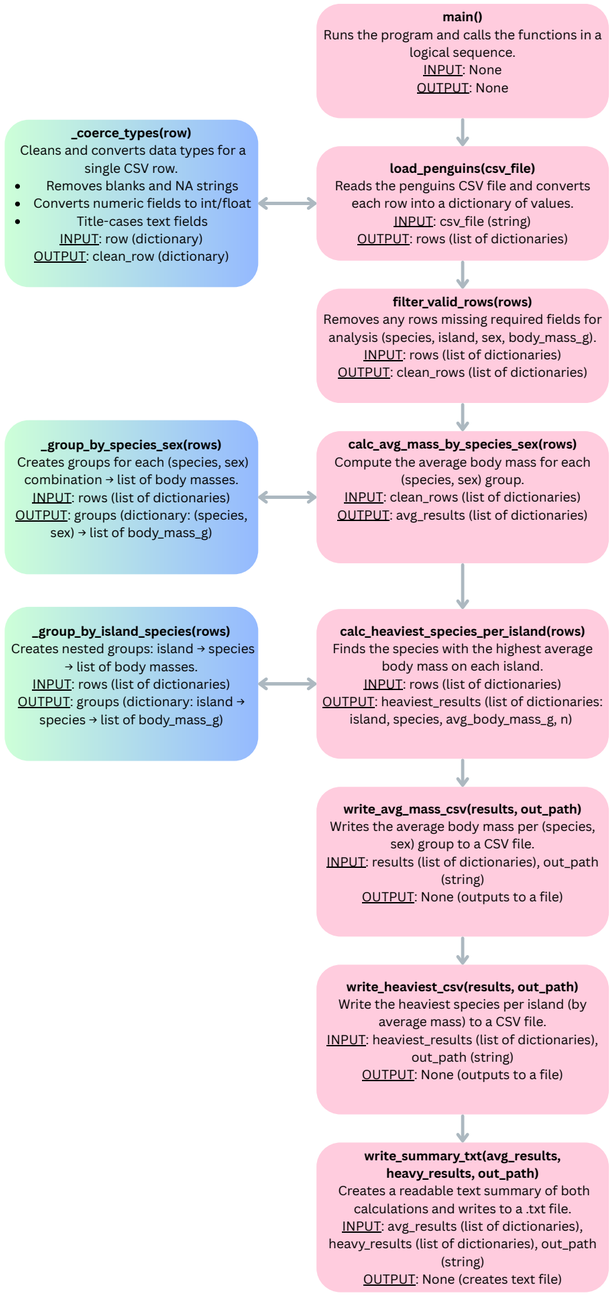
main()
Runs the program and calls the functions in a logical sequence.
INPUT: None
OUTPUT: None
_coerce_types(row)
Cleans and converts data types for a single CSV row.
Removes blanks and NA strings
Converts numeric fields to int/float
Title-cases text fields
INPUT: row (dictionary)
OUTPUT: clean_row (dictionary)
load_penguins(csv_file)
Reads the penguins CSV file and converts each row into a dictionary of values.
INPUT: csv_file (string)
OUTPUT: rows (list of dictionaries)
filter_valid_rows(rows)
Removes any rows missing required fields for analysis (species, island, sex, body_mass_g).
INPUT: rows (list of dictionaries)
OUTPUT: clean_rows (list of dictionaries)
_group_by_species_sex(rows)
Creates groups for each (species, sex) combination → list of body masses.
INPUT: rows (list of dictionaries)
OUTPUT: groups (dictionary: (species, sex) → list of body_mass_g)
calc_avg_mass_by_species_sex(rows)
Compute the average body mass for each (species, sex) group.
INPUT: clean_rows (list of dictionaries)
OUTPUT: avg_results (list of dictionaries)
_group_by_island_species(rows)
Creates nested groups: island → species → list of body masses.
INPUT: rows (list of dictionaries)
OUTPUT: groups (dictionary: island → species → list of body_mass_g)
calc_heaviest_species_per_island(rows)
Finds the species with the highest average body mass on each island.
INPUT: rows (list of dictionaries)
OUTPUT: heaviest_results (list of dictionaries: island, species, avg_body_mass_g, n)
write_avg_mass_csv(results, out_path)
Writes the average body mass per (species, sex) group to a CSV file.
INPUT: results (list of dictionaries), out_path (string)
OUTPUT: None (outputs to a file)
write_heaviest_csv(results, out_path)
Write the heaviest species per island (by average mass) to a CSV file.
INPUT: heaviest_results (list of dictionaries), out_path (string)
OUTPUT: None (outputs to a file)
write_summary_txt(avg_results, heavy_results, out_path)
Creates a readable text summary of both calculations and writes to a .txt file.
INPUT: avg_results (list of dictionaries), heavy_results (list of dictionaries), out_path (string)
OUTPUT: None (creates text file)