CUDA - hello world!

The following program take the string "Hello", send that plus the array 15, 10, 6, 0, -11, 1 to a kernel. The kernel adds the array elements to the string, which produces the array "World!". This string is passed back to the host and printed out (collected from http://computer-graphics.se).

```
#include <stdio.h>
                                                                                           const int N = 16;
const int blocksize = 16;
__global_
void hello(char *a, int *b)
        a[threadIdx.x] += b[threadIdx.x];
}
int main()
        char a[N] = "Hello \langle 0 \rangle \langle 0 \rangle \langle 0 \rangle;
        int b[N] = \{15, 10, 6, 0, -11, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0\};
        char *ad;
        int *bd;
        const int csize = N*sizeof(char);
        const int isize = N*sizeof(int);
        printf("%s", a);
        cudaMalloc( (void**)&ad, csize );
        cudaMalloc( (void**)&bd, isize );
        cudaMemcpy( ad, a, csize, cudaMemcpyHostToDevice );
        cudaMemcpy( bd, b, isize, cudaMemcpyHostToDevice );
        dim3 dimBlock( blocksize, 1 );
        dim3 dimGrid( 1, 1 );
        hello<<<dimGrid, dimBlock>>>(ad, bd);
        cudaMemcpy( a, ad, csize, cudaMemcpyDeviceToHost );
        cudaFree( ad );
        cudaFree( bd );
        printf("%s\n", a);
        return EXIT_SUCCESS;
}
```

You can now compile the code nvcc hello.cu -o hello.out and then run:

./hello.out Hello world!