Golf Scoring

You have been asked to create an application to track the performance of golfers at a golf club. In the game of golf players take it in turns to hit balls from the starting position to a hole some distance away. The smaller the number of shots they take to do this, the better they are at golf. Golf is played at Golf Clubs which have a set of 18 holes, each of which is played in turn. Each golfer who plays a round of golf will return with a scorecard which contains the following:

- The name of the golfer
- A set of 18 pairs of numbers. The first number is the par for a given hole on the golf course (the number of shots it should take to get the ball into the hole). The second number is the number of shots the golfer actually took to get the ball into the hole

Task 1

Write a program that will accept the score card information from a single golfer and print out the following:

- The total number of shots the golfer took to complete the course
- The total "par" for the course – the number of shots it should have taken to get around the course
- The number of holes that had a "par" score (a par score is where the number of shots the golfer took matches the number of shots it should have taken)
- The number of holes that had a "birdie" score (a birdie score is where the number of shots the golfer took is one less than the par score for that hole – for example par 3, shots 2)
- The number of holes that had an "eagle" score (an eagle score is where the number of shots the golfer took is two less than the par score for that hole – for example par 4, shots 2)
- The number of holes that had an "albatross" score (an albatross score is where the number of shots the golfer took is three less than the par score for that hole – for example par 5, shots 2)

You have been told that acceptable values of par are in the range 3 to 5 inclusive. If a player takes more than 10 shots to complete a hole their score is invalid and the program should stop accepting scores and tell the player to do some more practice.

Task 2

When two golfers are playing against each other the winner is the golfer who took the lowest number of shots to go round the course.

Write a program that will accept the score card information for two golfers and print the following:

- The name of the player who took the smallest number of shots to complete the course. If both players took the same number of shots the program should print out "Game Tied".
- For each hole the program should print out the name of the golfer that won that hole
- The program should print out which golfer got the most par holes, the most birdie holes and the most albatross holes.

Task 3

A single golfer can play a number of games each year. It is useful if they can store the results for each successive game and compare their latest game with their previous ones.

Write a program that can store golf scores for a player. It should perform the following:

- Store a list of golf game results in a file.
- Add a new game to the list of games that are already stored.
- When a new game is added the program should display whether the new score is better or worse than the average of the scores of previous games.