

CSE 2312: Programming Assignment 1

Write assembly procedures that implement the following C functions:

1. `uint64_t add64(uint64_t x, uint64_t y) // returns x + y`
2. `uint64_t sub64(uint64_t x, uint64_t y) // returns x - y`
3. `uint16_t minU8(uint8_t x, uint8_t y) // returns the minimum of x, y`
4. `int16_t minS8(int8_t x, int8_t y) // returns the minimum of x, y`
5. `bool isLessThanU32(uint32_t x, uint32_t y) // returns 1 if x < y, 0 else`
6. `bool isLessThanS32(int32_t x, int32_t y) // returns 1 if x < y, 0 else`
7. `uint32_t shiftLeftU32 (uint32_t x, uint32_t p) // returns $x \ll p = x * 2^p$ for $p = 0 \dots 31$`
8. `uint32_t shiftU32(uint32_t x, int32_t p) // return $x * 2^p$ for $p = -31 \dots 31$`
9. `int32_t shiftS32(int32_t x, int32_t p) // return $x * 2^p$ for $p = -31 \dots 31$`
10. `bool isEqualU16(uint16_t x, uint16_t y) // returns 1 if x = y, 0 if x != y`
11. `bool isEqualS16(int16_t x, int16_t y) // returns 1 if x = y, 0 if x != y`
12. `void strcpy(char* strTo, char* strFrom) // copies strFrom to strTo`
13. `void strcat(char* strFrom, char* strTo) // adds strFrom to end of strTo`

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 **lab1_lastname_loginID.s**. Example: If your name is John Doe and your login ID is jxd1234, your submission file name must be “lab1_Doe_jxd1234.s”.