EECS348: Software Engineering C Programming Lab

Football Score

Given an integer representing a score in a National Football League (NFL) game, write a program to determine all possible combinations of scoring plays that can result in that score.

A scoring plays in an NFL game can be the following:

- Touchdown (TD) worth 6 points
- Field goal (FG) worth 3 points
- Safety worth 2 points
- Touchdown (TD) + 2-point conversion worth 8 points
- Touchdown (TD) + 1-point field goal worth 7 points

The program should continue to prompt the user for a score until a value less than or equal to 1 is entered, at which point the program should terminate. For each score entered, the program should display all possible combinations of scoring plays that result in that score.

Sample Input
Enter 0 or 1 to STOP
Enter the NFL score: 25

Sample Output:

Possible combinations of scoring plays if a team's score is 25:

0 TD + 2pt, 0 TD + FG, 0 TD, 1 3pt FG, 11 Safety
0 TD + 2pt, 0 TD + FG, 0 TD, 3 3pt FG, 8 Safety
0 TD + 2pt, 0 TD + FG, 0 TD, 5 3pt FG, 5 Safety
0 TD + 2pt, 0 TD + FG, 0 TD, 7 3pt FG, 2 Safety
0 TD + 2pt, 0 TD + FG, 1 TD, 1 3pt FG, 8 Safety
0 TD + 2pt, 0 TD + FG, 1 TD, 3 3pt FG, 5 Safety
0 TD + 2pt, 0 TD + FG, 1 TD, 5 3pt FG, 2 Safety
0 TD + 2pt, 0 TD + FG, 2 TD, 1 3pt FG, 5 Safety
0 TD + 2pt, 0 TD + FG, 2 TD, 3 3pt FG, 2 Safety
0 TD + 2pt, 0 TD + FG, 3 TD, 1 3pt FG, 2 Safety
0 TD + 2pt, 1 TD + FG, 0 TD, 0 3pt FG, 9 Safety
0 TD + 2pt, 1 TD + FG, 0 TD, 2 3pt FG, 6 Safety
0 TD + 2pt, 1 TD + FG, 0 TD, 4 3pt FG, 3 Safety
0 TD + 2pt, 1 TD + FG, 0 TD, 6 3pt FG, 0 Safety
0 TD + 2pt, 1 TD + FG, 1 TD, 0 3pt FG, 6 Safety

0 TD + 2pt, 1 TD + FG, 1 TD, 2 3pt FG, 3 Safety
0 TD + 2pt, 1 TD + FG, 1 TD, 4 3pt FG, 0 Safety
0 TD + 2pt, 1 TD + FG, 2 TD, 0 3pt FG, 3 Safety

0 TD + 2pt, 1 TD + FG, 2 TD, 2 3pt FG, 0 Safety
0 TD + 2pt, 1 TD + FG, 3 TD, 0 3pt FG, 0 Safety
0 TD + 2pt, 2 TD + FG, 0 TD, 1 3pt FG, 4 Safety
0 TD + 2pt, 2 TD + FG, 0 TD, 3 3pt FG, 1 Safety
0 TD + 2pt, 2 TD + FG, 1 TD, 1 3pt FG, 1 Safety
0 TD + 2pt, 3 TD + FG, 0 TD, 0 3pt FG, 2 Safety
1 TD + 2pt, 0 TD + FG, 0 TD, 1 3pt FG, 7 Safety
1 TD + 2pt, 0 TD + FG, 0 TD, 3 3pt FG, 4 Safety
1 TD + 2pt, 0 TD + FG, 0 TD, 5 3pt FG, 1 Safety
1 TD + 2pt, 0 TD + FG, 1 TD, 1 3pt FG, 4 Safety
1 TD + 2pt, 0 TD + FG, 1 TD, 3 3pt FG, 1 Safety
1 TD + 2pt, 0 TD + FG, 2 TD, 1 3pt FG, 1 Safety
1 TD + 2pt, 1 TD + FG, 0 TD, 0 3pt FG, 5 Safety
1 TD + 2pt, 1 TD + FG, 0 TD, 2 3pt FG, 2 Safety
1 TD + 2pt, 1 TD + FG, 1 TD, 0 3pt FG, 2 Safety
1 TD + 2pt, 2 TD + FG, 0 TD, 1 3pt FG, 0 Safety
2 TD + 2pt, 0 TD + FG, 0 TD, 1 3pt FG, 3 Safety
2 TD + 2pt, 0 TD + FG, 0 TD, 3 3pt FG, 0 Safety
2 TD + 2pt, 0 TD + FG, 1 TD, 1 3pt FG, 0 Safety
2 TD + 2pt, 1 TD + FG, 0 TD, 0 3pt FG, 1 Safety