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import pynetbox
import csv
import time
from pprint import pprint
import re

SLEEP_TIME=3 # time to pause between each api call
IP_NETBOX_FILE = './ip-netbox.csv'

'''
# example format of the csv file, comments start in #

# column indices 0,1,2,3,4,5,6,7,8,9
#,Aggregate,Prefix,Tenant,TenantGroup,Status,Site,Description,Tags,Comments
# Example,10.103.0.0/16,10.103.10.0/23,"In the new devtest environment, IP allocated for â.",,"choose one of devtest, prod, staging, qa","Active, container, Reserved, Deprecated","aws
,,10.102.10.0/24,vnet-dev,devtest,active,azure,rg-dev,eastus,
,,10.102.20.0/24,vnet-prod,prod,active,azure,rg-prod,eastus,
,,10.102.0.0/24,vnet-staging,staging,active,azure,rg-staging,eastus,
,,10.0.0.0/16,vnet-test,qa,active,azure,rg-qa,eastus,

'''

netbox_url="http://198.168.56.76:80"
netbox_token="263136752a7d0a95d6xxxxxx4d828419b0b014"

def main(argv=None):
    update_tenant_groups()
    update_tenants()
    update_prefixes()

# function for creating slug names consistently
def get_slug(name):
    name = name.strip()

    char_to_remove = ["-", " "]
    for char in char_to_remove:
        name = name.replace(char, "_")

    name = name.lower()
    name = re.sub('_+', '_', name)
    return name

def update_tenant_groups():
    print("Inside tenant_groups")
    nbapi = pynetbox.api(url=netbox_url, token=netbox_token)

    #print("Getting all tenant groups")
    tgs = nbapi.tenancy.tenant_groups.all()

    # create an empty hash
    current_tgs = {}
    for tg in tgs:
        tg_slug = get_slug(str(tg))
        current_tgs[tg_slug] = ""
    # print(str(tg))

    with open(IP_NETBOX_FILE) as csv_file:
        csv_reader = csv.reader(csv_file, delimiter=',')
        #print(row)
        for row in csv_reader:
            if ( '#' in row[0] ):
                #print ("Skipping " + str(row))
                continue
            else:
                #print ("Processing " + str (row))

                tg = get_slug(row[4].strip())
                #print ("tg " + tg)

                # Create tenant group only if non-empty
                if (tg != ''):
                    if tg in current_tgs:
                        print ("Tenant Group [" + tg + "] already exists ")
                    else:
                        print ("Creating tenant group [" + tg + "] ")
                        #tg_slug = get_slug(tg)
                        print("Adding: [" + tg + "]")
                        create_tg = nbapi.tenancy.tenant_groups.create(name=tg, slug=tg)
                        time.sleep(SLEEP_TIME)

                        print("Added: [" + str(create_tg) + " " + tg + "]")
                        current_tgs[str(tg)] = ""

    print ("Imported tenant group from CSV File")

def update_tenants():
    print("Inside tenants")
    time.sleep(SLEEP_TIME)
    nbapi = pynetbox.api(url=netbox_url, token=netbox_token)

    #print("Getting all tenants")
    tenants = nbapi.tenancy.tenants.all()

    # create an empty hash
    current_tenants = {}
    for tenant in tenants:
        tenant_slug=get_slug(str(tenant))
        current_tenants[tenant_slug] = ""
    # print(str(tg))

    with open(IP_NETBOX_FILE) as csv_file:
        csv_reader = csv.reader(csv_file, delimiter=',')
        #print(row)
        for row in csv_reader:
            if ( '#' in row[0] ):
                #print ("Skipping " + str(row))
                continue
            else:
                #print ("Processing " + str (row))

                tenant_slug = get_slug(row[3].strip())
                #print ("tg " + tg)

                # Create tenant group only if non-empty
                if (tenant_slug != ''):
                    if tenant_slug in current_tenants:
                        print ("Tenant [" + tenant_slug + "] already exists ")
                    else:
                        group_slug=get_slug(row[4].strip())
                        print ("Creating tenant [" + tenant_slug + " " + group_slug + "] ")

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time.sleep(SLEEP_TIME)
tenant_group = nbapi.tenancy.tenant_groups.get(slug=group_slug)
#print ("Slug here = " + tenant)
#print (tenant_id.id)
print ("retrieved tenant group id = " + str(tenant_group.id) )

time.sleep(SLEEP_TIME)
try:
    create_tenant = nbapi.tenancy.tenants.create(name=tenant_slug, slug=tenant_slug, group=tenant_group.id)
except Exception as e:
    print("Exception occurred...")
    print(type(e))
    print(e)
    time.sleep(2*SLEEP_TIME)
    continue

print("Added: [" + str(create_tenant) + "]")
current_tenants[tenant_slug] = ""

print ("Imported tenants from CSV File")

def update_prefixes():
    print("Inside update_prefixes ")
    nbapi = pynetbox.api(url=netbox_url, token=netbox_token)

    #print("Getting all prefixes")
    prefixes = nbapi.ipam.prefixes.all()

    # create an empty hash
    current_prefixes = {}
    for p in prefixes:
        tenant_slug = get_slug(str(p.tenant))
        prefix_slug = get_slug(str(p))
        current_prefixes[prefix_slug] = tenant_slug
    print('Adding hash: ' + prefix_slug + ' with value ' + tenant_slug )

with open(IP_NETBOX_FILE) as csv_file:
    csv_reader = csv.reader(csv_file, delimiter=',')
    #print(row)
    for row in csv_reader:
        if ( '#' in row[0] ):
            #print ("Skipping " + str(row))
            continue
        else:
            #print ("Processing " + str (row))

            prefix = get_slug(row[2])
            tenant = get_slug(row[3])

            print ("Inside else: " + prefix + ' ' + tenant)

            #print ("tg " + tg)

            # Create tenant group only if non-empty
            if (prefix != ''):
                #print (prefix + ' value ' + current_prefixes[prefix] + ' ' + tenant)

            if ((prefix in current_prefixes) and (tenant == current_prefixes[prefix])):
                print ("Prefix [" + prefix + "] with value [" + str(current_prefixes[prefix]) + " already exists in [tenant]... skipping...")
            else:
                print ("Creating prefixes [" + prefix + "], tenant = " + tenant)

                tenant_id = nbapi.tenancy.tenants.get(slug=tenant)
                print ("Tenant slug here = " + tenant)
                print ("retrieved tenant id = " + str(tenant_id.id) )

                time.sleep(SLEEP_TIME)
                create_prefix = nbapi.ipam.prefixes.create(prefix=prefix, tenant=tenant_id.id,
                    status=row[5], #site=row[6],tags=row[8],
                    description=row[7], comments=row[9])
                time.sleep(SLEEP_TIME)
                print("Added: [" + str(create_prefix) + "]")
                current_prefixes[prefix] = tenant

    print ("Imported tenant group from CSV File")

if __name__ == "__main__":
    main()

```