Hands-On for C Programming & Data Structures

Cricket Score Board

Aim

- Develop a console based application to record live cricket score.
- Display score card after the match.

Technologies used

- C Programming
    - o Basic programming constructs
    - o Strings, Arrays and Pointers
    - o Structures
    - o File I/O
- Data Structures
    - o Sorting Algorithm

Duration

- 5 working hours

Description

- This mini project is divided into three parts i.e. Pre-Match, Live-Match and Post-Match.

Pre-Match

- Store player names of each team into text file using any editor (like notepad). One name should appear on one line. In other words, each file will have 11 lines with 11 player names. Save files with team name e.g. IND.txt.
- Pre-Match section is to configure match details, which should be done in following steps:
    1. **Load teams:** User will enter name of two teams (like IND) and then corresponding player names will be loaded from respective files. Use fgets().
    2. **Over Limit:** User should provide number of overs to be played.
    3. **Toss:** User should choose which team to bat first.

Live-Match

- At the beginning of match display player list of batting team, so that user can choose a batsman and runner. Also display player list of bowling team, so that user can choose first bowler.
- Here onwards user is expected to enter max two letter word repeatedly for different options as follows:
    1. **0, 1, 2, 3, 4, 6:** Runs scored by the batsman on current ball. Note that runs scored should be counted for current batsman account. Also consider the fact that, for odd runs scored batsman will change the end.
    2. **WK:** Wicket of taken by the bowler of current batsman. * Immediately list of batting team should be displayed (only players not batted yet), so that user can choose next batsman. If current wicket is last (i.e. 10th), then inning should be over.
    3. **WD:** Wide ball which will add a run to batting team and bowler need to throw one more ball. Immediately after this user must enter number of additional runs scored on this ball. Note that these runs will not be counted in account of current batsman.

4. **NO:** No ball which will add a run to batting team and bowler need to throw one more ball. Immediately after this user must enter number of additional runs scored on this ball. Note that these runs will not be counted in account of current batsman. *
5. **SC:** Current batting and bowling score card with details as given below.
6. **Over Change:** A bowler can throw 6 balls (excluding NO and WD) in an over. As over finishes, a list of players in bowling team should appear, so that user can choose next bowler.
7. **Inning Finish:** When overs or wickets are finished, current inning should end. Obviously batting and **bowling teams will swap and another inning will begin in similar way. The second inning will end, when** overs/wickets are finished or target is chased successfully.
8. **Live Score:** After each ball a live score should be updated in following format and then prompt for next input.

```
<Batting Team> <Current Score> / <Wickets Count>
Overs: <Overs>.<Balls>

Target: <Team> <Target Score> / <Wickets Count> (<Overs>.<Balls>)
```

Current Batsman Name	Runs (Balls) – Strike Rate
Current Runner Name	Runs (Balls) – Strike Rate

Current Bowler Name	Overs	Runs	Wickets	Economy

- * NOTES:
  1. For WK, we will not consider run-out. So new batsman will replace current batsman (not the runner end).
  2. For NO, we are not considering free hit concept.
  3. Students may choose to implement above features to enhance their mini-project. But not compulsory features for minimal implementation suggested in this assignment.

Post-Match
- When both innings are finished a menu should appear with following functionalities:
  1. **Match Result:**
     - Display winning team with winning margin.
     - E.g. IND won by 8 runs OR IND won by 5 wickets.
  2. **Team1 Batting Score Card – Asc Sort on Id:**
     - Use bubble sort
  3. **Team2 Batting Score Card – Desc Sort on Id:**
     - Use bubble sort
  4. **Team1 Bowling Score Card – Asc Sort on Id:**
     - Use selection sort
  5. **Team2 Bowling Score Card – Desc Sort on Id:**
     - Use selection sort
- Full score batting or bowling score card should be displayed in above menu operations, in similar format as shown in live score.