

ABSTRACT

Feet are members of body movements that play an important role in human activities. Feet receive a lot of pressure when humans perform activities such as standing, exercising, running, and walking. Feet support the whole body when humans perform these activities. In general, there are two types of normal foot bones (metatarsals), namely the U-shaped foot and the V-shaped foot [1]. The difference between normal U and V feet lies in the area of the sole of the foot, the U shape is wider than the V shape. There are several abnormal foot shapes including cavus foot posture and flat feet [2]. Cavus foot shape is a condition in which the foot has a very high elevation. While the flat foot shape is the shape of the foot with the center of the foot too low or even touching the floor when standing or walking [3].

In previous studies, a design was developed to measure plantar pressure and transmit data wirelessly to a computer with a distribution of 32 pressure sensor points to determine the anatomy and physiology of the body [4]. Therefore, in this final project, the development of previous research was carried out by reducing the spread of pressure sensor points on the plantar foot and displaying a two-dimensional image.

The results of the human foot pressure measurement are obtained by knowing the value of the FSR402 sensor at the specified points and under conditions of walking on a flat plane, when climbing stairs, when going down stairs, when walking turns, and when running. On the normal foot sensor 5 consistently produces an average pressure value of 0 Pa on the right foot and left foot while on the flat foot each sensor produces an average pressure value of 25.65 Pa on the right foot and 28.75 Pa on the left foot on each foot. different conditions, this is due to differences in the middle bone of the human foot. The point of spread of pressure with two-dimensional imaging has been carried out using the mapping of the pressure points of the human foot, which can produce a large pressure on the sole of the human foot.

Keywords: *Plantar foot, Two-dimensional image, FSR402 sensor, Pressure distribution.*