Lesson 2.3 Automated Systems - Key Terms

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| **Term** | **Definition** |
| **Analog Signal** | A signal having the characteristic of being continuous and changing smoothly over a given range, rather than switching suddenly between certain levels. |
| **Automation** | A technique that is used to make a process automatic. |
| **Behavior** | Anything your robot does; turning on a motor is a behavior, following a line is a behavior, navigating a maze is a behavior. |
| **Comments** | Using descriptive text to explain portions of code. Comments do not change the way a robot behaves, but are important for the programmer to remember what the code does. |
| **Computer Aided Manufacturing (CAM)** | Using computers to operate and control machines and processes to manufacture a product. |
| **Computer-Integrated Manufacturing (CIM)** | A company-wide management philosophy for planning, integration, and implementation of automation. |
| **Closed-Loop System** | A system that uses feedback from the output to control the input. |
| **Digital Signal** | A system of discrete states: high or low, on or off, 1 or 0. |
| **Efficiency** | The ability to bring a desired result with the least waste of time, energy, or material. |
| **Experimentation** | Try out a new procedure, idea, or activity. |
| **Feedback** | Information about the output of a system that can be used to make adjustments. |
| **Flexible Manufacturing System (FMS)** | The efficient production of small amounts of products. |
| **Innovation** | An improvement of an existing technological product, system, or method of doing something. |
| **Input** | Information fed into a system. |
| **Invention** | A new product, system, or process that has never existed before, created by study and experimentation. |
| **Limit Switch** | A touch sensor used to limit the motion of a moving device. Limit switches may be used to provide a precise beginning and end point to mechanical motion. |
| **Malfunction** | To function imperfectly or badly. |
| **Open-Loop System** | A control system that has no means for comparing the output with input for control purposes. An open-loop system often requires human intervention. |
| **Output** | The information produced by a computer. |
| **Point Turn** | A turn where one wheel rotates forward and the other rotates backward, causing the robot to sit and spin in place. |
| **Potentiometer** | A sensor used to measure the angular position of the axle or shaft passing through its center. |
| **Program** | Set of instructions that control the operation of a computer. |
| **Pseudocode** | Shorthand notation for programming which uses a combination of informal programming structures and verbal descriptions of code. |
| **Sensor** | A device that detects some important physical quality or quantity about the surrounding environment, and conveys the information to the robot in electronic form. |
| **Software** | Programs and other operating information used by a computer. |
| **Swing Turn** | A turn where one wheel rotates and the other stays in place, causing the robot’s body to “swing” around the stationary wheel. |
| **System** | A group of interacting, interrelated, or interdependent elements or parts that function together as a whole to accomplish a goal. |
| **Threshold** | A level or point at which something would start or cease to happen or come into effect. |
| **Touch Sensor** | A sensor that detects physical contact and reports back to the controller whether its contact area is being pushed in or not. |
| **Troubleshoot** | Locating and finding the cause of problems related to technological products or systems. |
| **While Loop** | A control flow statement that allows code to be executed repeatedly. |