Identify Devices Running Invalid Code

Read from this file:

```
cisco@ubuntu:~/Desktop/PRNE/section08$ cat devices
d01-is,ios,Mgmt:10.3.21.5,Version 5.3.1,cisco,cisco
d02-is,ios,Mgmt:10.3.21.6,Version 4.22.18,cisco,cisco
d03-nx,nx-os,Mgmt:10.3.21.7,Version 5.3.1,cisco,cisco
d04-nx,nx-os,Mgmt:10.3.21.8,Version 5.3.1,cisco,cisco
d05-xr,ios-xr,Mgmt:10.3.21.9,Version 4.16.9,cisco,cisco
d06-xr,ios-xr,Mgmt:10.3.21.10,Version 5.3.0,cisco,cisco
d07-xe,ios-xe,Mgmt:10.3.21.19,Version 4.16.0,cisco,cisco
d08-xe,ios-xe,Mgmt:10.3.21.22,Version 5.3.0,cisco,cisco
```

```
cisco@ubuntu:~/Desktop/PRNE/section08$ cat bad-version.py
current_version = 'Version 5.3.1'

# Print heading
print ''
print 'Devices with bad software versions'
print '=================================='

# Read all lines of device information from file
file = open('devices','r')
for line in file:

    device_info_list = line.strip().split(',') # Get device info into list

    # Put device information into dictionary for this one device
    device_info = {} # Create the inner dictionary of device info
    device_info['name'] = device_info_list[0]
    device_info['ip'] = device_info_list[2]
    device_info['version'] = device_info_list[3]

    # If the version doesn't match our 'current version', print out warning
    if device_info['version'] != current_version:
        print '      Device:', device_info['name'], '   Version:', device_info['version']

print '' # Print final blank line

file.close() # Close the file since we are done with it
```

Extract IP address using regular expression

```python
import re

# Print heading
print ''
print 'Devices and their Management IP addresses'
print '========================================='

# Create regular expression to find the Mgmt IP address
ip_addr_pattern = re.compile('Mgmt:([0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3})')

# Read all lines of device information from file
file = open('devices','r')
for line in file:

    device_info_list = line.strip().split(',') # Get device info into list

    # Put device information into dictionary for this one device
    device_info = {} # Create the inner dictionary of device info
    device_info['name'] = device_info_list[0]

    # Find the Mgmt IP address from the line in the file, and put it into device_info
    mgmt_addr = ip_addr_pattern.search(line)
    device_info['ip'] = mgmt_addr.group(1)

    print '       Device:', device_info['name'], '   Mgmt IP:', device_info['ip']

print '' # Print final blank line

file.close() # Close the file since we are done with it
```