

IoT Greenhouse™ – User Documentation

Overview:

The IoT Greenhouse™ is a learning system developed to teach the fundamentals of Python programming and Internet of Things (IoT). Both system documentation and learning content are available via a Git Repository. A Git Repository is a version-control system enabling users to “pull” the most recent versions of lessons and documentation from the repository. Git documentation and downloads are available at <https://git-scm.com>

Prerequisites:

There are no prerequisites for this task.

Performance Outcomes:

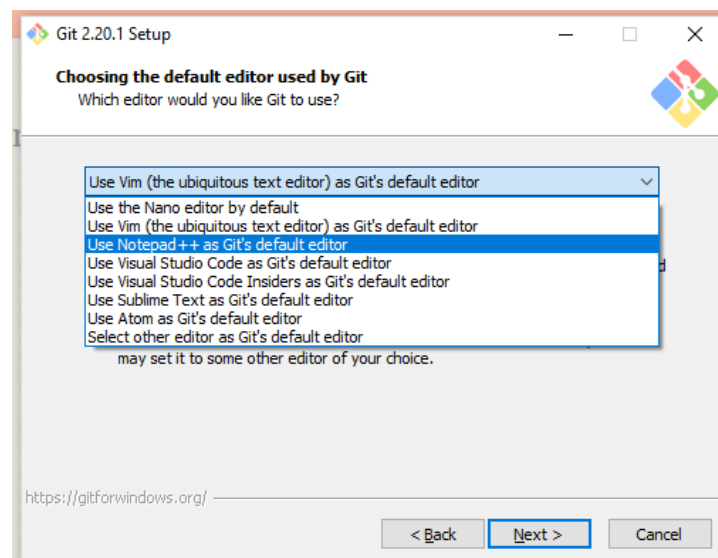
1. Download and install a Git client
2. Pull system documentation and lessons from Git repository

Resources:

1. <https://git-scm.com>
2. https://github.com/k2controls/iot_gh_docs_user

Step 1: Download Git Client

1. Download and install the Git client from <https://git-scm.com/downloads>. A Windows installation is shown below.
2. Accept the default options during the installation process with the exception for the default editor screen shown below. Installing Notepad++ is recommended over the default Vim editor.





3. Use the link provided in the installation screen shown on the prior page to access and install the Notepad++ text editor.



4. Complete the installation of the Git client by accepting the default values.
5. Download the IoT Greenhouse™ documentation by opening a command or terminal window.
6. Create a folder or directory as a container for the documentation. The screen capture below shows the `iot_greenhouse_docs` folder being created using the following Windows commands.

```
mkdir iot_greenhouse_docs
```

```
cd iot_greenhouse_docs
```

7. Enter the following Git command to clone (copy) system documentation and lessons to the current directory. The screen capture below shows the result of a successful download.

```
git clone https://github.com/k2controls/iot_gh_docs_user
```

```
C:\Users\K2>mkdir iot_greenhouse_docs  
C:\Users\K2>cd iot_greenhouse_docs  
C:\Users\K2\iot_greenhouse_docs>git clone https://github.com/k2controls/iot_gh_docs_user  
Cloning into 'iot_gh_docs_user'...  
remote: Enumerating objects: 136, done.  
remote: Counting objects: 100% (136/136), done.  
remote: Compressing objects: 100% (80/80), done.  
Rremote: Total 136 (delta 55), reused 132 (delta 55), pack-reused 0  
Receiving objects: 100% (136/136), 325.17 KiB | 1.99 MiB/s, done.  
Resolving deltas: 100% (55/55), done.  
Checking out files: 100% (134/134), done.  
C:\Users\K2\iot_greenhouse_docs>
```



8.

```
Command Prompt
C:\Users\K2\iot_greenhouse_docs>dir
Volume in drive C has no label.
Volume Serial Number is E860-66F9

Directory of C:\Users\K2\iot_greenhouse_docs

12/19/2018  07:17 AM    <DIR>        .
12/19/2018  07:17 AM    <DIR>        ..
12/19/2018  07:17 AM    <DIR>        iot_gh_docs_user
               0 File(s)                0 bytes
               3 Dir(s)  351,489,220,608 bytes free

C:\Users\K2\iot_greenhouse_docs>cd iot_gh_docs_user

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user>dir
Volume in drive C has no label.
Volume Serial Number is E860-66F9

Directory of C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user

12/19/2018  07:17 AM    <DIR>        .
12/19/2018  07:17 AM    <DIR>        ..
12/19/2018  07:17 AM    <DIR>        api
12/19/2018  07:17 AM             51,761 IoTGreenhouse.UserDocumentation.pdf
12/19/2018  07:17 AM             1,088 LICENSE
12/19/2018  07:17 AM              55 README.md
               3 File(s)            52,904 bytes
               3 Dir(s)  351,548,682,240 bytes free

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user>
```

9.

10.

```
Command Prompt

Directory of C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user

12/19/2018  07:17 AM    <DIR>        .
12/19/2018  07:17 AM    <DIR>        ..
12/19/2018  07:17 AM    <DIR>        api
12/19/2018  07:17 AM             51,761 IoTGreenhouse.UserDocumentation.pdf
12/19/2018  07:17 AM             1,088 LICENSE
12/19/2018  07:17 AM              55 README.md
               3 File(s)            52,904 bytes
               3 Dir(s)  351,548,682,240 bytes free

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user>cd api

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user\api>dir
Volume in drive C has no label.
Volume Serial Number is E860-66F9

Directory of C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user\api

12/19/2018  07:17 AM    <DIR>        .
12/19/2018  07:17 AM    <DIR>        ..
12/19/2018  07:17 AM    <DIR>        html
12/19/2018  07:17 AM             840 IoTGreenhouse_API.html
               1 File(s)             840 bytes
               3 Dir(s)  351,384,104,960 bytes free

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user\api>IoTGreenhouse_API.html

C:\Users\K2\iot_greenhouse_docs\iot_gh_docs_user\api>
```

11.

12.

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- 20.



Git Notepad++ Home IoT Greenhouse X

file:///C:/Users/K2/iot_greenhouse_docs/iot_gh_do

Inheritance diagram for GHService:

```
graph BT; IoTGreenhouseService --> GHService; GHService --> object
```

Public Member Functions

```
def __init__(self, pi, spi)
def update_greenhouse(self)
```

Data Fields

analog

Static Public Attributes

```
greenhouse = None
version = None
analog_service = None
ain_pot = None
ain_temp = None
ain_light = None
ain_aux = None
buzzer = None
fan = None
lamps = None
servo = None
switches = None
temperature = None
web_service = None
```

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- 22.
- 23.
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- 27.