

## Retrieve given Machine information using GetHostbyname()

### **1. Gethostbyname explanation**

- a. The project explores the use of Gethostbyname to get the ip address and name of a given machine for example given [www.bestbuy.com](http://www.bestbuy.com), the machine outputs the hostname and ip address and other information.
- b. In computer networks, www.bestbuy.com is not a machine itself but rather a domain name that points to a web server. This web server is a machine that hosts the website for Best Buy. When you access www.bestbuy.com, the request is directed to these servers, which then delivers the website content to your browser.
- c. What is gethost by name and how is it used:
  - i. gethostbyname translates human-readable hostnames (like www.bestbuy.com) into IP addresses (like 93.184.216.34), looks up the hostname in a host database
  - ii. a networked application that needs to connect to a remote server. would use gethostbyname to resolve the server's hostname to an IP address, which you can then use to establish a socket connection or When you enter a URL in a web browser, the browser uses functions like gethostbyname to resolve the domain name to an IP address before establishing a connection to the web server.
  - iii. The function prototype looks like this struct hostent  
\*gethostbyname(const char \*name);
  - iv. It takes the host name and returns a pointer to a hostent structure containing information about the host. If an error occurs, it returns NULL. the lookup is done in a hostname database
  - v. The hostent structure contains information about a host, including its name and IP addresses
  - vi. The inet\_ntoa function converts the network address to a human-readable string.
- d. Error checking for null hostent and no hostname given included

### **3. Installation instructions**

- In terminal
- Download the gcc compiler to compile c files
- Download nano to edit and create files

### **4. How to run code**

- Download and unzip folder
- Cd to folder directory

```
osboxes@osboxes:~$ cd NetworksAssig2
osboxes@osboxes:~/NetworksAssig2$ ls
main  main.c  main.o  makefile
```

- Run "make"

```
osboxes@osboxes:~/NetworksAssig2$ make
gcc -c main.c -I.
gcc -o main main.o -I.
```

- Run the executable

```
osboxes@osboxes:~/NetworksAssig2$ ./main www.bestbuy.com
Hostname: www.bestbuy.com
Host IP: 23.201.60.176
Aliases:
  www.bestbuy.com
  www.bestbuy.com.edgekey.net
Address type: AF_INET
Address length: 4 bytes
IP Addresses:
  23.201.60.176
execution time: 0.000526 seconds
osboxes@osboxes:~/NetworksAssig2$
```

## 5. Sources used:

[C Program to display hostname and IP address - GeeksforGeeks](#)

## 6. My output

```
osboxes@osboxes:~/NetworksAssig2$ ./main www.bestbuy.com
Hostname: www.bestbuy.com
Host IP: 23.201.60.176
Aliases:
  www.bestbuy.com
  www.bestbuy.com.edgekey.net
Address type: AF_INET
Address length: 4 bytes
IP Addresses:
  23.201.60.176
execution time: 0.000526 seconds
osboxes@osboxes:~/NetworksAssig2$
```