments and TDM-GCC 5.1.0 and GCC as compilers. To compile program, I used TDM-GCC 5.1.0 compiler by using Dev C++'s Compile and Run feature on Windows. On Ubuntu, I used "gcc 150140005\_h1.c -o 150140005\_h1.out" command to compile program.

Project consists of one .c file named 150140005\_h1.c whose purpose is containing necessary code to compile and execute program. 150140005\_h1.c includes printf, scanf, rand, srand and system functions, if-else condition statements, and while and do... while loops. I didn't use for loop since in loops, more than one action is done and in those situations, a while loop is more useful than a for loop. Therefore, there are lots of while loops instead of for loops.

As variables, there are 14 variables that defined in main function. The first four variables are integers that entered by user to use in functions. N is number of players in each team. P is probability of successful pass. W is number of successful passes to win a round and gain a score. S is the final score to finish game. After these four variables player1 and player2 are used for getting random player numbers in passing section. prob is used for getting a random number to pass ball to a player that is in same team. pas1 and pas2 are used to count consequent successful passes. score1 and score2 are used to count scores of teams. Finally, team1 and team2 are used to indicate team names.

In main function there is more than one integer and more than one character. However, there are more than one line to define them at the beginning since these integers are used for different purposes. If I had written them in one single line, they would be confusing to look. To get inputs from user, Scanf is used. After getting inputs, initial scores which are zero, are defined. Then a random number from 0 to 100 is defined to a variable (prob) to decide which team will get the ball. After that, an if... else... statement is used to decide which team will start the game and team names are assigned to character variables (team1 and

team2). Then, in a while loop, round starts and continues as long as players in one team pass the ball each other  $W-1$  times which means  $W$  players get the ball as the user stated in the beginning. When  $W$  players in same team get the ball, it is printed on screen which team gets one point in an if... else... statement. This continues as long as a team doesn't have enough points to finish the game ( $S$ ). When a team reaches  $S$  points, the game is finished and winner team is printed on screen. The flowchart of program is on the last page of this report. Full resolution version of flowchart can be found with this file as a jpg file in zip file.

In conclusion, this project was a little bit hard since it was much more detailed than examples in class. Also, it was a real challenge to avoid same player getting the ball from itself, but a simple do... while loop fixed the problem.

