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**FINAL REPORT :**  
*CANS AND PLASTIC BOTTLES SEPARATOR*

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## ABSTRACT

There is a need to emphasize the importance of separating organic waste and rinsing out recyclable items because in the case of plastics and polystyrene, contaminated materials become less valuable because of its properties at a molecular level could become weaker[1]. As stated in the article released on October 2015, separating wasted products are still a main problem in recycling industry. In this project, a prototype is invented to fulfill the purpose of recycling. The objective is to create a new machine to make recycle easier which is designing a separator and counter of cans and plastic bottle with low time consuming as well as to develop a prototype of the stated machine. The conveyor machine is useful for recycling purpose which is to separate and count metals and non metals objects such as plastic bottles and aluminium cans. The system used a DC motor to move the conveyor, an inductive proximity sensor is installed in the middle of the conveyor side to detect metals on the conveyor while a linear solenoid is also installed there to knock out the metals (aluminium cans) and separate both metals (aluminium cans) from non metals (plastic bottle) then both objects are counted using an infrared sensor object counter. As results, the simulation and experimental setup of IR sensor and counter circuit was successful but unfortunately the PCB are not successful. The proximity sensor spoilt as the output turned out vice versa from what it should be. DC motor speed controller circuit works well on both simulation and PCB. The invention of this new machine will probably help human to handle wasted products in a more proper way since it is made as to makes recycling process easier and less time consuming.

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