CSE 2312: Programming Assignment 2

Write assembly functions that implement the following C functions:

1. int32_t sumS32(int32_t x[], int32_t count)
// returns sum of the values in the array (x) containing count entries

2. int32_t sumS8(int8_t x[], int32_t count)
// returns sum of the values in the array (x) containing count entries

3. uint64_t sumU32_64(uint32_t x[], uint32_t count)
// returns the 64-bit sum of the values in the array (x) containing count entries

4. uint32_t countNegative(int32_t x[], uint32_t count)
// returns number of negative values in the array (x) containing count entries

5. uint32_t countNonNegative(int32_t x[], uint32_t count)
// returns number of non-negative values in the array (x) containing count entries

6. int32_t countMatches(char str[], char toMatch)
// input: char (toMatch) containing the character to match in the string (str)
// output: returns the number of occurrences of toMatch in str, or -1 if not found

7. void uint8ToBinaryString (char str[], uint8_t x)
// convert the unsigned integer (x) to a null-terminated string (str) representing a binary number

8. void int16ToBinaryString(char str[], int16_t x)
// convert the signed integer (x) to a null-terminated string (str) representing a binary number

9. bool getParity (uint32_t x)
// returns 0 if parity is even, 1 if parity is odd

10. int32_t returnMax(int32_t x[], uint32_t count)
// returns the maximum value from the integer array (x) with count entries

11. int32_t returnMin(int32_t x[], uint32_t count)
// return the minimum value from the integer array (x) with count entries

All of the functions above should be present in a single .s file. The function/procedure names must be identical to that presented above, as your code will be tested with generic C code used by the TAs.

Submit your assignment via the submission link on Canvas. The name of this file should be **lab2_lastname_loginID.s**. Example: If your name is John Doe and your login ID is jxd1234, your submission file name must be “lab2_Doe_jxd1234.s”.