

Embedded linux

Student Number : 3582590

Student Name: Tuyishime Aime Thierry

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Makefile

Makefile is a file containing a set of directives used by a make build automation tool to generate a target

How make file works Makefile

Makefile as it is defined it helps to generate multiple files to have one target i.e when making a file a user has to specify the target he/she wants and make file has to make that basic binary file and it always look for the name cause when you confuse names it keeps making a file which is not how it is supposed to be i.e we have to always keep track with the naming of our final target we want the image below shows before making the file

```
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$ ls
AcceptTCPConnection.c  cc.sh                  CreateTCPServerSocket.h  Makefile              TCPEchoServer-Thread.c
AcceptTCPConnection.h  CreateTCPClientSocket.c  getaddrinfo.c           TCPEchoClient.c
Auxiliary.c            CreateTCPClientSocket.h  HandleTCPClient.c       TCPEchoServer.c
Auxiliary.h            CreateTCPServerSocket.c  HandleTCPClient.h       TCPEchoServer-Fork.c
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$
```

The image below shows the result of the

```
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$ make
gcc -Wall -c -o TCPEchoClient.o TCPEchoClient.c
TCPEchoClient.c: In function 'main':
TCPEchoClient.c:18:17: warning: unused variable 'bytesRcvd' [-Wunused-variable]
    int     bytesRcvd;          /* Bytes read in single recv() */
                  ^
TCPEchoClient.c:17:17: warning: variable 'echoStringLen' set but not used [-Wunused-but-set-variable]
    int     echoStringLen;      /* Length of string to echo */
                  ^
TCPEchoClient.c:16:17: warning: unused variable 'echoBuffer' [-Wunused-variable]
    char     echoBuffer[RCVBUFSIZE]; /* Buffer for received string */
                  ^
gcc -Wall -c -o Auxiliary.o Auxiliary.c
gcc -Wall -c -o CreateTCPClientSocket.o CreateTCPClientSocket.c
gcc -o TCPEchoClient TCPEchoClient.o Auxiliary.o CreateTCPClientSocket.o -lrt
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$
```

To see if the makefile is well done we keep making multiple times without making any change until we see the feedback below

```
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$ make
make: Nothing to be done for 'all'.
aimethierry@aimethierry-virtual-machine:~/Desktop/school/el/EL_socket$
```

Reference

<https://github.com/aimethierry/EmbeddedLinux/tree/makefile>