Install Apache on Linux with HTTP and HTTPS

Install Apache for Linux
1. Download Apache2 from apt
    1. $sudo apt update && sudo apt install apache2

Configure apache server
- **Create directory that will contain our website's html**
    - $sudo mkdir -p /var/www/networksecuritysite/html
    - $sudo chown -R ubuntu:ubuntu /var/www/networksecuritysite/html
    - $sudo chmod -R 755 /var/www/networksecuritysite
- **Create a simple webpage for our website**
    - $nano /var/www/networksecuritysite/html/index.html
    - put some html content like

```
<html>
        <head>
                <title>Network Security Website</title>
        </head>
        <body>
                <h1> Hi this is the NS website! </h1>
        </body>
</html>
```

- **Create a new virtual host file**
    - $sudo nano /etc/apache2/sites-available/networksecuritysite.conf
    - put configuration

```
<VirtualHost *:80>
        ServerAdmin admin@info.net
        ServerName networksecuritysite.it
        ServerAlias networksecuritysite.it
        DocumentRoot /var/www/networksecuritysite/html
        ErrorLog ${APACHE_LOG_DIR}/error.log
        CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

- **Activate virtual host configuration file**
    - $sudo a2ensite networksecuritysite.conf
- **Disable default site**
    - $sudo a2dissite 000-default.conf

- **Add servername configuration**
    - $sudo nano /etc/apache2/conf-availale/servername
    - put the following string
        - ServerName networksecuritysite.it
    - enable configuration
        - $sudo a2enconf servername

- **Restart apache**
  - $sudo service apache2 restart

- **Check syntax error**
  - $sudo apache2ctl configtest

- **Check if everything works: connect with raspberryPi to ipAddress of host1 using the browser and see if the sites is correct**

Configure HTTPS
- **Enable ssl**
  - $sudo a2enmod ssl

- **make dir for certificates inside apache2**
  - $sudo mkdir /etc/apache2/cert

- **Copy previously created certificates inside /etc/apache2/cert folder**

- **Create directory that will contain our website's html**
  - $sudo mkdir -p /var/www/networksecuritysite/https/html
  - $sudo chown -R ubuntu:ubuntu /var/www/networksecuritysite/https/html

- **Create a simple webpage for our website**
  - $nano /var/www/networksecuritysite/https/html/index.html
  - put some html content like

```
<html>
      <head>
              <title>Network Security Website</title>
      </head>
      <body>
              <h1> Hi this is the NS website in HTTPS!</h1>
      </body>
</html>
```

- **Modify virtual host file appending new configuration**
  - $sudo nano /etc/apache2/sites-enabled/networksecuritysite.conf

```
<VirtualHost *:443>
      ServerAdmin webmaster@localhost
      DocumentRoot /var/www/html/networksecuritydemacs/ssl/html
      ErrorLog ${APACHE_LOG_DIR}/error.log
      CustomLog ${APACHE_LOG_DIR}/access.log combined
      SSLEngine on
      SSLCertificateFile /etc/apache2/cert/server.cert
      SSLCertificateKeyFile /etc/apache2/cert/server.key
</VirtualHost>
```

- **Check syntax error**
  - $sudo apache2ctl configtest

- **Restart apache**
  - $sudo service apache2 restart