Introduction to Computers
Proposed exercises

Exercise 1. Convert the following 16-bit binary number to hexadecimal: 1101001011101010

Exercise 2. Convert the following hexadecimal number to binary: F73AB591

Exercise 3. Considering a hypothetical computer with the following characteristics:

- Size of a memory location: 16 bits
- Instruction size: 16 bits
- Operation code: 3 bits
- Number of general-purpose registers: 4 (2 bits) R0 (00)
  - R1 (01)
  - R2 (10)
  - R3 (11)

Instruction	**Description**
000010010XXXXXXX	Add the record 00 with 10 and store the result at 01
0010100000000101	Stores in register 01 the value 00000000101
0100100000001001	Stores in register 01 the value stored in memory position 00000001001
0110100000001001	Stores in memory position 00000001001 the contents of register 01
1000000000001001	ump to execute the instruction stored in memory position 0000000001001
1010100000001001	If the content of register 01 is equal to register 00, jump to execute the instruction stored in 000001001

Write a program using the above instructions to calculate the sum of the first 10 natural numbers: 1 + 2 +3 + 4 ... + 10