First, run the code to generate two certificates, `x509_keyGen.py` . You will then have two PEM files, `csr.pem` and `rsakey.pem.` Then run the `key_load.py` program to actually load the generated private RSA key into the system and use it to sign the CSR.

```
andy@alev-ubunt:~/Documents/py_ex/implementing_crypt_withPy/ch2$ ls -l
total 8
-rw-rw-r-- 1 andy andy 1093 Jan  1 16:08 key_load.py
-rw-rw-r-- 1 andy andy 3407 Jan  1 16:08 x509_keyGen.py
andy@alev-ubunt:~/Documents/py_ex/implementing_crypt_withPy/ch2$ python3 x509_keyGen.py
Operation complete.
andy@alev-ubunt:~/Documents/py_ex/implementing_crypt_withPy/ch2$ python3 key_load.py
```

Then, the openssl shell command is used to view the full CSR shown below.

```
andy@alev-ubunt:~/Documents/py_ex/implementing_crypt_withPy/ch2$ openssl req -text -in csr.pem
Certificate Request:
    Data:
        Version: 1 (0x0)
        Subject: C = US, ST = IL, L = Chicago, O = Keefe Industries, CN = andy.org
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (2048 bit)
                Modulus:
                    00:c9:85:98:36:91:6d:48:67:3c:75:50:03:b8:2e:
                    c7:b4:e6:a2:cf:39:06:46:ad:c5:4c:78:f8:2a:72:
                    9b:97:46:c7:5c:95:7c:83:53:4b:4d:9e:fc:72:89:
                    6a:c0:69:47:e9:24:2e:6d:43:45:81:c3:7e:04:29:
                    7b:5f:66:6e:88:9f:4c:7b:eb:99:40:f2:09:99:57:
                    c5:ce:cf:7c:6c:9c:36:c2:a0:1d:b9:6f:be:10:f1:
                    47:da:c6:ba:88:3d:5c:23:a6:88:92:03:c8:d2:ab:
                    ae:96:1d:d1:cd:da:68:86:51:0f:6a:8d:4b:66:e3:
                    e1:d0:cc:95:95:fc:24:92:3d:be:81:77:f6:8a:83:
                    65:4a:bd:a4:b1:3b:2d:8a:5f:97:ae:8d:e3:8b:00:
                    41:32:d1:56:4f:04:48:25:6b:05:37:06:b3:2e:32:
                    15:89:36:f7:9c:73:aa:06:6b:ed:21:b9:17:2e:3f:
                    fb:72:27:78:01:bf:74:3e:f1:3c:68:c0:91:d9:59:
                    c2:41:f3:59:76:90:ea:22:f3:17:63:b4:0e:66:44:
                    bf:eb:99:8e:c6:83:ea:78:28:93:d1:ec:ad:83:a4:
                    76:5a:2b:fe:36:95:1f:31:2a:91:c3:24:d1:e8:43:
                    da:ec:e9:e1:42:9e:05:3f:ce:f6:8e:42:6e:0b:f7:
                    13:a3
                Exponent: 65537 (0x10001)
        Attributes:
            Requested Extensions:
                X509v3 Subject Alternative Name:
                    DNS:keefe.com
    Signature Algorithm: sha256WithRSAEncryption
    Signature Value:
        33:2b:00:fa:e1:aa:f2:7b:c4:25:13:6a:31:cc:af:e0:20:d7:
        8d:23:89:ac:24:9c:96:84:48:3c:50:ed:0e:da:ee:93:e0:7e:
        f1:ea:fd:c4:5c:6f:6b:7e:93:53:5c:7c:8f:f0:fa:4e:ea:f5:
        2c:47:78:1f:8a:b1:02:d8:03:1d:fd:d3:9e:3f:2d:2b:28:e2:
        b9:e9:88:ac:9b:8a:93:07:04:bb:66:5c:f4:6e:6d:93:8f:b2:
        55:96:95:63:52:44:93:1b:4f:f5:f7:aa:4a:a7:4d:80:a5:09:
        b8:7f:82:56:62:ec:6a:c4:14:9f:a8:25:47:28:f1:62:49:fd:
        59:03:4b:12:27:fc:bc:f7:c7:6f:de:a5:7b:f0:5d:51:75:f2:
        1a:da:8b:40:63:2e:c1:78:2f:7d:fd:28:8e:36:ce:6c:6d:5a:
        4e:1f:57:4b:08:17:ed:0b:6d:1b:97:3a:76:73:6b:fa:b0:19:
        e9:8d:9b:25:a2:82:6b:f3:45:a7:93:d4:c8:3a:a1:ee:2f:ab:
        f3:4e:37:24:44:45:c0:9b:db:84:cb:03:cf:ce:18:a3:16:6c:
        11:04:76:a8:dd:f7:13:3d:78:30:17:cd:7e:e8:64:07:34:bc:
        7a:70:1f:1c:f1:8c:ec:90:b8:8c:c0:20:6f:0d:e8:5d:35:4b:
        51:55:19:5b
-----BEGIN CERTIFICATE REQUEST-----
MIICxjCCAa4CAQAwWjELMAkGA1UEBhMCVVMxCzAJBgNVBAgMAklMMRAwDgYDVQQH
DAdDaGljYWdvMRkwFwYDVQQKDBBLZWVmZSBJbmR1c3RyaWVzMREwDwYDVQQQDAhh
bmR5Lm9yZzCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAMnFmDaRbUhn
PHVQA7gux7Tmos85BkatxUx4+Cpym5dGx1yVfINTS02e/HKJasBpR+kkLm1DRYHD
fgQpe19mboifTHvrmUDyCZlXxc7PfGycNsKgHblvvhDxR9rGuog9XCOmiJIDyNKr
rpYd0c3aaIZRD2qNS2bj4dDMlZX8JJI9voF39oqDZUq9pLE7LYpfl66N44sAQTLR
Vk8ESCVrBTcGsy4yFYk295xzqgZr7SG5Fy4/+3IneAG/dD7xPGjAkdlZwkHzWXaQ
6iLzF2O8DmZEv+uZjsaD6ngok9HsrYOkdlor/jaVHzEqkcMk0ehD2uzp4UKeBT/O
```