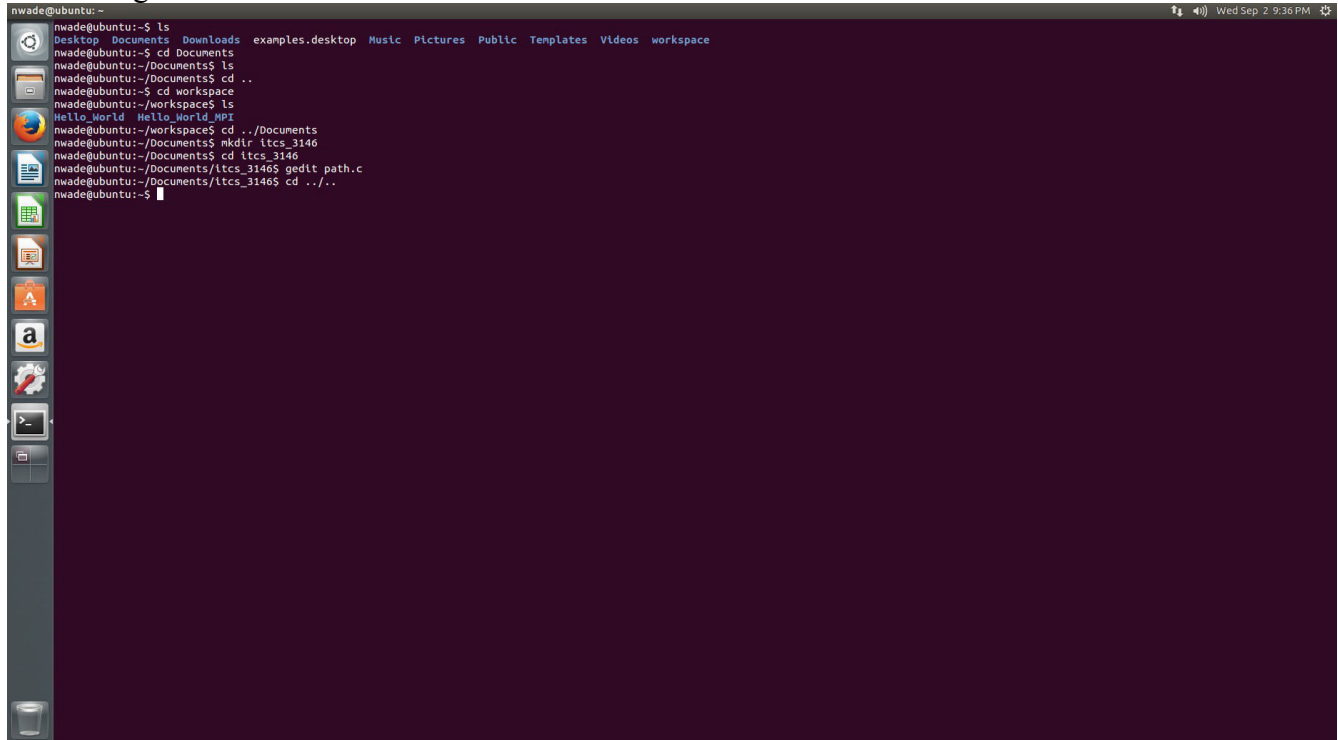


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1. Running Ubuntu environment:



The screenshot shows an Ubuntu desktop environment. A terminal window is open, displaying the following commands and output:

```
nwade@ubuntu:~$ ls
Desktop  Documents  Downloads  examples.desktop  Music  Pictures  Public  Templates  Videos  workspace
nwade@ubuntu:~$ cd Documents
nwade@ubuntu:~/Documents$ ls
nwade@ubuntu:~/Documents$ cd ..
nwade@ubuntu:~$ cd workspace
nwade@ubuntu:~/workspace$ ls
Hello_World  Hello_World_MPI
nwade@ubuntu:~/workspace$ cd ../Documents
nwade@ubuntu:~/Documents$ mkdir itcs_3146
nwade@ubuntu:~/Documents$ cd itcs_3146
nwade@ubuntu:~/Documents/itcs_3146$ gedit path.c
nwade@ubuntu:~/Documents/itcs_3146$ cd ../..
nwade@ubuntu:~$
```

The desktop background is dark purple. The left sidebar contains icons for Dash, Home, Firefox, LibreOffice Writer, LibreOffice Calc, LibreOffice Impress, Amazon, and a terminal icon. The top status bar shows the date and time as "Wed Sep 2 9:36 PM".

2. Running sample C program through terminal

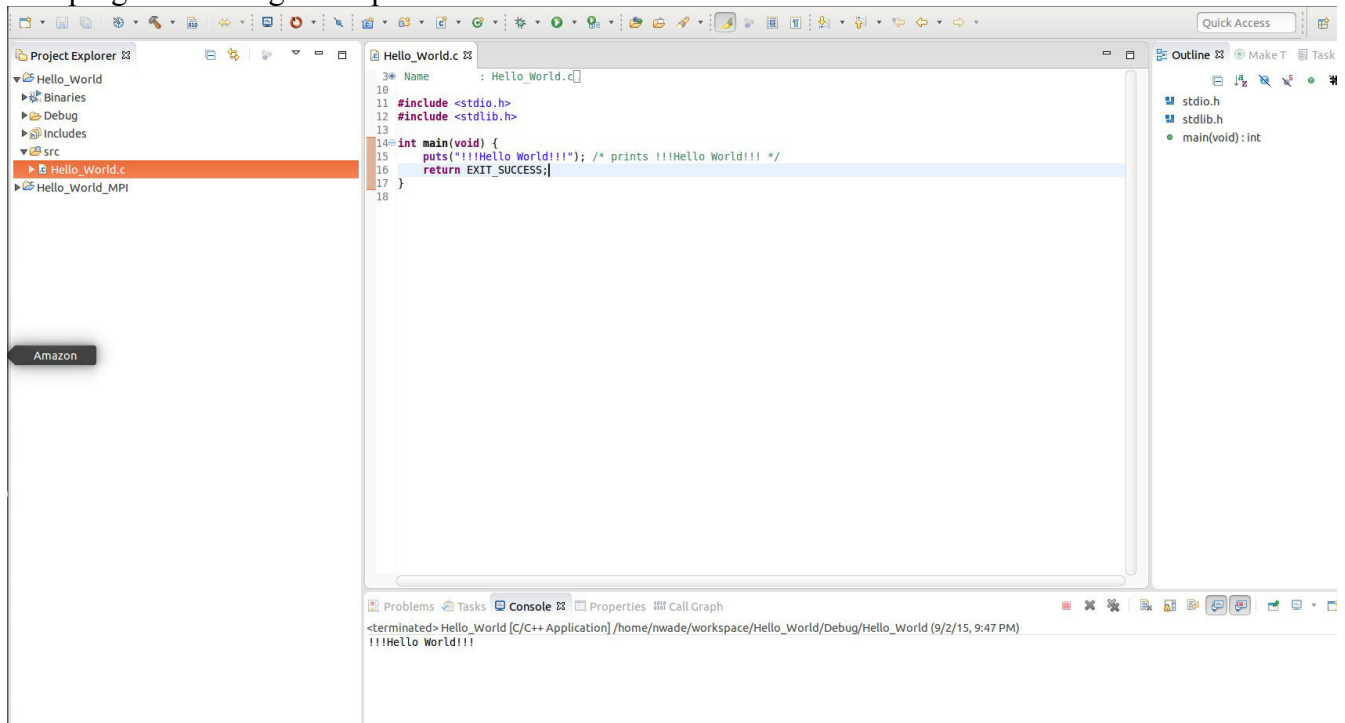


The screenshot shows a terminal window with the following commands and output:

```
nwade@ubuntu: ~/Documents/itcs_4145
nwade@ubuntu:~/Documents/itcs_4145$ gcc hello.c -o hello
nwade@ubuntu:~/Documents/itcs_4145$ ./hello
Hello World
nwade@ubuntu:~/Documents/itcs_4145$
```

The terminal window is titled "nwade@ubuntu: ~/Documents/itcs_4145". The desktop background is dark purple. The left sidebar contains icons for Dash, Home, Firefox, LibreOffice Writer, LibreOffice Calc, and a terminal icon. The top status bar shows the date and time as "Wed Sep 2 9:36 PM".

3. C program running in eclipse



4. Dynamically allocated memory

```
nwade@ubuntu:~/Documents/itcs_4145$ ./task_3
Enter a size: 200
```

```

0      1      2      3      4      5      6      7      8      9
10     11     12     13     14     15     16     17     18     19
20     21     22     23     24     25     26     27     28     29
30     31     32     33     34     35     36     37     38     39
40     41     42     43     44     45     46     47     48     49
50     51     52     53     54     55     56     57     58     59
60     61     62     63     64     65     66     67     68     69
70     71     72     73     74     75     76     77     78     79
80     81     82     83     84     85     86     87     88     89
90     91     92     93     94     95     96     97     98     99
100    101    102    103    104    105    106    107    108    109
110    111    112    113    114    115    116    117    118    119
120    121    122    123    124    125    126    127    128    129
130    131    132    133    134    135    136    137    138    139
140    141    142    143    144    145    146    147    148    149
150    151    152    153    154    155    156    157    158    159
160    161    162    163    164    165    166    167    168    169
170    171    172    173    174    175    176    177    178    179
180    181    182    183    184    185    186    187    188    189
190    191    192    193    194    195    196    197    198    199
nwade@ubuntu:~/Documents/itcs_4145$
```

5. Connect to server through ssh

```
You need to change your password.

For the first password prompt, remember to enter "changeme" without quotes.

Changing password for user nwade3.
Enter login(LDAP) password:
New password:
Retype new password:
LDAP password information changed for nwade3
passwd: all authentication tokens updated successfully.

We need to set up some things so you can SSH between
nodes securely from your account.

Generating public/private rsa key pair.
Your identification has been saved in /nfs-home/nwade3/.ssh/id_rsa.
Your public key has been saved in /nfs-home/nwade3/.ssh/id_rsa.pub.
The key fingerprint is:
02:d4:41:f9:ff:5a:ed:1a:e0:37:a7:b9:82:67:5b:9b nwade3@cci-gridgw.uncc.edu
The key's randomart image is:
+--[ RSA 2048 ]-----+
|      .ooo           |
|      o             |
|  Amazon             |
|      . S..         |
|      . . . .       |
|      . . . * o      |
|      . ++.X        |
|      oo+Eo.        |
+-----+

All done!

You should now be able to run the following commands
to connect to the other three nodes:

ssh cci-grid05
ssh cci-grid07
ssh cci-grid08

Enjoy!
```

6. Create and run hello.c on server

```
[nwade3@cci-gridgw ~]$ vim hello.c
[nwade3@cci-gridgw ~]$ gcc hello.c -o hello
[nwade3@cci-gridgw ~]$ ./hello
Hello World![nwade3@cci-gridgw ~]$
```