Guidelines for Final Lab Report
Course: 01:447:303
Author: Prof. Premal Shah

Objective: The primary objective of the finals lab report is to apply R programming skills to perform either (i) comparative analyses of genomic features of any two organisms or (ii) differential gene expression and functional enrichment analyses using RNA-seq data.

- **Submission format:** The finals project report will be submitted as a single R HTML Notebook (*.nb.html) file. Any additional files or datasets needed to execute the code can be submitted as a single ZIP file.
- **Structure:** The report will contain the following sections
    a. Title: The authors will create a descriptive title for their report and list the names of all authors.
    b. Introduction: The authors will justify their choice of organisms & the nature of genomic comparisons or choice of RNA-seq data. (1—2 paragraphs)
    c. Code: Before each code chunk the authors will describe what data/ analyses/plot that particular chunk will generate.
        i. Comments: The R code will be extensively commented. Lack of clear comments will lead to loss of points.
        ii. Plots: The report will contain 3 plots each describing unique analyses.
        iii. Statistical tests: The report will contain the code for 3 statistical analyses. The authors will also justify their choice of a particular statistical test.
        Note: Statistical tests can be associated with plots but they don't have to. The statistical tests can be separate from the visualization.
        iv. Inferences: The authors will provide descriptive statements indicating what inferences were drawn based on their plot/statistical analyses.
    d. Summary: At the end of the report, the authors will summarize their findings in a summary paragraph.

Points: Total 50 points
- Title — 1 pt
- Introduction — 5 pt
- Analyses —
    a. Each plot — code (3pt) + comment (1pt) + accuracy/aesthetics (1pt) = 15 pt.
    b. Each statistical test — code (3pt) + comment (1pt) + justification (1pt) = 15 pt
    c. Each inference — 3pt = 9 pt
- Summary — 5 pt