

# Practical Work 2

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## 1 Get domain name

Firstly, I declare a char array of length 200 to store the domain name.

```
char input[200];
```

### 1.1 Get domain name from user input

I ask user to input the domain name into the program

```
printf("Enter host domain name: ");  
scanf("%s", input);
```

## 2 Resolve domain name

By using the function "gethostbyname()", we can resolve the "domain".

### 2.1 Cannot find host address

If we obtain a wrong hostname, we can not find the address of the corresponding hostname.

```
if (host == NULL ) {  
    printf("Cannot find host address \n");  
    exit(1);  
}
```

## 2.2 Get the hostname address successfully

We get a pointer to "struct hostent", we make a loop through address list, by using "inet\_ntoa" we convert the addresses to char and then print it down

```
for ( int i = 0; host->h_addr_list[i] != NULL; i++ ){
    address = (struct in_addr *)(host->h_addr_list[i]);
    printf("Address : %s \n", inet_ntoa(*address));
}
```

## 3 Demonstration

### 3.1 Run program on my laptop

```
> vu@ubuntu:~$ ./a.out
Enter host domain name: www.stackoverflow.com
Address : 151.101.65.69
Address : 151.101.1.69
Address : 151.101.129.69
Address : 151.101.193.69
```

```
> vu@ubuntu:~$ ./a.out
Enter host domain name: www.facebook.com
Address : 157.240.211.35
```

```
> vu@ubuntu:~$ ./a.out
Enter host domain name: test
Cannot find host address
```

### 3.2 Run program on my VPS

```
> root@VuVps:~/netprog2022# ./a.out
Enter host domain name: www.stackoverflow.com
Address : 151.101.1.69
Address : 151.101.65.69
Address : 151.101.193.69
Address : 151.101.129.69
```

```
> root@VuVps:~/netprog2022# ./a.out
Enter host domain name: www.facebook.com
Address : 157.240.15.35
```

```
> root@VuVps:~/netprog2022# ./a.out
Enter host domain name: test
Cannot find host address
```

In my demonstration, there is a difference between the resolved IP address of facebook on my laptop ("157.240.211.35") and on my VPS ("157.240.15.35"). The reason is one domain name can map to multiple IP addresses and the difference in region can lead to different mapping.