

Hands-on Session

- ◀ Boot Linux
- ◀ Connect to Linux via USB-to-UART and Putty
- ◀ Compile and run a simple program

Exercise 7: Talking to Linux on the DE1-SoC

- ◀ Compile and execute the “Hello World” program

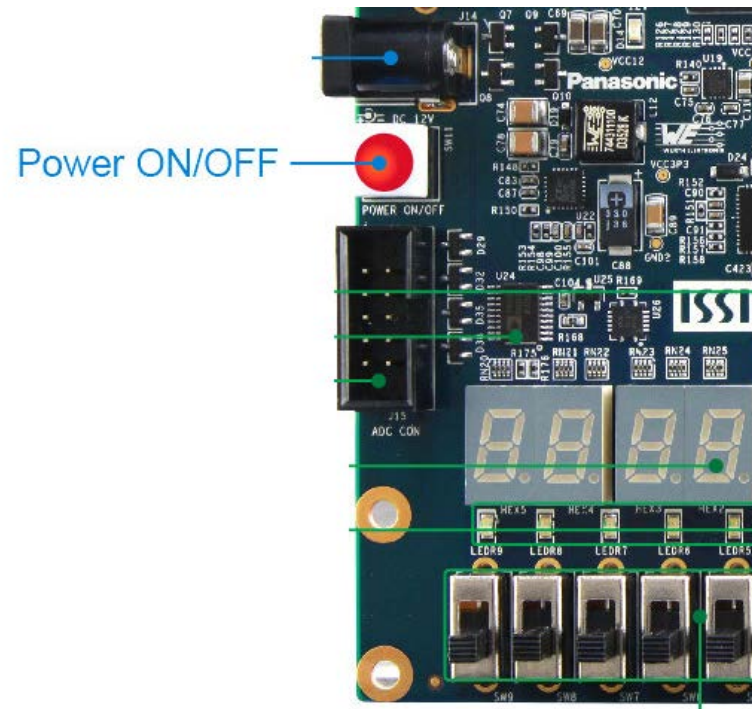
```
#include <stdio.h>

int main(void){

    printf("Hello World!\n");

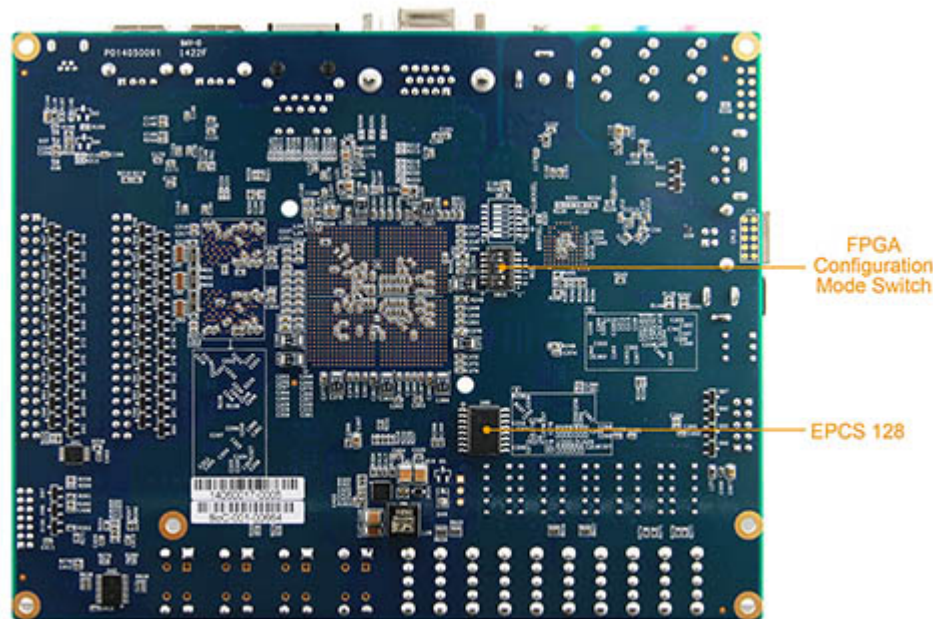
    return 0;
}
```

Step 1: Power Off the DE1-SoC

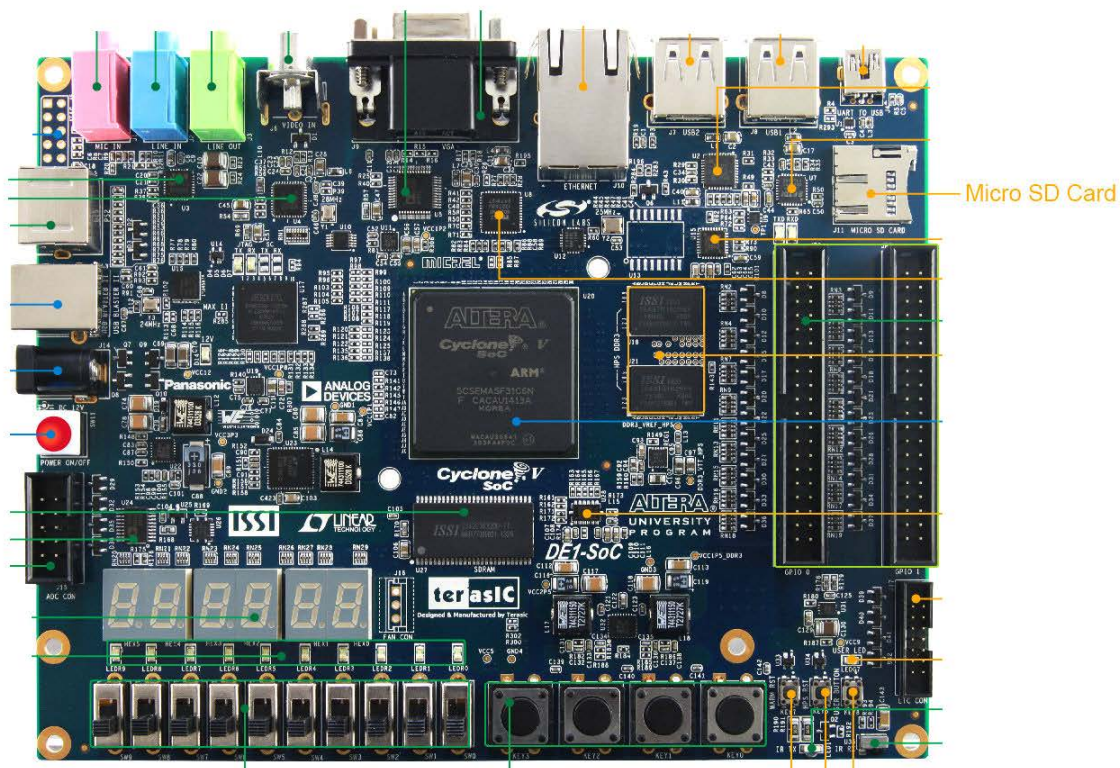


Step 2: Set MSEL to `b01010 on the DE1-SoC

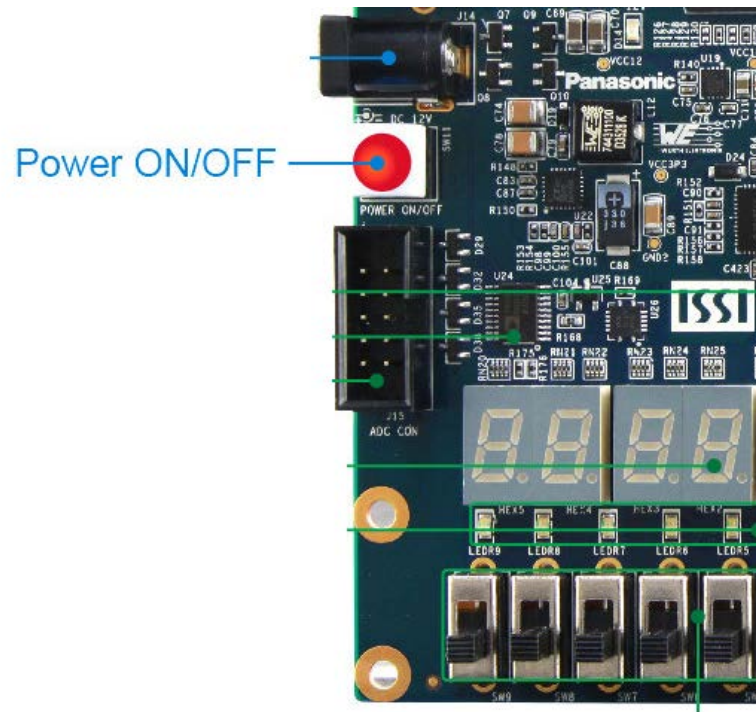
- ◀ Enables ARM to be able to configure the FPGA



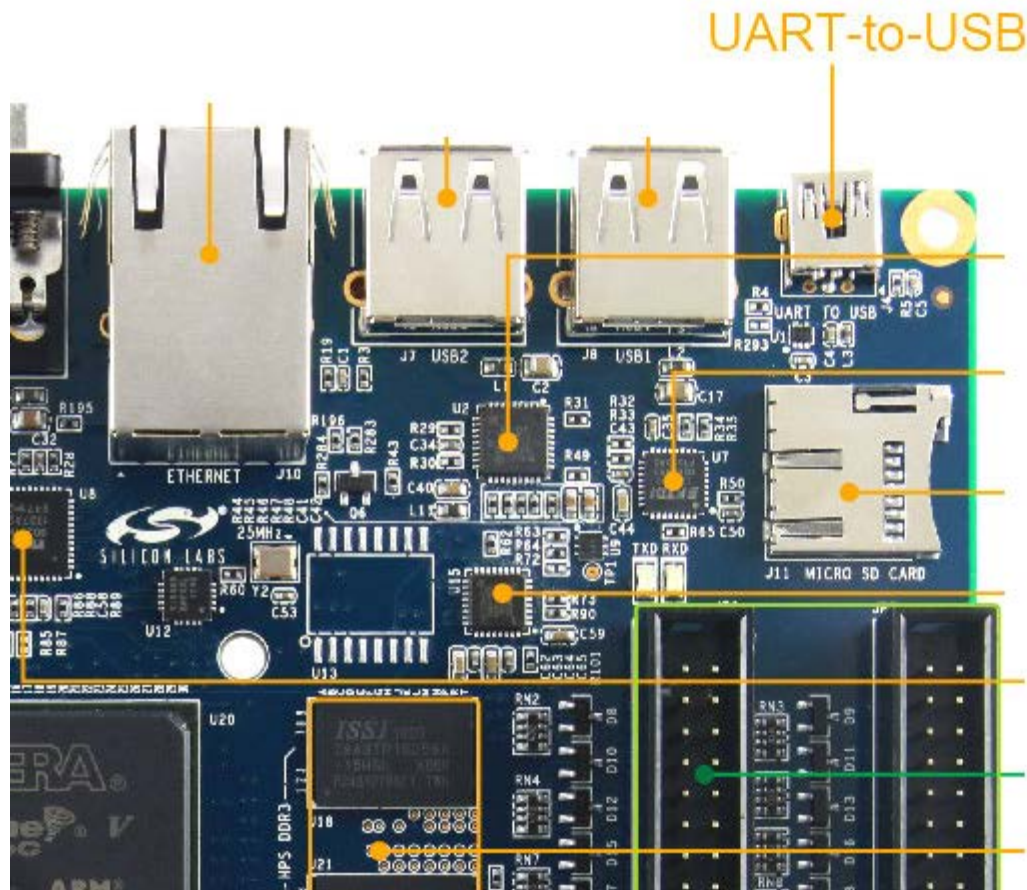
Step 3: Insert Linux SD Card



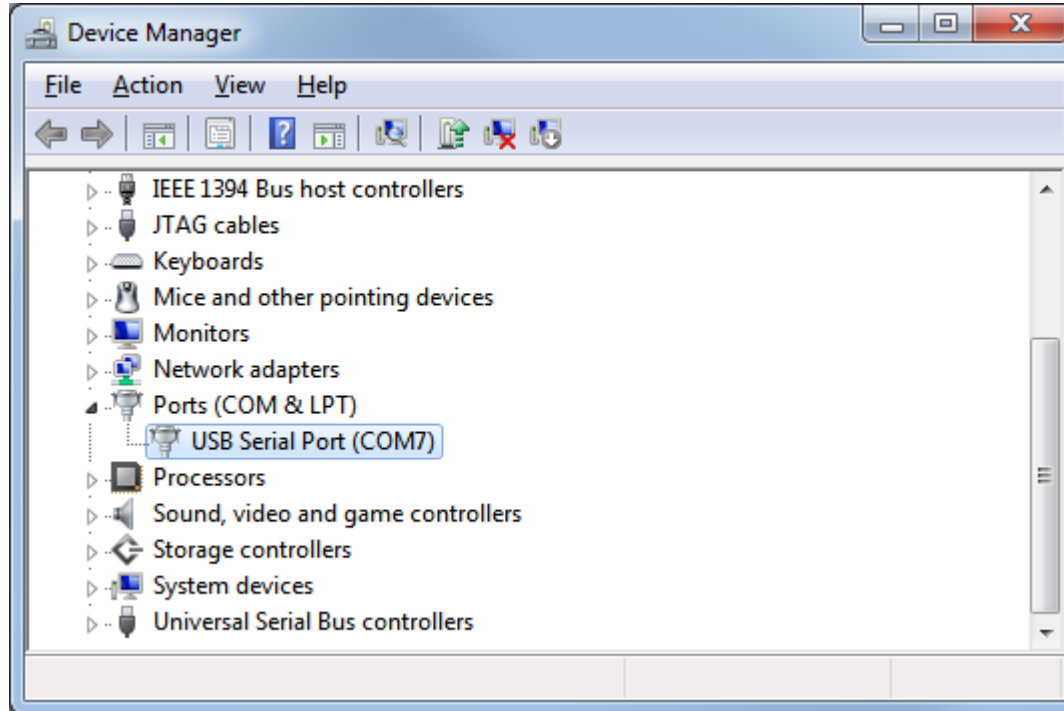
Step 4: Power On the DE1-SoC



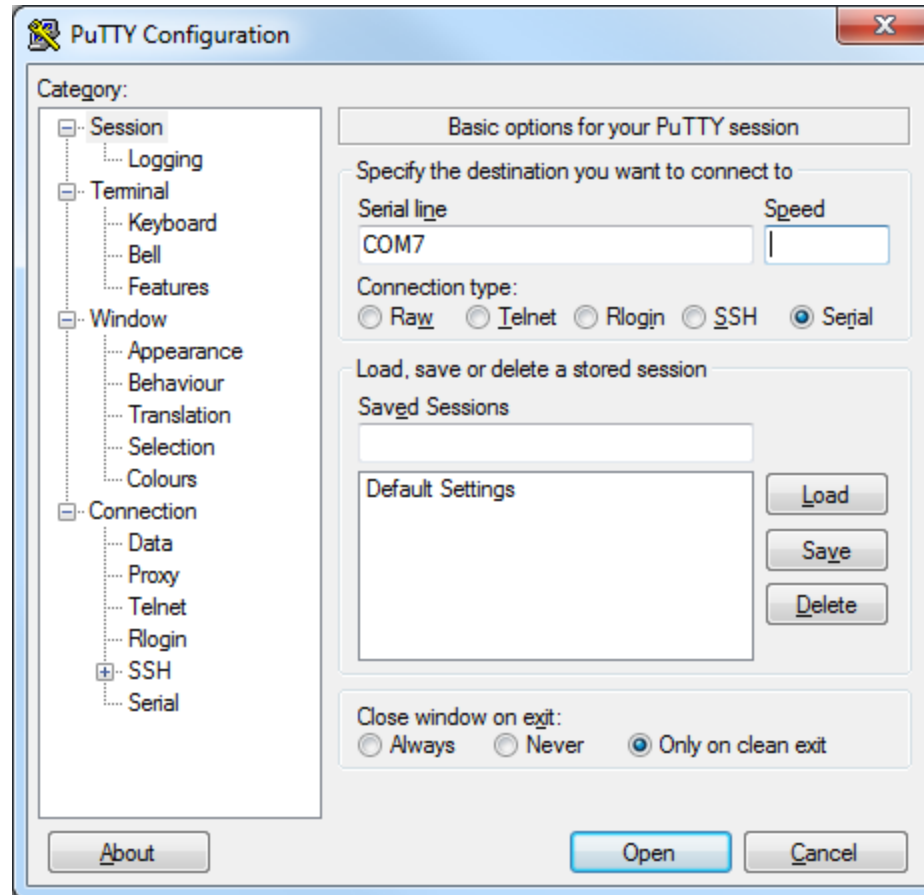
Step 5: Ensure the UART-to-USB is Connected to the Host Computer



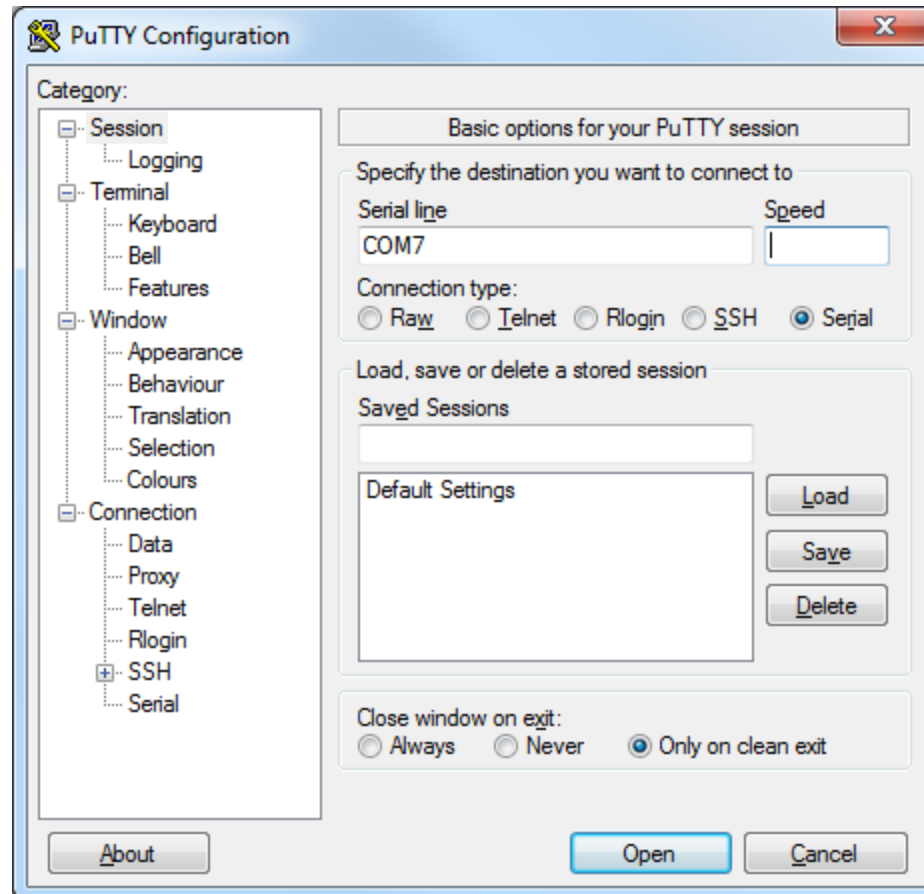
Step 6: Check Device Manager for COM Port Settings



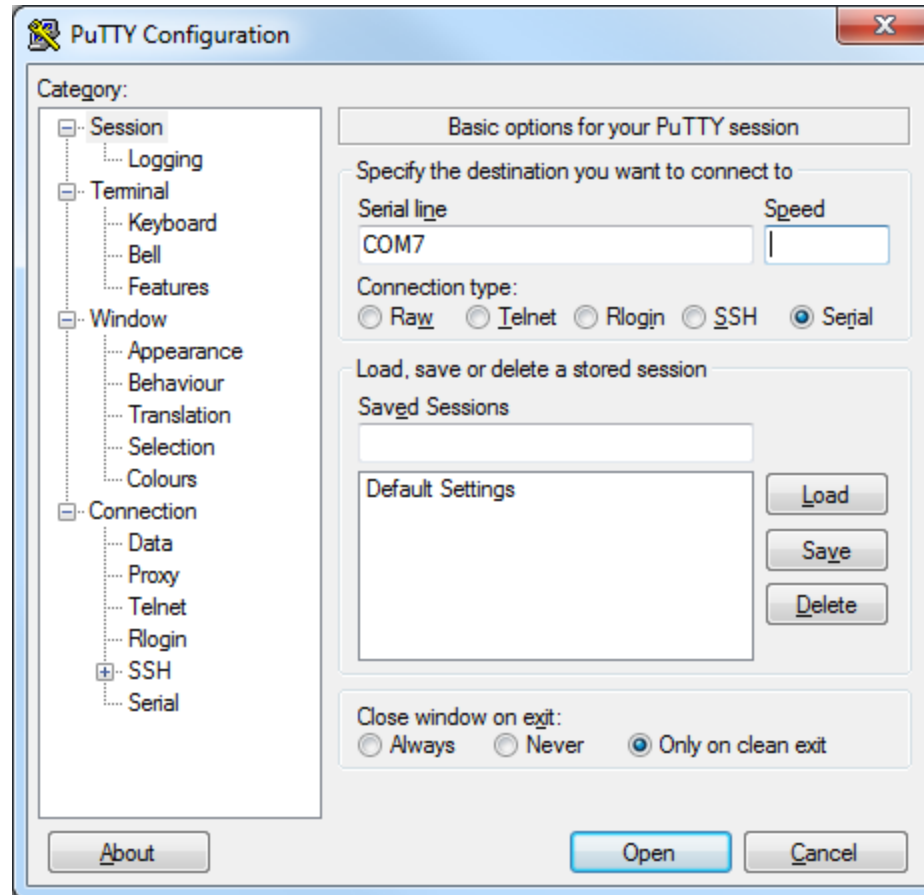
Step 7: Open Putty



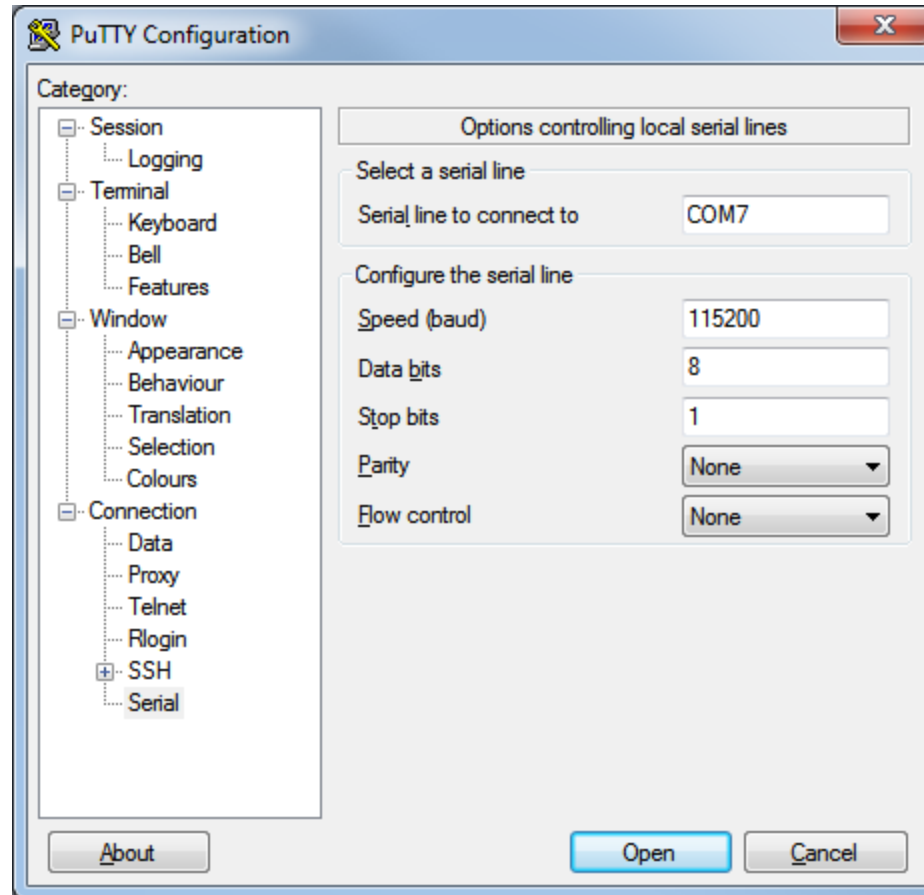
Step 8: Select 'Serial' Connection Type



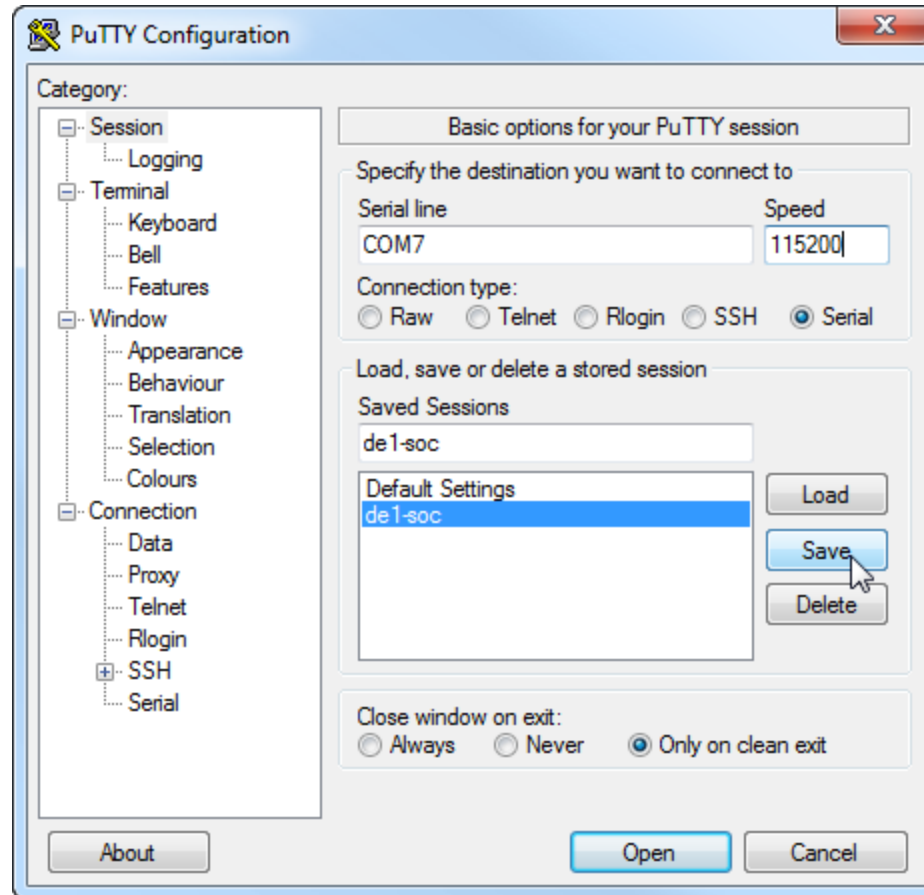
Step 9: Enter COM Port Name in 'Serial line' Box



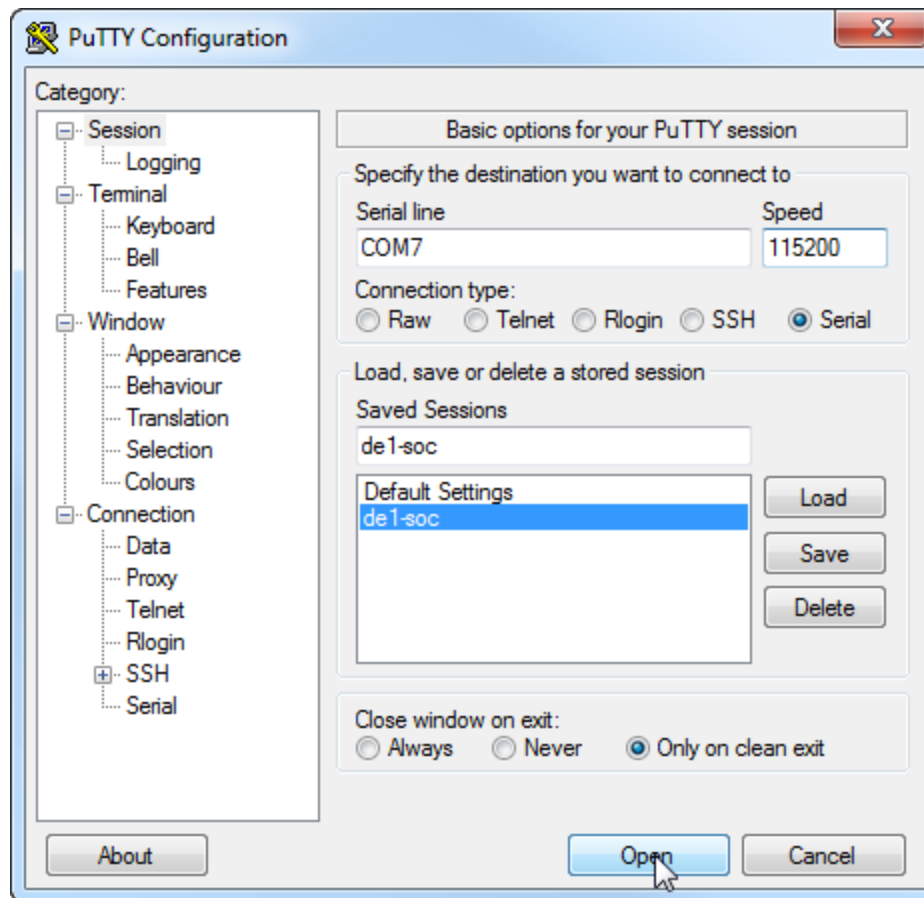
Step 10: Enter Serial Port Settings as shown



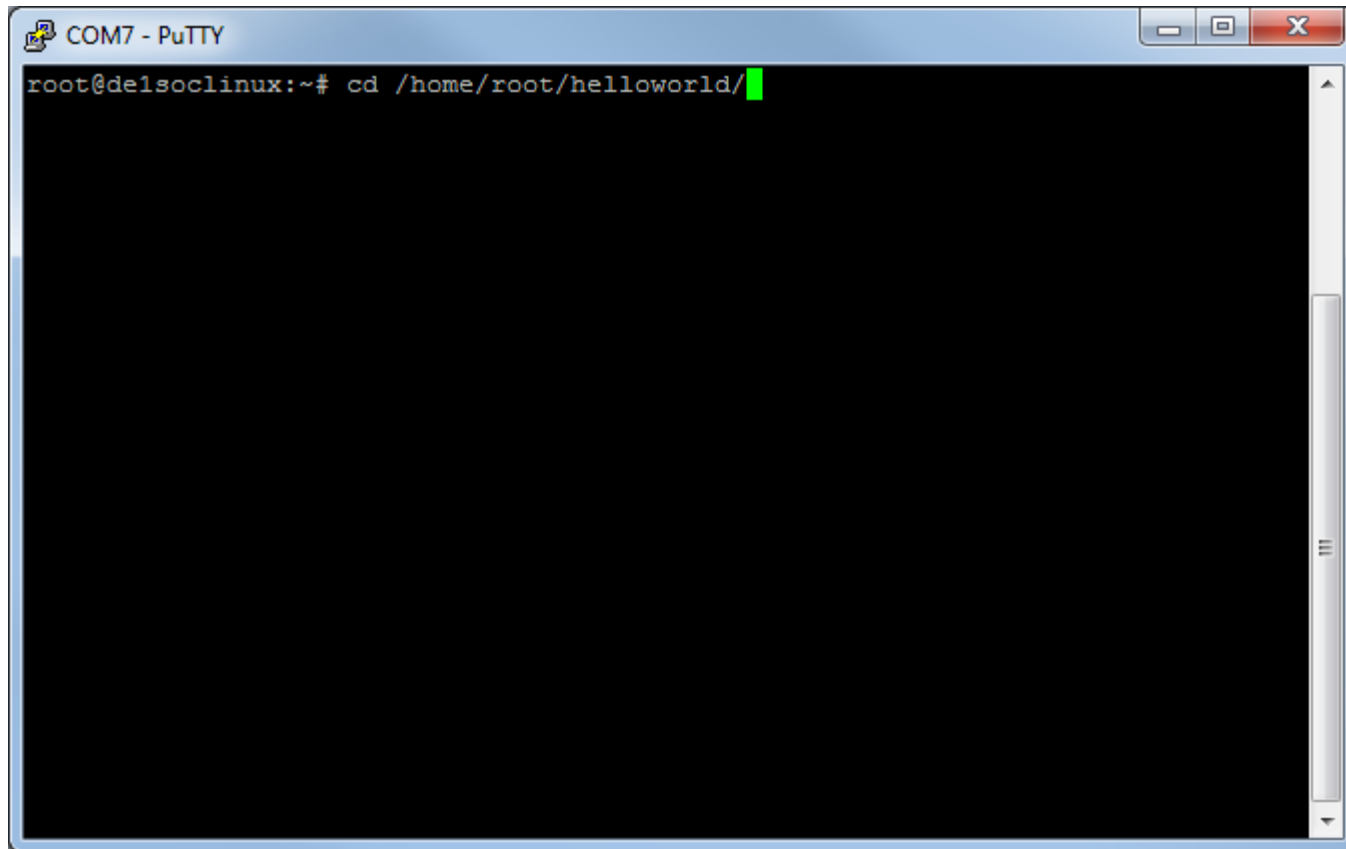
Step 11: Save Session for Later Use



Step 12: Open Connection



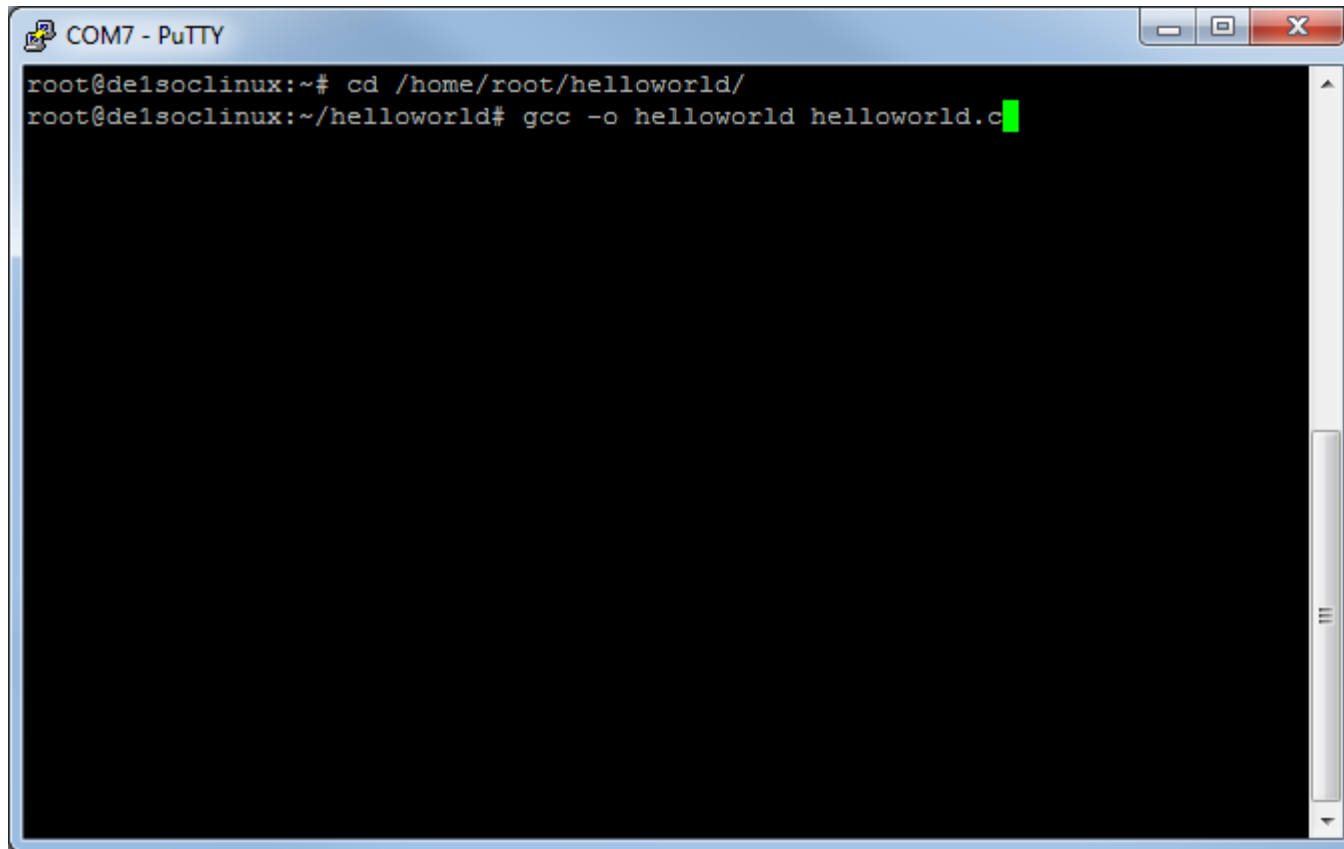
Step 13: In Putty: Change to the Example Directory



A screenshot of a PuTTY terminal window titled "COM7 - PuTTY". The terminal shows a command prompt "root@delsoclinux:~#" followed by the command "cd /home/root/helloworld/" and a green cursor. The terminal has a black background and a white border. The window title bar includes standard Linux window controls (minimize, maximize, close) and a small icon on the left.

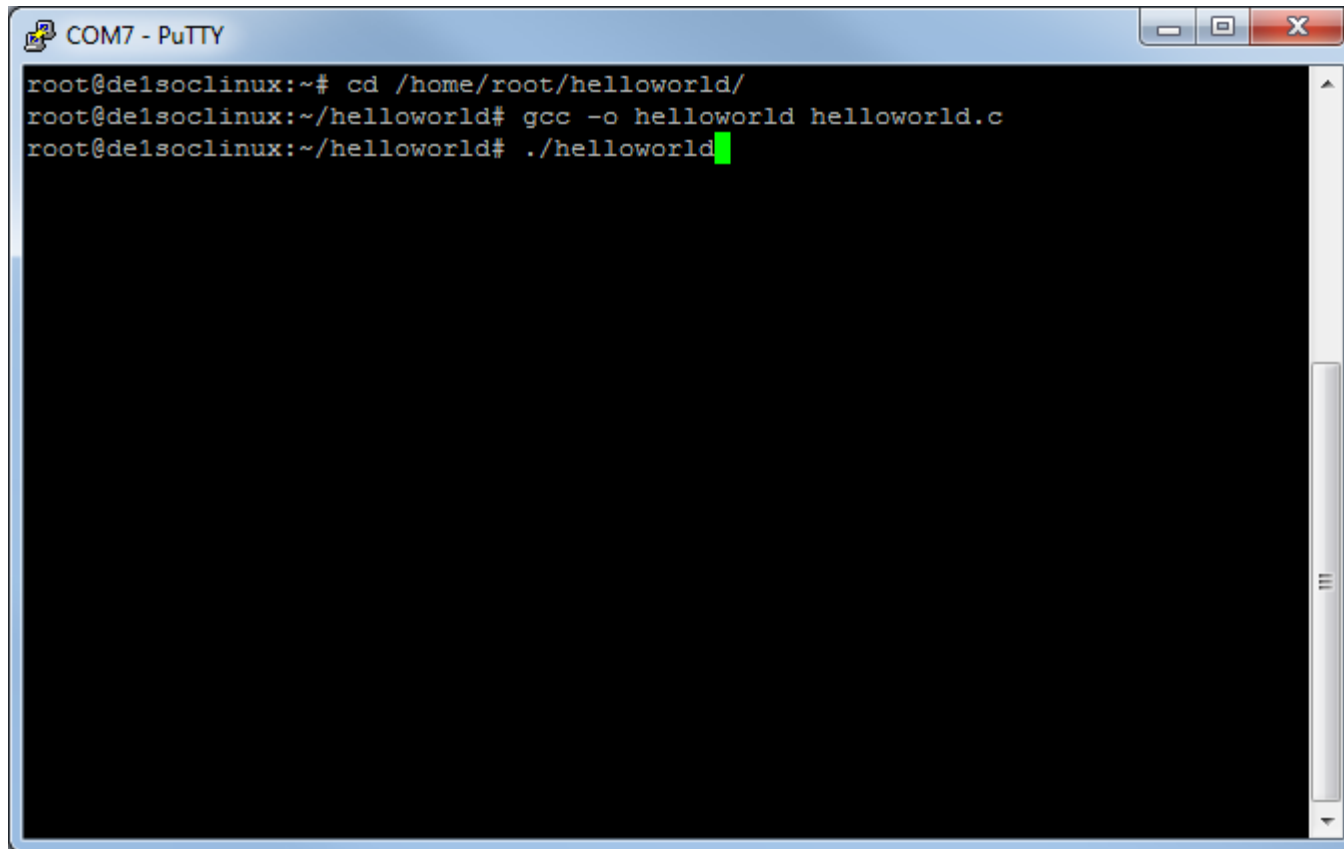
```
COM7 - PuTTY
root@delsoclinux:~# cd /home/root/helloworld/
```

Step 14: Compile the Sample Program



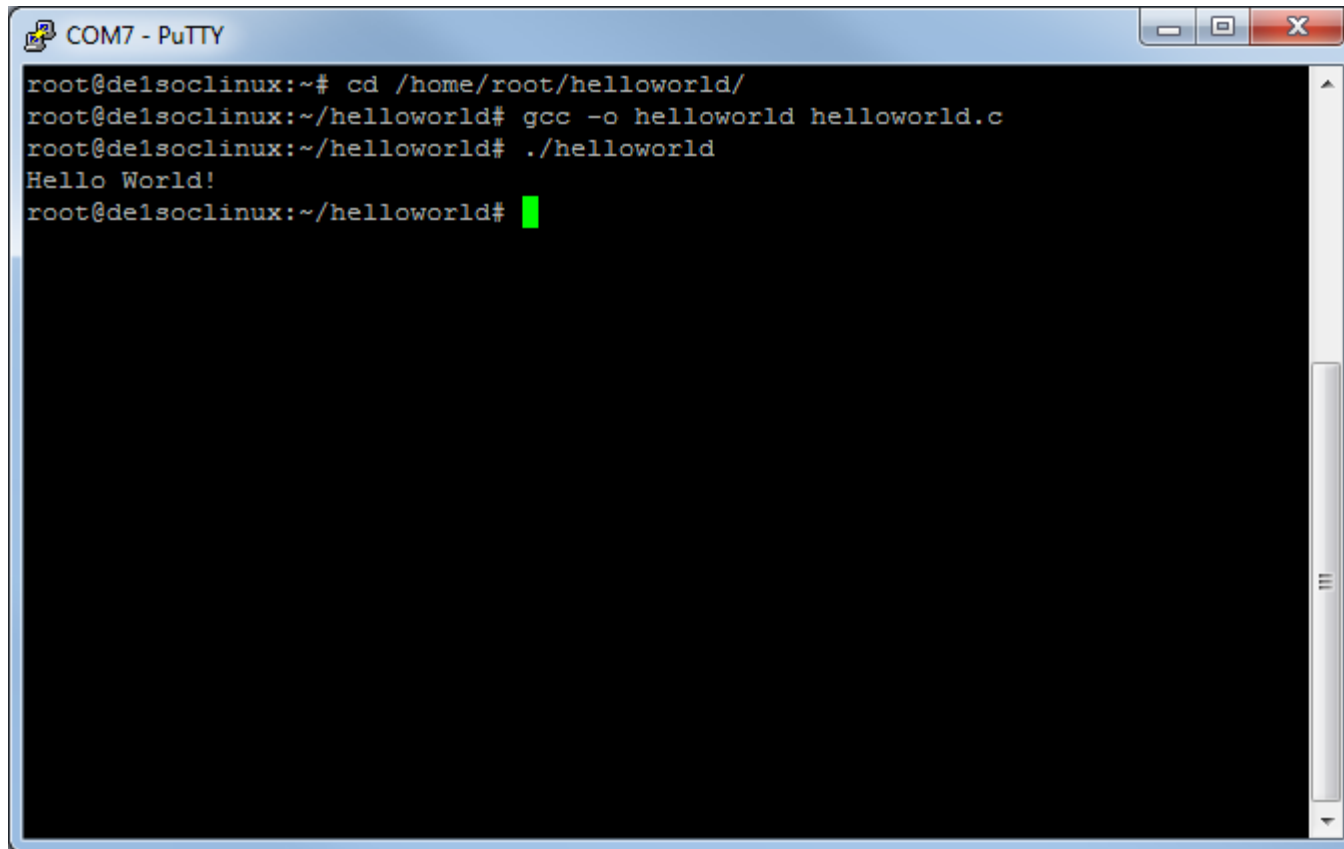
```
COM7 - PuTTY
root@delsoclinux:~# cd /home/root/helloworld/
root@delsoclinux:~/helloworld# gcc -o helloworld helloworld.c
```

Step 15: Execute the Sample Program



```
COM7 - PuTTY
root@de1soclinux:~# cd /home/root/helloworld/
root@de1soclinux:~/helloworld# gcc -o helloworld helloworld.c
root@de1soclinux:~/helloworld# ./helloworld
```

Step 16: See the Output



```
COM7 - PuTTY
root@deisoclinux:~# cd /home/root/helloworld/
root@deisoclinux:~/helloworld# gcc -o helloworld helloworld.c
root@deisoclinux:~/helloworld# ./helloworld
Hello World!
root@deisoclinux:~/helloworld#
```