JavaScript Bootcamp - Exercises

# Day 4 & 5: Objects

## Mini Project: Building Objects

1. a) Create a function to build an object which represents a cricket player. The object should have properties for - name, specialization, matches played, total number of runs scored, total wickets taken, individual runs scored in last ten matches, individual wickets taken in last ten matches.   
     
   b) Create an array of 11 cricket players to represent a team. Bonus: You may create a loop and use a random number generator to populate the numerical values
2. Add a method to the object which prints the player’s average runs in the last five matches
3. Add a method to the object which prints the player’s average wickets taken in the last five matches
4. Add a method to the object which prints the player’s average runs in the last ’n’ matches where ’n’ is provided by the user
5. Add a method to the object which prints the player’s average wickets taken in the last ’n’ matches where ’n’ is provided by the user
6. Add a method to the object which can add the score in a new match to the player’s tally. What properties should be updated and how? The method should update all the properties correctly.
7. Add a method to the object which can add the number of wickets in a new match to the player’s tally. What properties should be updated and how? The method should update all the properties correctly.
8. Add a method to the object which takes an object of the format below as the input and updates the wickets and runs as per questions 6, 7 above.   
   Example object: {runs: 32, wickets: 1}
9. Add a method to the object which prints the player’s summary details. The details needed are:
   1. Name,
   2. Specialization
   3. Matches played
   4. Total number of runs scored
   5. Total wickets taken
   6. Average runs in last ten matches
   7. Average wickets in last ten matches
   8. Overall Average runs scored
10. Write a function which will loop over the array of cricket players and print the summary details for the entire team.
11. **Bonus question:** Write two functions which sort the array of players in ascending order by their runs scored and wickets taken respectively. The functions should add a property to the object denoting their runs rank or wickets rank.

## Object Class and in-built Methods

1. Write a program which takes any object as the input and prints out the names of its “own” properties.
2. Write a program which takes any object as the input and prints out the name and type of all its “own” properties.
3. Write a program which takes any object as the input and prints out the names of all its properties and the value of each property. The program should work for objects which have numbers, strings, arrays as values. It need not work for object values.
4. Write a program which takes any object as the input and prints out the names of all its properties and the value of each property for nested objects. Hint: use recursion.
5. Write a program which takes two objects as the input o1, o2. It should print the names of common properties (that is, names are identical) and the value of the property in o1 and o2.
6. Write a program which takes two objects as the input o1, o2. It should print the property name and value for each property of each object which is unique to that object. The output will be two sets of property names - unique properties of o1, unique properties of o2
7. Write a program which takes two objects as the input o1, o2. For every property in o2 it should add the property and value in o1 if the property name doesn’t exist in o1. If the property name exists, the value in o1 should be updated to reflect the value in o2
8. Write a function that makes a “deep copy” of ([link](https://en.wikipedia.org/wiki/Object_copying#Deep_copy)) of an object. Hint: use the answers to 3, 4
9. Write a function which creates an object from the name-value pairs in a map. Hand-code the logic to create the object. Test it against the output of the built method to do this.
10. Write a function which takes an object and a property name. It should delete the property from the object. Hint - what should happen if the property name doesn’t exist in the object?