CS 325 Group Project 3 checklist

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Here we provide the checklist for the 3rd group assignment.

1 The files to be submitted are the following:

- Complete source code (implementing either method 2 or 3 along with the divide and conquer algorithm), and a file with short instructions on how to run the code, included in a single zip file.
- *Mandatory* Run the implementation on `test_cases_without_solutions.txt`, and generate an answer.txt file that contains the answers (each line has 3 whitespace-separated numbers, solution and starting/ending index). This answer.txt file **must** be included in the aforementioned zip file.
- Report as a separate pdf file (detailed description of the requirements for the report are given below)

2 Your report must include:

- A list of all group members
- Introduction (Small discussion over the problem to be solved)
- Prefix-Suffix subroutine, method 1
  - Pseudocode
  - Theoretical Runtime Analysis
- Prefix-Suffix subroutine, method 2
  - Pseudocode
  - Theoretical Runtime Analysis

- Prefix-Suffix subroutine, method 3
  - Pseudocode
  - Theoretical Runtime Analysis
- Divide and Conquer algorithm
  - Pseudocode (the subroutine/method to be called is a variable that can be set to 1, 2 or 3)
  - Recursive Relation for each of the methods (remember, in the previous bullet points you found the runtime for running the subroutines once. Now we run it from the divide and conquer routine and have to call it recursively many times)
  - Solve the above recursive relations. Be thorough, and show your work at every step.
- Programming Implementation
  - Plot of the experimental runtime vs. input size, averaged over many runs of the algorithm (as mentioned, your experimentation will only be for your method of choice {either 2 or 3} as a subroutine to the divide and conquer algorithm).
- *Optional* Bonus solution
  - You need to provide pseudocode, theoretical runtime analysis and a rigorous and detailed proof that the algorithm works.