

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A
PROTOTYPE AUTOMATIC PING
PONG LAUNCHER**

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ABSTRACT

In contemporary Malaysia, the popularity of sports has surged, with activities extending into the evening to accommodate the busy daytime schedules of many individuals. Table tennis, a widely embraced sport in Asia, is particularly valued for its health benefits and versatility, being enjoyed both competitively and recreationally. Despite the advancements in table tennis training technology, there is a need for affordable and portable training solutions for individual practice. This project aims to address this gap by designing and fabricating a low-cost, automatic table tennis ball launcher that is accessible to a wide range of players. The primary objectives include developing a functional prototype using readily available materials and machinery, ensuring the product's cost remains below RM300. The project will employ SolidWorks for technical drawings and utilize DC motors for the launching mechanism. Expected outcomes include a user-friendly, compact, and portable design that allows players to practice independently, enhancing their skills through consistent and adjustable ball delivery. This initiative not only promotes skill development but also provides an enjoyable and realistic training experience, ultimately contributing to the improvement of table tennis performance among individuals.[1]

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

In contemporary Malaysia, sports have become increasingly popular and are receiving significant attention both domestically and internationally. The efficient utilization of sports infrastructure, including tennis courts, futsal arenas, badminton facilities, and open fields, underscores this growing interest. Participating in sports is no longer confined to daylight hours but has extended into the evening. This shift is a response to the busy daytime schedules of many Malaysians, who prioritize their work and responsibilities during the day, opting to engage in sports and exercise as a form of leisure and fitness in the evenings. For example, Table tennis is an excellent sport for staying healthy. It's highly popular in Asia, embraced by people of all ages. Table tennis can be played by two people (singles) or four people (doubles). Players use paddles to hit a lightweight ball over a net onto the opponent's side of the table. The game involves various types of play, including serving, rallies, quick movements, and strategic gameplay. Table tennis can be enjoyed both competitively and as a recreational activity with friends and family.

Moreover, the technology available today is sufficient for individuals to practice table tennis alone or with a partner. Technology in table tennis has advanced significantly, providing players with innovative tools to enhance their training and gameplay. High-speed cameras are employed to capture and analyze player movements and ball trajectories, offering detailed insights for performance improvement. Robot training machines simulate diverse shots and playing styles, enabling players to practice alone with precision and consistency. These technologies revolutionize the training experience, allowing players to refine their skills effectively and elevate their performance on the table. [2]

Therefore, every individual requires continuous training to sharpen their skills in table tennis. The goal of this project is to offer opportunities for people of all ages to practice wherever they are, particularly when they need to train alone. By promoting the idea of individual training, this initiative seeks to empower individuals to pursue their table tennis objectives and enhance their skills even without a designated training