**DECIMAL TO BINARY CONVERSION**

**AIM:**

To convert a decimal number into its binary equivalent using the 8085 microprocessor.

**ALGORITHM:**

1. **Load the decimal number** into a register (e.g., register B).
2. **Initialize HL register pair** to point to the memory location where binary bits will be stored.
3. **Set a loop counter** in register C to 8 (for 8 bits).
4. **Repeat the following steps until all bits are processed:**
   * Copy the value from register B to accumulator.
   * Mask the least significant bit using ANI 01H.
   * Store the result (0 or 1) at the current memory location pointed by HL.
   * Rotate the accumulator right using RRC to shift bits.
   * Update register B with the rotated value.
   * Decrement HL to move to the next memory location.
   * Decrement loop counter and repeat if not zero.
5. **Terminate the program** using HLT.

**INSTRUCTION EXPLANATION:**

|  |  |
| --- | --- |
| MVI B, 0AH |  |
| LXI H, 2207H |  |
| MVI C, 08H |  |
| MOV A, B |  |
| ANI 01H |  |
| MOV M, A |  |
| RRC |  |
| MOV B, A |  |
| DCX H |  |
| DCR C |  |
| JNZ LOOP |  |
| HLT  **OUTPUT :** |  |
| **RESULT:** Thus the program was executed successfully using 8085 processor simulator. |  |