CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter is to have a brief overview on the project background, problem statement, objectives of this project and scopes of the project.

1.2 PROJECT BACKGROUND

Over the years of continued evolution in our world, house breaking at both residential area and industrial area have been a serious problem in every each of the corners in the world. This problem had brought a creation of device named security system to detect intruders for either private housing areas or industrial areas. There are more and more users are trying to apply security system at their own private estate including the most advanced night vision infrared camera for intruder detection. There are quite a lot of security monitoring devices in the market such as CCTV camera, and fingerprint access identification system and face recognition system, but most of the house breaking cases happened in the night time and we are not able to see anything in the dark with our bare eyes and we are not able to give any respond right after the intruders broke in. This had caused a lot of losses to the properties due to poor detection of intruders in the night time. To avoid this kind of problems, we install night vision camera system in our own properties so that if there is an intruder appear or break in, we are able to detect their existence in advance to recognise them and capture their looks in
the dark. In this project, we are going to detect the existence of intruders through the webcam connected to PC which mounted at static position in the low light condition. The webcam used is a normal USB webcam which can be easily obtained. The camera allows us to capture image in the dark or low light condition and finally the image or video captured can be used for further analysis from time to time.

1.3 PROBLEM STATEMENT

Everyone of us has our own properties such as cars, land and houses. As we know, we are just not able to protect and monitor our properties all the time. Sometimes, we are not around in our house or when we went for travelling, nobody is staying in the house for few days. This has brought the chances for intruders to break into our house especially in the night time. Poor detection of intruders inside and outside of building in the night time has caused a great loss of the properties and also life-threatening to the human. Somehow, the cost of one full set of CCTV system is considered as high cost due to the combination of devices cost and installation cost while this is the price that not everyone can afford to own it.

1.4 PROJECT OBJECTIVES

1) To investigate the intruder detection system with a USB camera as night vision camera that can be used in indoor and outdoor of buildings.

2) To analyse the light intensity required to capture a picture by the USB camera to detect intruders.

3) To determine the distance required to capture the shadow of intruders in the dark environment.
1.5 PROJECT SCOPE

1) Interfacing the USB night vision camera with the program.
2) Analysing the quantity of light required to detect intruders.
3) Conduct tests on the ground by using the USB camera to determine the possible distance between intruders and the camera to capture the image of the intruders.