**Compiling and Running CUDA Programs**

**1. Write a CUDA Program**

Save the following code in a file named hello.cu:

#include <stdio.h>

\_\_global\_\_ void helloFromGPU() {

printf("Hello from GPU thread %d\n", threadIdx.x);

}

int main() {

helloFromGPU<<<1, 5>>>();

cudaDeviceSynchronize();

return 0;

}

**2. Compile Using nvcc**

nvcc is the NVIDIA CUDA Compiler that comes with the CUDA Toolkit.

Open a terminal and run:

nvcc hello.cu -o hello

This compiles hello.cu into an executable named hello.

**3. Run the Executable**

Now run the compiled program:

./hello

**4. Expected Output**

Hello from GPU thread 0

Hello from GPU thread 1

Hello from GPU thread 2

Hello from GPU thread 3

Hello from GPU thread 4

**Notes:**

* Ensure the **CUDA Toolkit is installed** and nvcc is in your system path.
* You can verify the installation with:

nvcc --version

* Use cudaDeviceSynchronize() to wait for the GPU to complete execution before the host exits.