CPE 322 – Lab 9

1. First, I installed pyang and PlantUML:
   a.
```
jstefan1@DESKTOP-6SV6DJ0:~$ sudo pip3 install pyang plantuml
[sudo] password for jstefan1:
Collecting pyang
  Downloading pyang-2.6.0-py2.py3-none-any.whl (594 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 594.1/594.1 KB 4.3 MB/s eta 0:00:00
Collecting plantuml
  Downloading plantuml-0.3.0-py3-none-any.whl (5.8 kB)
Requirement already satisfied: lxml in /usr/lib/python3/dist-packages (from pyang) (4.8.0)
Requirement already satisfied: httplib2 in /usr/lib/python3/dist-packages (from plantuml) (0.20.2)
Requirement already satisfied: pyparsing!=3.0.0,!=3.0.1,!=3.0.2,!=3.0.3,<4,>=2.4.2 in /usr/lib/python3/dist-pac
om httplib2->plantuml) (2.4.7)
Installing collected packages: pyang, plantuml
Successfully installed plantuml-0.3.0 pyang-2.6.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the sys
ge manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
```
2. I then ran the following commands:
   a.
```
jstefan1@DESKTOP-6SV6DJ0:~$ cp ~/iot/lesson9/intrusiondetection.yang ~/demo
jstefan1@DESKTOP-6SV6DJ0:~$ cd ~/demo
jstefan1@DESKTOP-6SV6DJ0:~/demo$ cat intrusiondetection.yang
module intrusiondetection {

 namespace "http://netconfcentral.org/ns/intrusiondetection";

 prefix "intrusion";

 description
  "YANG module for Intrusion Detection IoT system";

 revision 2014-07-15 {
  description "Intrusion Detection System";
 }

 grouping room {
  leaf doorsensorID {
   type string;
   description
    "ID of door sensor in the room";
  }
  leaf motionsensorID {
   type string;
   description
    "ID of motion sensor in the room";
  }
 }
```

b.

```
jstefan1@DESKTOP-6SV6DJ0:~/demo$ pyang -f yin -o intrusiondetection.yin intrusiondetection.yang
jstefan1@DESKTOP-6SV6DJ0:~/demo$ cat intrusiondetection.yin
<?xml version="1.0" encoding="UTF-8"?>
<module name="intrusiondetection"
        xmlns="urn:ietf:params:xml:ns:yang:yin:1"
        xmlns:intrusion="http://netconfcentral.org/ns/intrusiondetection">
  <namespace uri="http://netconfcentral.org/ns/intrusiondetection"/>
  <prefix value="intrusion"/>
  <description>
    <text>YANG module for Intrusion Detection IoT system</text>
  </description>
  <revision date="2014-07-15">
    <description>
      <text>Intrusion Detection System</text>
    </description>
  </revision>
  <grouping name="room">
    <leaf name="doorsensorID">
      <type name="string"/>
      <description>
        <text>ID of door sensor in the room</text>
      </description>
    </leaf>
    <leaf name="motionsensorID">
      <type name="string"/>
      <description>
        <text>ID of motion sensor in the room</text>
      </description>
    </leaf>
  </grouping>
```

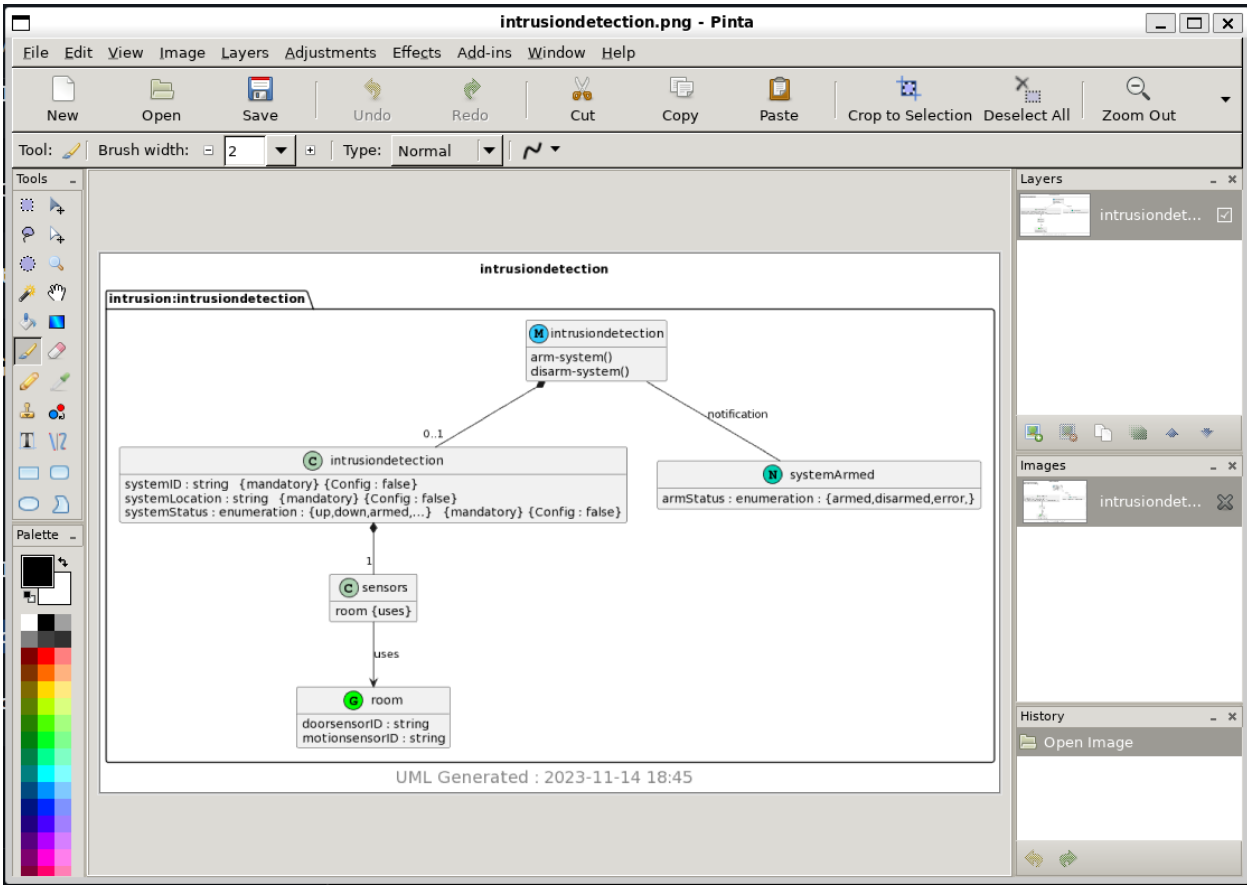
c.

```
jstefan1@DESKTOP-6SV6DJ0:~/demo$ pyang -f uml -o intrusiondetection.uml intrusiondetection.yang --uml-no=stereo
otation,typedef
jstefan1@DESKTOP-6SV6DJ0:~/demo$ cat intrusiondetection.uml
'Download plantuml from http://plantuml.sourceforge.net/
'Generate png with java -jar plantuml.jar <file>
'Output in img/<module>.png
'If Java spits out memory error increase heap size with java -Xmx1024m  -jar plantuml.jar <file>
@startuml img/intrusiondetection.png
hide empty fields
hide empty methods
hide <<case>> circle
hide <<augment>> circle
hide <<choice>> circle
hide <<leafref>> stereotype
hide <<leafref>> circle
hide stereotypes
page 1x1
Title intrusiondetection
package "intrusion:intrusiondetection" as intrusion_intrusiondetection {
}
package "intrusion:intrusiondetection" as intrusion_intrusiondetection {
class "intrusiondetection" as intrusiondetection << (M, #33CCFF) module>>
class "room" as intrusiondetection_I_room_grouping <<(G,Lime) grouping>>
intrusiondetection_I_room_grouping : doorsensorID : string
intrusiondetection_I_room_grouping : motionsensorID : string
class "intrusiondetection" as  intrusiondetection_I_intrusiondetection <<container>>
intrusiondetection *-- "0..1" intrusiondetection_I_intrusiondetection
intrusiondetection_I_intrusiondetection : systemID : string   {mandatory} {Config : false}
intrusiondetection_I_intrusiondetection : systemLocation : string   {mandatory} {Config : false}
```

d.

```
jstefan1@DESKTOP-6SV6DJ0:~/demo$ python3 -m plantuml intrusiondetection.uml
[{'filename': 'intrusiondetection.uml', 'gen_success': True}]
```

e. $ cd
f. $ sudo apt update
g. $ sudo apt install gimp pinta
h. $ cd ~/demo
i. $ pinta intrusiondetection.png:



j. $ gimp -h

```
jstefan1@DESKTOP-6SV6DJ0:~/demo$ gimp -h
Usage:
  gimp [OPTION…] [FILE|URI...]

GNU Image Manipulation Program

Help Options:
  -h, --help                            Show help options
  --help-all                            Show all help options
  --help-gegl                           Show GEGL Options
  --help-gtk                            Show GTK+ Options

Application Options:
  -v, --version                         Show version information and exit
  --license                             Show license information and exit
  --verbose                             Be more verbose
  -n, --new-instance                    Start a new GIMP instance
  -a, --as-new                          Open images as new
  -i, --no-interface                    Run without a user interface
  -d, --no-data                         Do not load brushes, gradients, patterns, ...
  -f, --no-fonts                        Do not load any fonts
  -s, --no-splash                       Do not show a splash screen
  --no-shm                              Do not use shared memory between GIMP and plug-ins
  --no-cpu-accel                        Do not use special CPU acceleration functions
  --session=<name>                      Use an alternate sessionrc file
  -g, --gimprc=<filename>               Use an alternate user gimprc file
  --system-gimprc=<filename>            Use an alternate system gimprc file
  -b, --batch=<command>                 Batch command to run (can be used multiple times)
  --batch-interpreter=<proc>            The procedure to process batch commands with
  -c, --console-messages                Send messages to console instead of using a dialog
```

k. $ gimp -a intrusiondetection.png: