1. Given a list of strings, concatenate them using “reduce”.
2. Given a list of numbers, use filter to filter the values of even and odd numbers.
3. Given a list of strings, use filter to fetch the upper case and lower-case strings.
4. Given a list of strings, use filter to fetch the alphabet strings, numerical strings, and alphanumerical strings.
5. Given 2 lists, apply map function to product the elements of the list.
6. Capitalize all the names in a list. Given a list of names, use map with a lambda function to capitalize each name. Example list: ['alice', 'bob', 'charlie']
7. Convert all temperatures from Celsius to Fahrenheit. Given a list of temperatures in Celsius, use map to convert them to Fahrenheit using the formula F = C * 9/5 + 32. Example list: [0, 10, 20, 30]
8. Sum of squares of all even numbers. First, filter out all even numbers from a list using filter and then use map to find their squares and finally sum them up using reduce. Example list: [1, 2, 3, 4, 5, 6, 7, 8]
9. Filter names that start with a specific letter and count them. Use filter to find all names starting with the letter 'S', and then use reduce to count them. Example list: ['Sam', 'Ella', 'Sally', 'Alex']
10. Normalize a list of numbers using map so that they scale to a range of 0 to 1. This involves subtracting the minimum value from each number and dividing it by the range of the values. Example list: [10, 20, 30, 40, 50]
11. Find the maximum difference between consecutive numbers in a list. First, use map to create a list of differences between consecutive numbers, then use reduce to find the maximum difference. Example list: [5, 10, 1, 20, 15]
12. Calculate the sum of the unique squares of even numbers. Filter out even numbers, find their squares using map, remove duplicates, and finally, use reduce to sum them. Example list: [1, 2, 2, 3, 4, 4, 5, 6]
13. Use map to convert a list of strings to their lengths and then use reduce to find the maximum length. Example list: ["hello", "world", "python", "excellent"]
14. Calculate Age: Write a python function that takes birth date as input and returns the age of the person in years
15. Age group classification: : Write a python function that takes birth date as input and returns the age group of the person (e.g. child, teen,adult, senior citizen)
16. Day of the week: Write a python function that takes a dates as input and returns the corresponding day of the week (e.g: Monday, Tuesday,..)
17. Leap year check: Write a python function that takes year as input and returns True if it is a leap year and false otherwise