Pick and Place Robot

Pick and Place robot was made during the year 2014-2015 when I was in the last year of my diploma studies. It was a group of four students and led by myself. I have completed a diploma in electronics and communication engineering at Parul University, Vadodara, Gujarat, India. During the last year the project course was divided into two semesters with allocation of software and hardware. The initial process started with finding the difficulties at the industrial level. Many workers have lost their lives, jobs, and injured themselves while working in the heavy line mechanism. After hard work surfing different industries and understanding the problem, our group came to a conclusion. It would be very essential to society if we could build a robot that could ease the hard work of industrial workers.

The development of the robot began with gathering the required material and components to achieve the task. The components were designed virtually in a software known as 'proteus'. The virtual circuit was designed to check the functionality of components. After the completion of the design process, components were programmed with instructions and tested to perform the task. We had used the Embedded C, the programming language to program the microcontroller of the robot. Embedded C is the combination of the assembly and C language. After a couple of queries in the programming, the software design was successfully accomplished. It provided a green signal to work on the hardware module of the project.

The hardware implementation was to follow the template and structure that was created on the software design. Nonetheless, there was a difference in the virtual and physical outcomes of components, so we had difficulties in the actual mounting of components on the circuit board and on the programming of the

microcontroller. Eventually, we were able to solve the problems and the robot started working as per the instructions.

We have presented the robot at a couple of exhibitions with excellence. We have received the 1st rank in "TECH EXPO" Inter College Project Competition, At: Parul University, Limda, and 1st rank in "CREATO" National Level Project Competition, At: BBIT, Vallabh Vidhyanagar. The achievements had completely changed our vision and explored more to make it efficient for heavy load management. It had the capability of going to the places in high temperature zones where human lives are in jeopardy. As well, it was tested with the production of 24/7. It was a great learning experience for myself and my colleagues. We were able to learn different skills including programming, software development, hardware implementation, problem solving, and project management.