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# An IOT Enabled Military Spying Robot Using Raspberry Pi

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**ABSTRACT:** In generally security is a very important crisis for every department in all over the world. Nowadays many hackers are trying to hack the system in various sectors. So security has become a major issue in the evolution of technologies. It leads to major issues if these securities are vulnerable in sectors like militaries. At the same time, some spied details are leaked in military department. This is a major advantage for international terrorists. They can easily provoke a war between countries. To avoid these kind of issues in military, we introduce this security system using An IOT enabled military spying robot using RASPBERRY PI. This robot continuously monitors the environment and detects the humans present in surveillance area and transmits data to the server using IOT. Also the robot performs various processing techniques to obtain the human count and other parameters.

**KEYWORDS:** Internet of things(IOT); RASHBERRY PI;

## I.INTRODUCTION

The military is undeniably the primary customer of new advances and improvements in strategy, and is also often the sponsor of new improvements when it comes to envisioning new innovations in military settings. Numerous basic military technologies deployed out of the blue are now advanced to the piece of industrial robots. In any case, the importance of military autonomy and modern mechanical autonomy is still quite different. The military has special, robotic equipment while, in modern terms, the robot is a larger amount of a smart, adaptable, large-scale manufacturing machine. Later, the use of modern robots for military applications will always be imaginable. Cost and development of the specialized capacity of the innovative robot will build the enthusiasm of the military customers. In the research, we will demonstrate that the inspiration for the utilization of robots, inside the military and inside industry, is the substitution of people. The explanations behind this substitution are, as per the following: quality, cost and acculturation; be that as it may, utilizing an alternate methodology in each field.

## II.LITERATURE SURVEY

At present the surveillance of International border areas is a difficult task. The border guarding forces are patrolling the border seriously, but it is not possible to watch the border at each and every moment. An essential requirement of this situation is a robot which automatically detects trespasser in the border and report nearby board security control unit. Many of the military departments now utilize the robots to carry out risky jobs that cannot be done by the soldiers. In this present work, a Raspbian operating system based spy robot platform with remote monitoring and control algorithm through Internet of Things (IoT) has been developed which will save human live, reduces manual error and protect the country from enemies. The spy robot system comprises the Raspberry Pi (small single-board computer), night vision pi camera and sensors. The information regarding the detection of living objects by PIR sensor is sent to the users through the web server and pi camera capture the moving object which is posted inside the webpage simultaneously. The user in control room able to access the robot with wheel drive control buttons on the webpage. The movement of a robot is also controlled automatically through obstacle detecting sensors to avoiding the collision. This surveillance system using spy robot can be customized for various fields like industries, banks and shopping malls.



**III. EXISTING SYSTEM**

The system consists of Sensors for detecting the presence of human in the surveillance area. But this utilizes IR sensor for human detection. The IR sensor in various cases provides false output as it detects the presence of obstacle.

It can be anything which obstructs the signal transmission. So malfunction is provided by the system due to the use of IR sensor.

**DISADVANTAGES**

- Accuracy is very low as false detection is performed.
- Data transmission is not performed

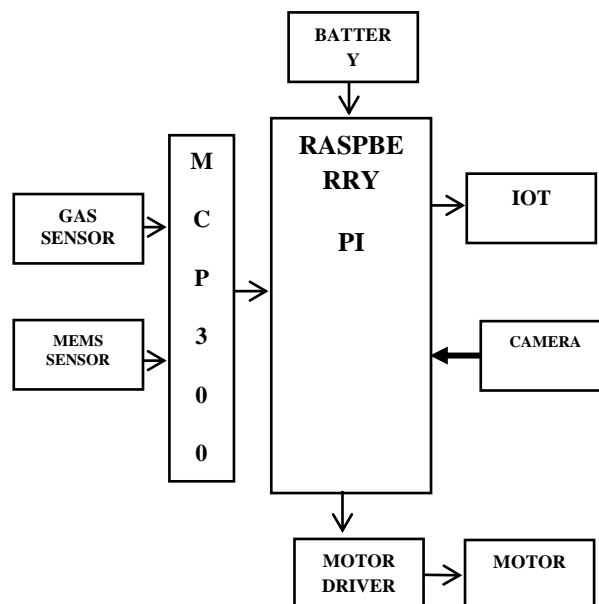
**IV. PROPOSED SYSTEM**

The disadvantages of the existing system are overcome by the proposed system. The raspberry pi is used as a processing device. A camera is attached to the Pi for monitoring the person present in the area. This is performed by image processing techniques. Once the human count is obtained, then the data is updated. Also the system has to be connected to a Network, so that the user can control the system from anywhere using IOT. The system also consists of a Wireless camera for providing a live video monitoring for the user to drive the vehicle. The system also consists of a Gas sensor and MEMS sensor. The gas sensor is used to monitor the GAS level in the environment. The MEMS sensor is used to obtain the position of the robot. The ADC here is used as a conditioning unit which converts the analog input from the sensors to a digital form.

**ADVANTAGES:**

- Human count is performed using Image processing.
- Live streaming is performed
- IOT based controlling is performed

**V. BLOCK DIAGRAM**



**VI. REQUIREMENTS**

**HARDWARE REQUIREMENTS**

- BATTERY
- RASPBERRY PI
- GAS SENSOR
- MEMS SENSOR

- USB CAMERA
- MOTOR DRIVER
- MOTOR

**SOFTWARE REQUIREMENTS:**

- RASPBIAN OS
- PYTHON

**VII.ALGORITHM USED**

**OPTICAL CHARACTER RECOGNITION**

OCR is a technology that recognizes text within a digital image. It is commonly used to recognize text in scanned documents, but it serves many other purposes as well.

OCR software processes a digital image by locating and recognizing characters, such as letters, numbers, and symbols. Some OCR software will simply export the text, while other programs can convert the characters to editable text directly in the image. Advanced OCR software can export the size and formatting of the text as well as the layout of the text found on a page. OCR technology can be used to convert a hard copy of a document into an electronic version (or soft copy). For example, if you scan a multipage document into a digital image, such as a TIFF file, you can load the document into an OCR program, which will recognize the text and convert the document to an editable text file. Some OCR programs allow you to scan a document and convert it to a word processing document in a single step. While OCR technology was originally designed to recognize printed text, it can be used to recognize and verify handwritten text as well. For example, postal services such as USPS use OCR software to automatically process letters and packages based on the address. The algorithm checks the scanned information against database of existing addresses to confirm the mailing address. The Google Translate app includes OCR technology that works with your device's camera. It allows you to capture the text from documents, magazines, signs, and other objects and translate it to another language in real-time.

**Introduction**

We'll be using Python in the workshop, and it'll save lots of time if, before arriving at the workshop, everyone has this installed and is familiar how to open, edit, and run a script (which is just a text file) using Python.

Furthermore, we'll be using IDLE, Python's own IDE (Integrated Development Environment) — combined source code editor and Python interpreter GUI. The workshop does not rely on any of its specific features, but it makes working with Python on Windows much easier and provides a multi-platform basis for examples.

**Create a Folder for Workshop Files**

No significant storage resources will be required, just a convenient place to browse, download files, create text files, etc. For example, C:\Documents and Settings\MY\_USERNAME\My Documents\workshop (Windows), or ~/workshop (Mac/Linux). This is referred to generically as *WORKSHOP* below.

**Install Python (and IDLE)**

There's a new major release of Python out, version 3. We are *not* using this — we're using **version 2**.

**Windows**

Python and IDLE are not installed by default.

- Browse to <http://www.python.org/download>.
- Look for the Windows downloads, choose the one appropriate for your architecture (32-bit or 64-bit). At the time of writing, the choices are:
  - **32-bit:** [Python 2.7.3 Windows Installer](#)
  - **64-bit:** [Python 2.7.3 Windows X86-64 Installer](#)

If you don't know the system architecture, try running winmsd.exe (in Windows XP) or msinfo32.exe (in Windows 7). Look at System Type and/or Processor. It will look like [this](#) for 32-bit, or [this](#) for 64.

- Run the installer and click through the prompts. Default options are usually just fine. This installs IDLE, too, by default.

IDLE (Python GUI) and Python (command line) should now be in your program menu, under Python 2.7, and Python will be associated with .py files. However they're going to need to know about the files we create during the workshop. This is easiest if we start IDLE from the *WORKSHOP* folder itself. Let's create a Windows script, idle.bat that does that:

- Browse to your *WORKSHOP* directory.
- Right-click in the empty space, choose New -> Text Document, name it idle.bat (accept the warning about file extensions).
- Edit the file by right-clicking and choosing Edit.
- Enter the single line:

```
• C:\Python27\Lib\idlelib\idle.bat
```

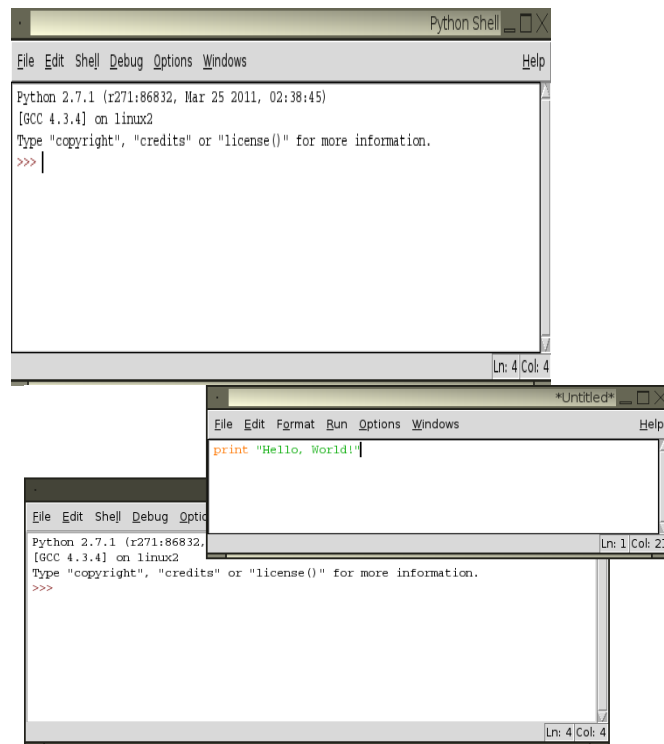
- Close the file.

You should now be able to double-click idle.bat to open IDLE.

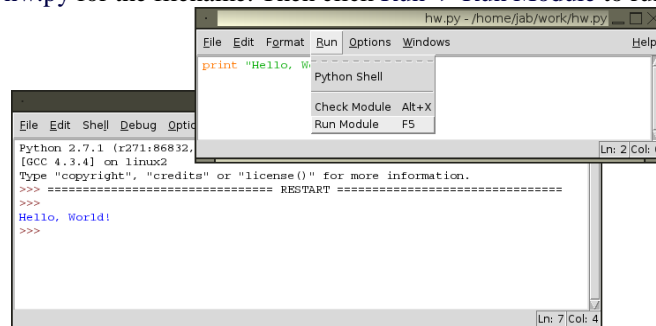
### Try IDLE

You should now have an IDLE session open that looks something like this:

This is where we'll pick up the workshop. If you're feeling ambitious, try creating a Python script by clicking File -> New Window, which will open a text editor window, and enter the following line:

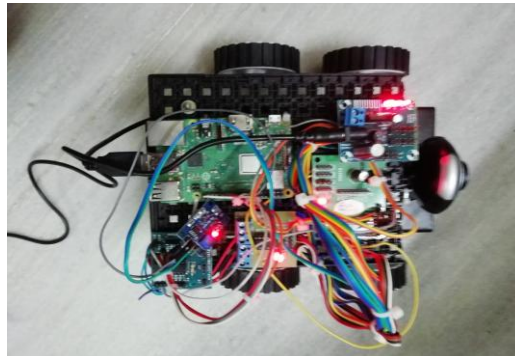


Click File -> Save and enter hw.py for the filename. Then click Run -> Run Module to run the script:



You have now written and run a Python script.

### VIII.RESULTS



### IX.CONCLUSION

Human detection Robot is to provide more security for the users to protect their belongings from robbers. The robot can move in all the directions automatically without controlling it, which makes the system more effective to use. As the Robot can move, it covers lot of distance that reduces the use of many sensors or many robots

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