

**Department of Computer System Engineering**

**COMPUTER DESIGN LAB**

**ENCS 411**

**PRELAB2**

**Experiment No. 3**

***Controlling Stepper Motor***

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**Section: 3**

**Date: 24/03/2014**

* **What is the effect of assembly instructions ROR, ROL?**

ROR: shift each bit to the right and the least bit on the right is shifted to the first position and is assigned to the carry.



ROL: is the opposite of ROR where the least bit on the left is shifted to the last position and is assigned to the carry.



* **What does “stepper motor resolution” means?**

It is a unit degree, it is the degrees by which a stepper motor rotates per pulse. For example, a 6 degree resolution means that the stepper motor rotates by 6 degrees per pulse and that mean it needs 60 (3600 /6) pulses to complete a full rotation (3600 ).

* **Fill the 1-phase excitation table (counter-clockwise), 2-phase excitation table (clockwise).**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-PhaseExcitationTable |  | A | B | A’ | B’ | HEX | 2-PhaseExcitationTable |  | A | B | A’ | B’ | HEX |
| Step 1 | 1 | 1 | 1 | 0 | 0EH | Step 1 | 0 | 0 | 1 | 1 | 03H |
| Step 2 | 1 | 1 | 0 | 1 | 0DH | Step 2 | 1 | 0 | 0 | 1 | 09H |
| Step 3 | 1 | 0 | 1 | 1 | 0BH | Step 3 | 1 | 1 | 0 | 0 | 0CH |
| Step 4 | 0 | 1 | 1 | 1 | 07H | Step 4 | 0 | 1 | 1 | 0 | 06H |