Basic structure of a C programme

Allows you to input/output information

The 'main' function

All the code in here will (hopefully!) run once you compile and execute your file

```c
#include <stdio.h>

int main()
{
    int i = 0;



}
```

Your code goes here

Good practice to indent inside the curly brackets (tab button on keyboard)
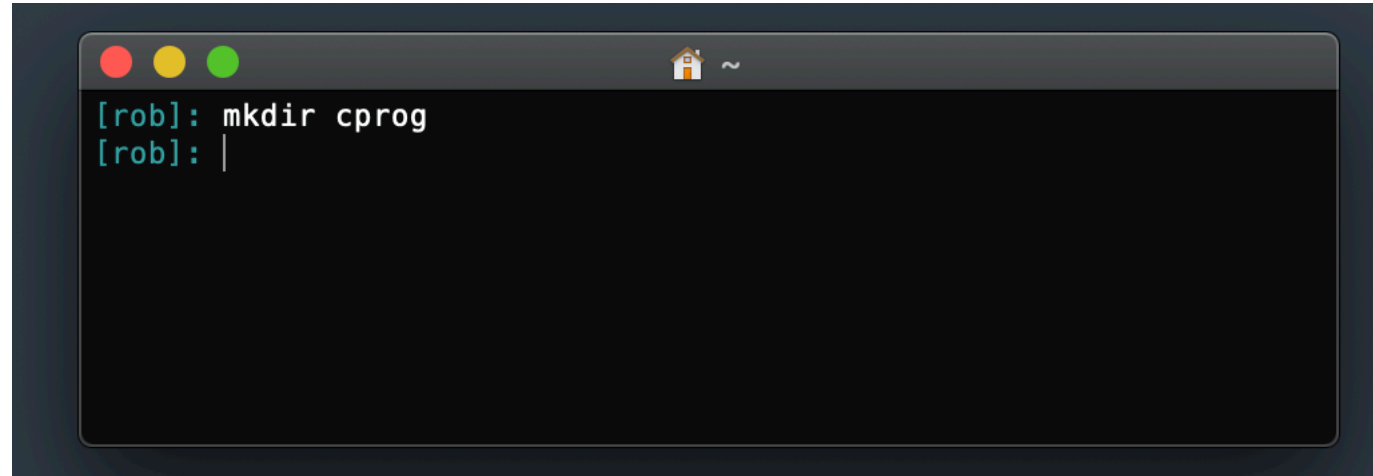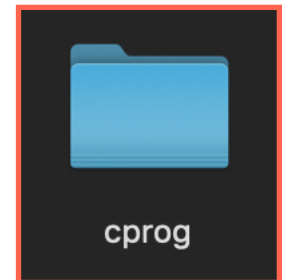
Declare new integer 'i'

Initialize with a value 0

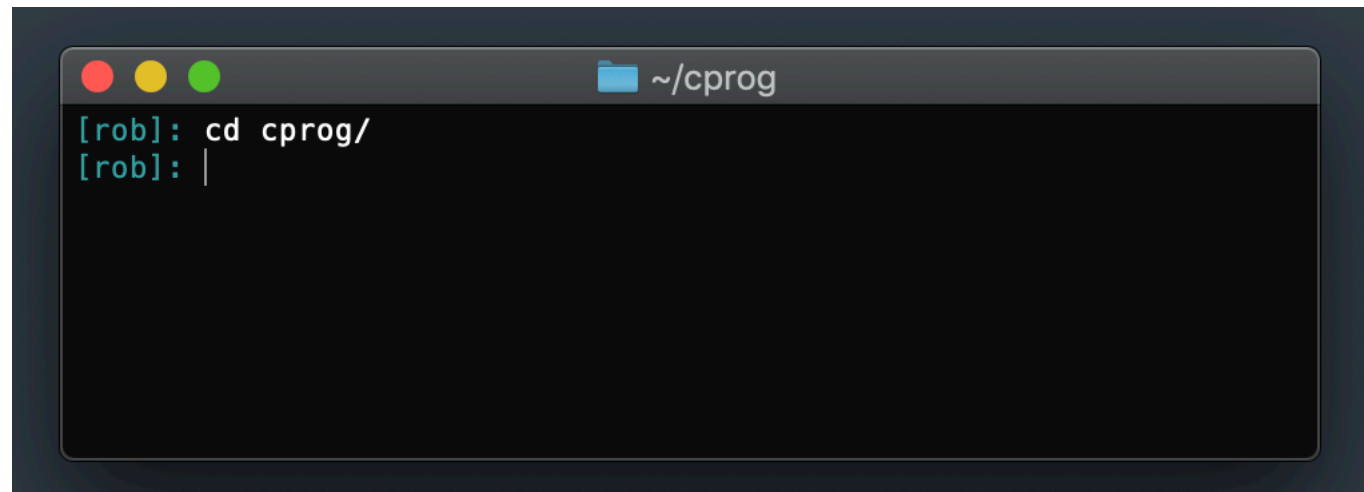**Starting your programme**
1) SSH on to one of the maths servers

2) Make a new directory with the **mkdir** command to save your assignments:

```
[rob]: mkdir cprog
[rob]:
```
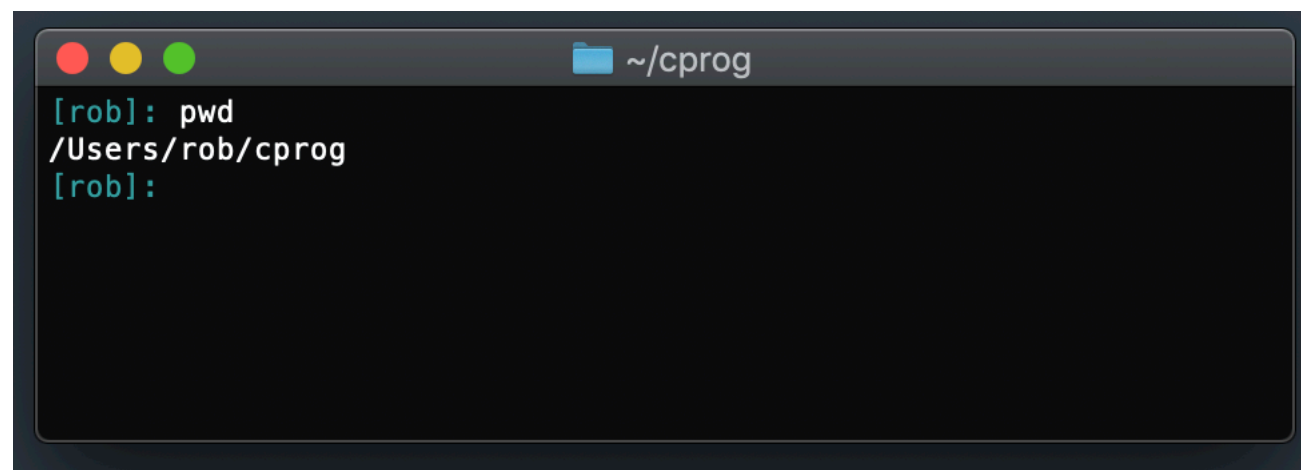
3) Move into this **directory** with the **cd** command:

```
[rob]: cd cprog/
[rob]:
```
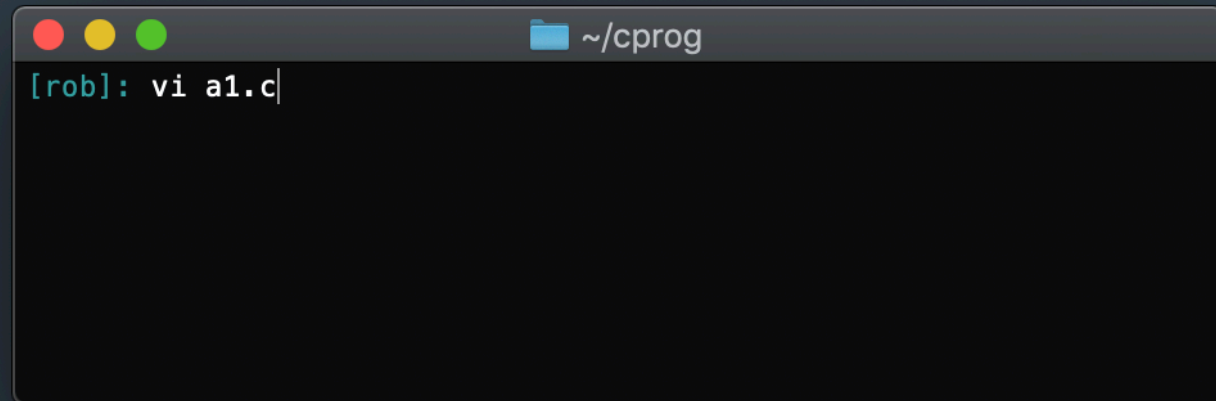
If you are unsure what directory you are in, you can print it out with the **pwd** command:
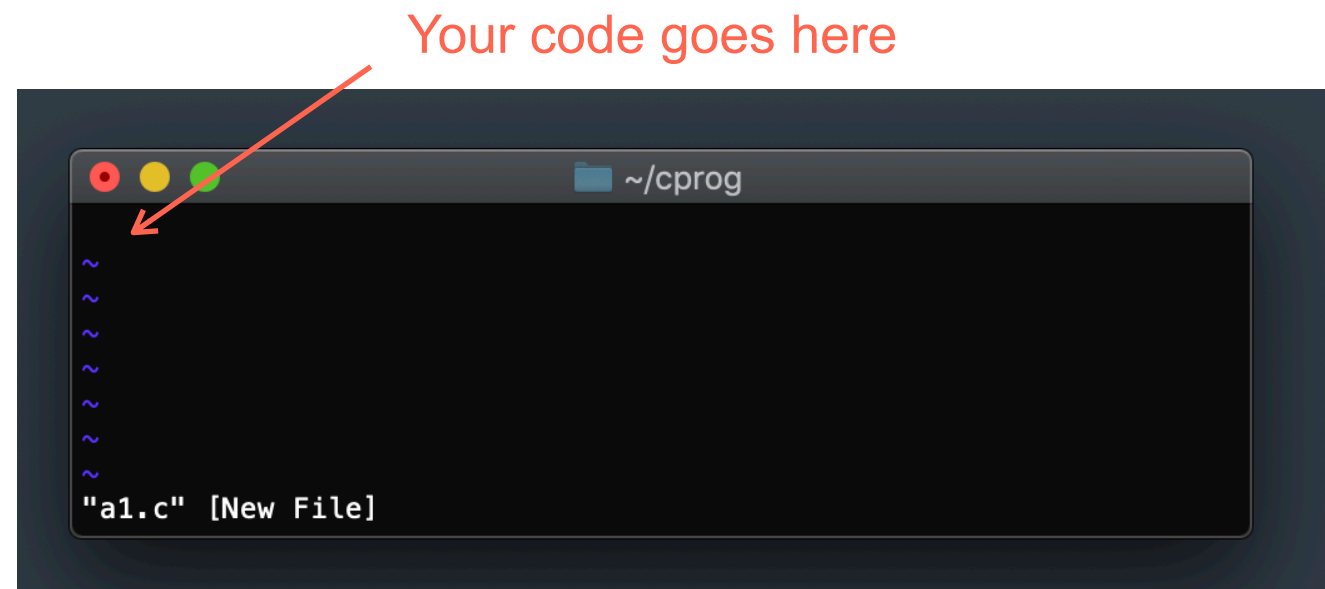
```
[rob]: pwd
/Users/rob/cprog
[rob]:
```

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Starting your programme

4) Create a new C file with the **vi** command:

Your code goes here

```
● ● ●          📁 ~/cprog
[rob]: vi a1.c
```
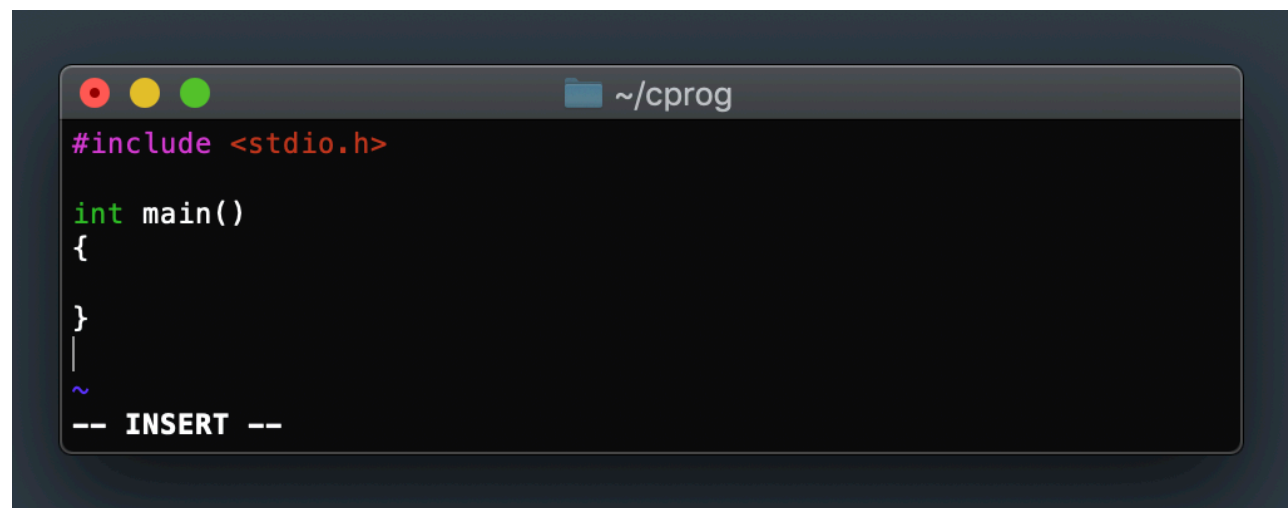
```
● ● ●          📁 ~/cprog


~
~
~
~
~
~
~
"a1.c" [New File]
```
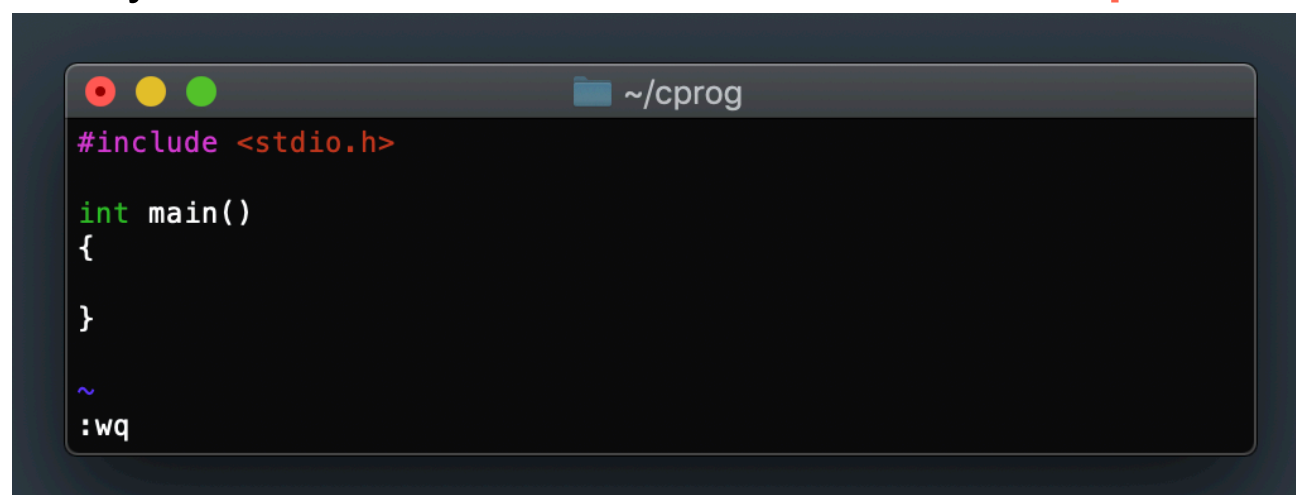
5) To write to the file type **i** to enter **Insert mode**:

```
● ● ●          📁 ~/cprog
#include <stdio.h>

int main()
{

}

~
-- INSERT --
```

6) To save your work and exit the editor first hit **Escape**, then type **:wq** to hit **Enter**:

```
● ● ●          📁 ~/cprog
#include <stdio.h>

int main()
{

}

~
:wq
```
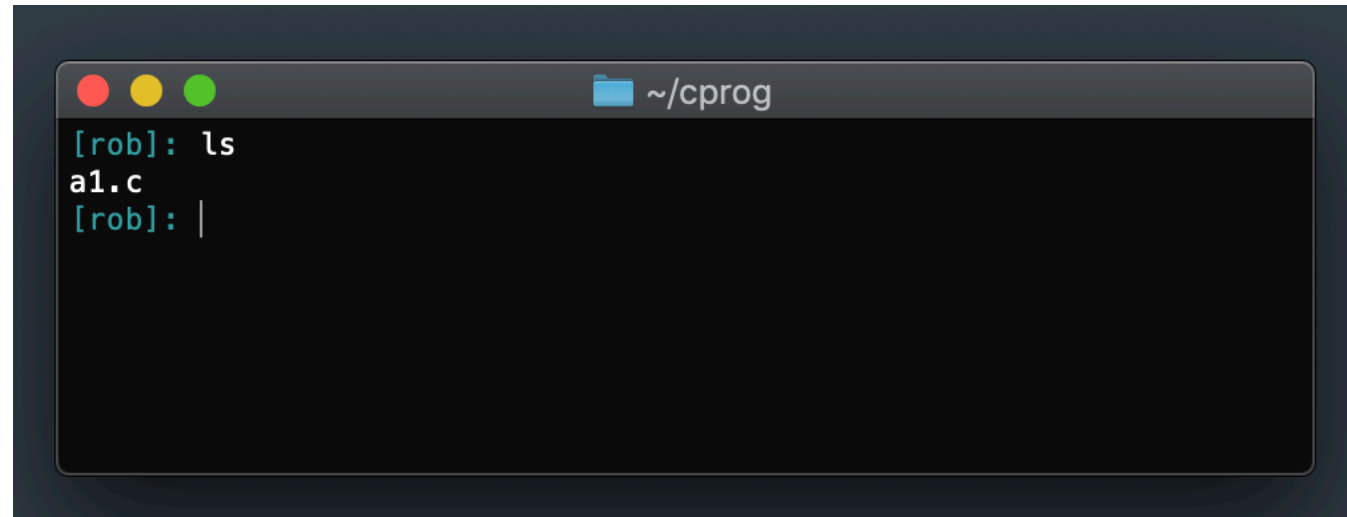
Note: you can also use a text editor of your choice on your local machine and then paste the code into a file on the maths server.
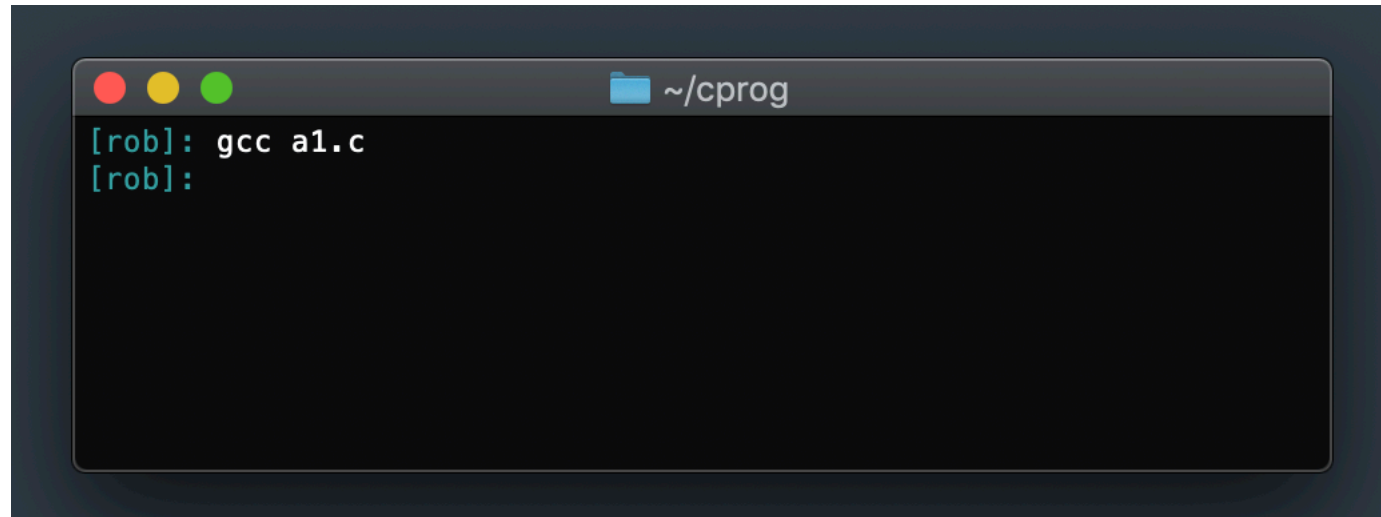
Robert Kavanagh (`kavanar5@tcd.ie`)

Compiling your code

7) You can see a **list of your files** with the **ls** command
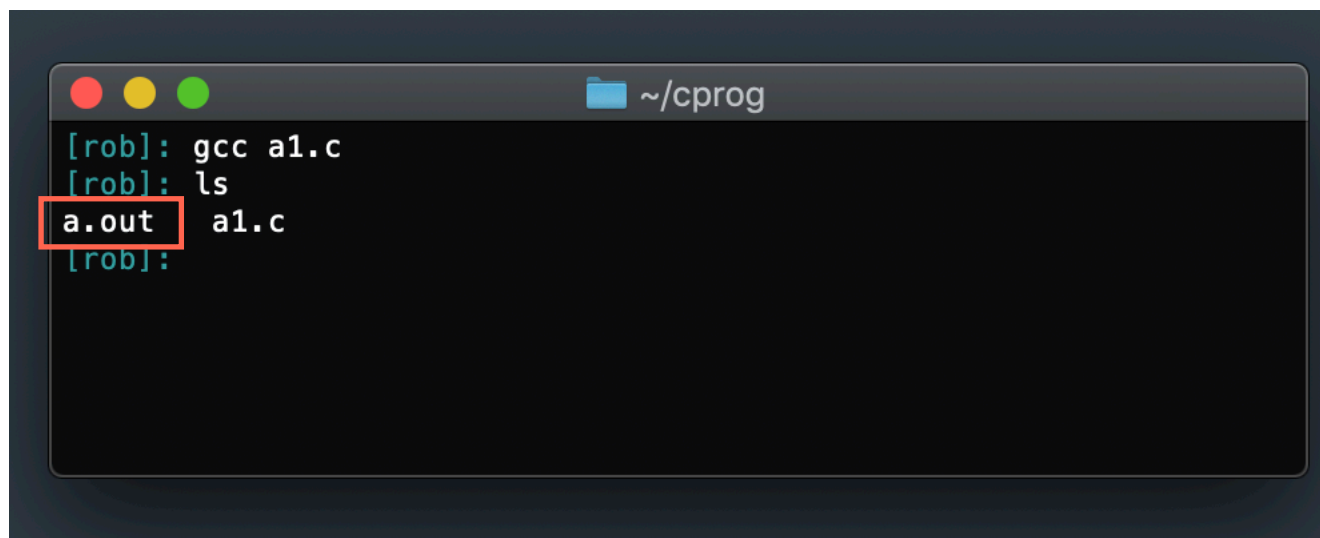
8) To **compile** your code use the **gcc** command

If this works you will see a file called **a.out** in your folder. This is called the **executable**. You can check this with the **ls** command:
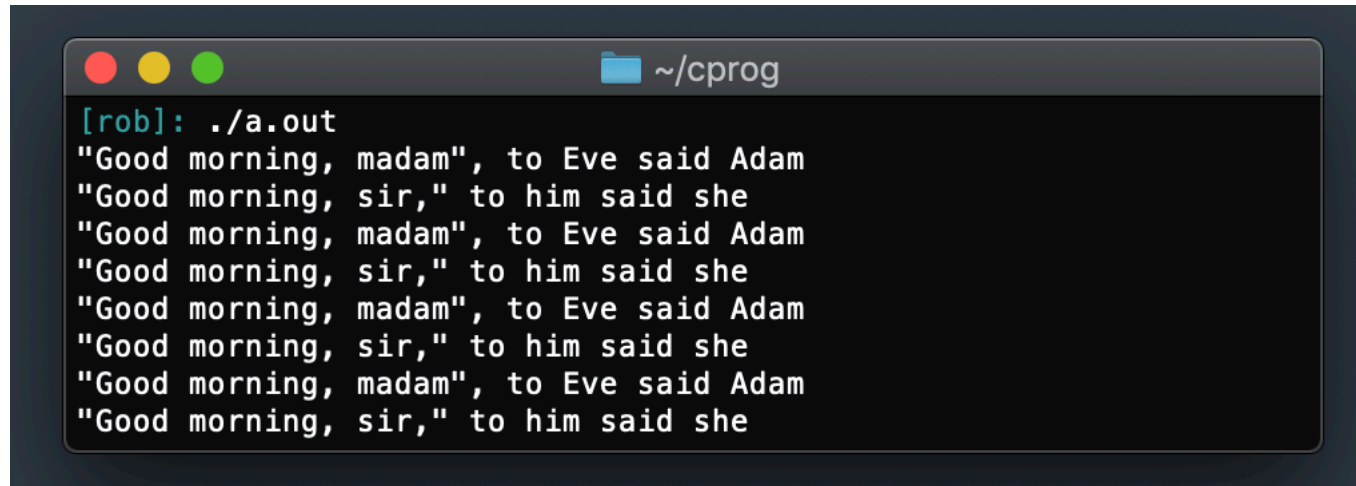

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Executing your code

9) To run your executable type the command **./a.out**

```
[rob]: ./a.out
"Good morning, madam", to Eve said Adam
"Good morning, sir," to him said she
"Good morning, madam", to Eve said Adam
"Good morning, sir," to him said she
"Good morning, madam", to Eve said Adam
"Good morning, sir," to him said she
"Good morning, madam", to Eve said Adam
"Good morning, sir," to him said she
```

~/cprog

Refer to your notes if you are stuck!

Webpage:

`www.maths.tcd.ie/~odunlain/u11601/`

Mathematics course U11601 (C programming) Michaelmas 2020

Course slogan μηδεις 'ανυπολογιστος 'εντεστιν
(Thanks to P. Karageorgis.)

C handbook and class notes

C programming handbook (last update 1/10/19)

Class notes

Assignments

First programming assignment

Data for programming assignments

submit-work: screenshots *But replace 1266 by u11601 throughout.*
The *nix Command Line, by Fionn Fitzmaurice

Quiz answers, current term

May 2018 final exam **WITH ANSWERS**

April 2019 final exam