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UNIVERSITI  
TEKNOLOGI  
MARA

**UNIVERSITY TECHNOLOGY OF MARA (UTM)**

**KAMPUS PUNCAK ALAM, SELANGOR**

**TECHNOLOGY BLUEPRINT**

**SMART SHOE**

**FACULTY** : FACULTY OF HEALTH SCIENCE (HS243)

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# CHAPTER 1

## 1. PRODUCT DESCRIPTION

### 1.1. Introduction

Nowadays, most of people are practising a healthy lifestyle in their daily life. People love to go for workout, jogging, exercising, and do outdoor activities in order to gain a healthy lifestyle. Most of people like to measuring their performance of tracking fitness and evaluating their health metrics. People also are looking forward to the shoe that can calculate exercise-related data and it has becoming increasingly popular among people.

Due to that, The F4 company would like to produce the Smart Shoe. The Smart shoe that will be produced is unique, convenience and suit to athletic and non athletic. First of all, the Smart Shoe is made of quick dry material and ultra light foam sole. Quick dry material using polyester can be used when going for wet area and the foam for sole makes the shoe is soft plastic that is filled with air bubbles. It will make people be more comfortable when wear the shoe because it is so light and breathable.

The Smart Shoe features are consist of GPS Tracker and bluetooth, step tracker, memory card, lighting sensor, pressure and environmental sensor. On the top of it, there is a part of tracker that will be loved by consumers because it can be used to track the step that will be more accurated compare to the wristband or watches that is not the most logical place for monitoring the step taken, the distance cover, and other workout metrics. By using shoe as a tracker, it will be a good way to remove friction that keeps consumers from adopting trackers for the long term.

In addition, other than step tracker, GPS tracker also attached to the shoe as it will receive a high frequency, low power radio signal from the satellites. It will be functioned when people get lost when doing activity such as hiking. Other than that, the shoe comes with pressure and ambient environmental sensor which is can measure the weight of body, surrounding temperature and humidity.

## **1.2. Purpose Of Development**

- There is a necessity of innovative ideas which can bring a improvement and huge impact for consumer
- There are around 7.4 billion people in the world, implying 3.4 trillion calories of energy are being burnt by people while walking. This Smart Shoe makes the most of this energy being wasted for various exciting applications and functions.
- There are around 285 million people who are visually impaired and Smart Shoe can be a great aid to these people. Introducing Smart Shoe can make a great impact on the country and help us walk towards a better and bright future.

## **1.3. Product Concept**

- The Smart shoe's features fit a wide range of uses and people. Whether you're a gadget enthusiast, sneaker collector, health enthusiast, athlete, or simply a daily user who wants a well-designed pair of shoe, this can be the choice. This shoe designed with smart features for modern-day conveniences.
- People can use this shoe for various outdoor activities such as running, walking, jogging, hiking and trekking.
- This shoe also can help people monitor their number of step, heartbeat rate and calories burnt.
- This Smart Shoe can prevent user to track their way and prevent form lost while in their track such as while hiking or going to jungle trekking with presence GPS navigation.

## **1.4. Application**

### **1.4.1. Functions**

This shoe has many function regarding to is features. One of the main function is to use during perform outdoor activity, sports activity such as running. It is essential to have good and durable shoe to meets the needs of individual. Other than that this smart shoe comes with step tracker. Is will count the step during activity. This shoe also comes with GPS tracker. Nowadays it is essential to have GPS as a perason easily will get lost especially during outdoor activity such as hiking. The GPS receiver receives a

high-frequency, low-power radio signal from the satellites. The time it takes for a signal to the smart phone can be translated into distance from the satellite, which can be translated into precise coordinates with data from enough satellites. GPS chips continue to get better at handling battery usage, but GPS is still fairly power hungry compared to other sensors. Unlike simple step counting, GPS allows runners, walkers and cyclists to easily map their exercise and analyse the terrain where they were exercising. Other than that, this shoe comes with pressure and ambient environmental sensor which is can measure the weight of the body, surrounding temperature and humidity. Quick dry material using polyester as outdoor activity tends to exposed to wet area. The foam for soles makes the shoe is soft plastic that is filled with air bubbles. The properties of different foams are created by using different types of plastic and controlling the size and character of the air bubbles. Common foam in shoe EVA (ethyl vinyl acetate), Closed cell PU (Polyurethane) and PE (Polyethylene).

## 1.5. Unique Feature

### 1.5.1. Picture Description

