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Development of an Android App For Designing Of Stepper Motor By Kodular Software

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Abstract: A stepping motor or step motor is also known as a stepper motor, may be a brushless DC electric motor of a full rotation divided into a number of equal steps. In this project, we aim to propose GUI software specifically designed for this application. Implementing a system that has GUI for designing Stepper Motor dependent variables supported given parameters. Designing techniques were developed for both typologies of static magnet stepper motors, respectively bipolar stepper motor and unipolar stepper motor.

Keywords - java language, program Stepper motor, Robotics.

I. INTRODUCTION

In this review paper, we are visiting introduce the easiest way to calculate important parameters required for designing a stepper motor. A step motor or stepping motor is also known as a stepper motor, may be a brushless DC electric motor of a full rotation divided into a number of equal steps. The motor's position are often commanded to move and hold at one of these steps without any position sensor for feedback Stepper motors are a particular class of motors that fall in the category of motors. they need multiple poles which allow accurate positioning, and division of an entire rotation of the motor to a uniform number of steps. Most stepper motors have 200 steps per revolution and supply a repeatable relative positioning without feedback. Stepper motors are used for several applications i.e., security systems medical devices, antennas, telescopes, robots, fluid pumps, hard disc drives, electronics, and plenty of industrial applications. A stepper motor is a mechanical device it converts electrical power into mechanical power. Also, it's a brushless, synchronous motor that can divide a full rotation into an expansive number of steps. The motor's position can be controlled accurately without any feedback mechanism, as long because the motor is carefully sized to the application. Stepper motors are like switched reluctance motors. The stepper motor uses the theory of operation for magnets to make the motor shaft turn at a precise distance when a pulse of electricity is provided.

II. PROBLEM IDENTIFICATION

The conventional systems developed earlier had only a limited number of parameter for modelling.
Due to this the system couldn't develop or design a precise stepper motor.
Time inclusion of independent software programs for real time modelling,development of a motor.

III. AIM OF PROJECT AND LANGUAGE USED

3.1 Aim of Project

To design and develop a system which has the following features. An app that can be used to design a stepper motor by utilizing parameters and calculating dependent values of the stepper motor. It should also have interface to motor drivers and stepper motors remotely over internet.

3.2 LANGUAGE USED FOR DEVELOPIN SOFTWARE

Java may be a widely used object-oriented programming language and package platform to form applications that run on billions of devices, as well as notebook computers, mobile devices, diversion consoles, medical devices, and plenty of others. The foundation and syntax of Java are supported the C and C++ languages. One major advantage of developing package with Java is its portability. Once you have got written code for a Java program on a personal computer, its terribly straight forward to move the code to a mobile device
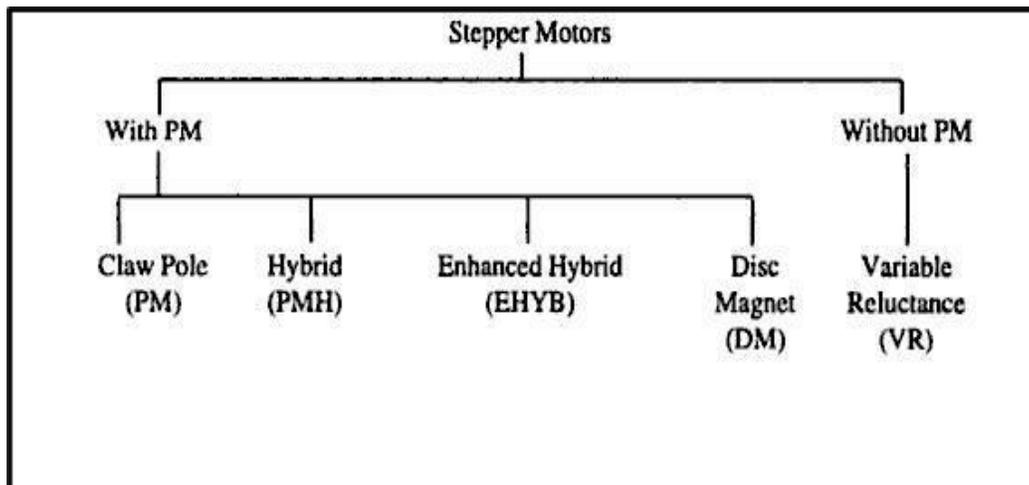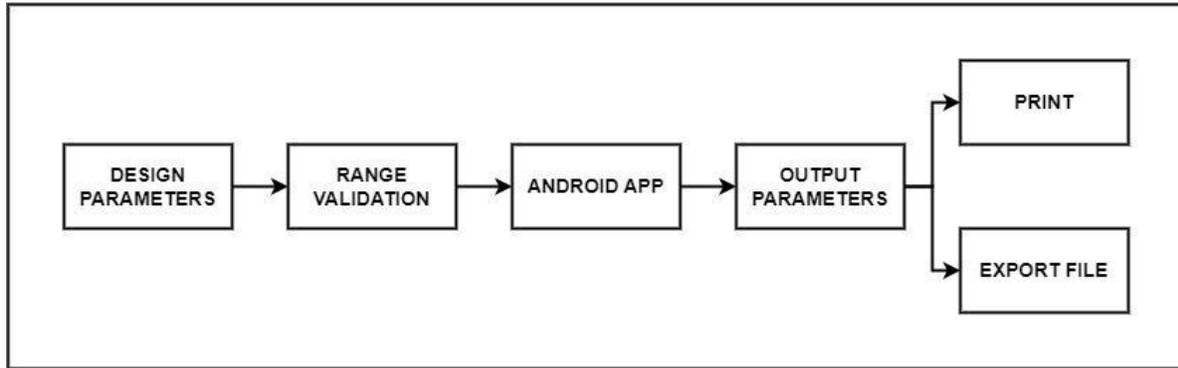
3.3 CLASSIFICATION OF STEPPER MOTOR

Fig.3.1 Classification of stepper motor

IV. METHODOLOGY

An Android App based Graphical User Interface is developed for Human Machine Interaction in this system. The main functionality of the app is to provide an interface to design a stepper motor by using various parameters related to the stepper motor as per application. The HMI developed can be also used to various stepper motors via wired or wireless protocol. It has inbuilt Wi-Fi for wireless applications. The Android App will be developed using Kodular App Development Platform.

4.1 BLOCK DIAGRAM

Fig. 4.1 BLOCK DIAGRAM

V.   FIGURES AND TABLES

Figure No.	Name of Figures.
Fig 3.1	Classification of stepper motor
Fig 4.1	Block Diagram

VI.   CONCLUSION

The system provides an easy-to-use interface for designing of stepper motors. The user only has got to provide the required parameters to get a properly modeled stepper motor. during this project, an android app has been developed for modeling all types of stepper motors.

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REFERENCES

[1] F. J. Lin et al., "Variable structure adaptive control for PM synchronous servo motor drive," IEE Proc.
- Elect. Power Appl., vol. 146, no. 2, pp. 173–185, 1999.

[2] T. Takahashi and I. Rectifier, "High-Performance AC Drive by Single Chip Motion Control Engine IC," Interface, pp. 1–8.

[3] Y. Seki et al., "Quick and stable speed control of SPMSM based on current differential signal and extension of DC-link voltage utilization in flux- weakening region," Proc. - 2015 IEEE Int. Conf. Mechatronics, ICM 2015, vol. 1, pp. 709–714, 2015.

[4] Y. zhang et al., "An Active Disturbance Rejection Control of Induction Motor Using DSP + FPGA," pp. 4047–4052, 2013.

[5] J. Ollervides et al., "Feedback Electronic Power Drive for a Brushless AC Servomotor," in 2011 IEEE Electron., Robotics and Automat. Mech. Conf., 2011, pp. 264–269. Trolly", International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 3, 2016