In [ ]:

```
!apt-get --purge remove cuda nvidia* libnvidia-*
!dpkg -l | grep cuda- | awk '{print $2}' | xargs -n1 dpkg --purge
!apt-get remove cuda-*
!apt autoremove
!apt-get update
```

In [ ]:

```
!wget https://developer.nvidia.com/compute/cuda/9.2/Prod/local_installers/cuda-repo-ubun
tu1604-9-2-local_9.2.88-1_amd64 -O cuda-repo-ubuntu1604-9-2-local_9.2.88-1_amd64.deb
!dpkg -i cuda-repo-ubuntu1604-9-2-local_9.2.88-1_amd64.deb
!apt-key add /var/cuda-repo-9-2-local/7fa2af80.pub
!apt-get update
!apt-get install cuda-9.2
```

In [ ]:

```
!pip install git+git://github.com/andreinechaev/nvcc4jupyter.git
```

In [ ]:

```
%load_ext nvcc_plugin
```

directory /usr/local/src already exists
Out bin /usr/local/result.out

In [ ]:

```
code = """
#include<iostream>
#include<cstdlib>
using namespace std;

__global__ void vectorAdd(int *a, int *b, int *result, int n) {
    int tid = blockIdx.x*blockDim.x + threadIdx.x;
    if(tid <= n) {
        result[tid] = a[tid] + b[tid];
    }
}

void print_array(int *a, int N) {
    for(int i=0; i<N; i++) {
        cout<<" "<<a[i];
    }
    cout<<endl;
}

void init_array(int *a, int N) {
    for(int i=0; i<N; i++) {
        a[i] = rand()%10 + 1;
    }
}

int main() {
    int *a, *b, *c;
    int *a_dev, *b_dev, *c_dev;
    int n = 8;

    a = new int[n];
    b = new int[n];
    c = new int[n];

    int size = n * sizeof(int); // 32

    cudaMalloc(&a_dev, size);
    cudaMalloc(&b_dev, size);
```

```
    cudaMalloc(&c_dev, size);

    init_array(a, n);
    init_array(b, n);

    print_array(a, n);
    print_array(b, n);


    cudaMemcpy(a_dev, a, size, cudaMemcpyHostToDevice);
    cudaMemcpy(b_dev, b, size, cudaMemcpyHostToDevice);


    vectorAdd<<<2,1024>>>(a_dev, b_dev, c_dev, n);


    cudaMemcpy(c, c_dev, size, cudaMemcpyDeviceToHost);

    cout<<"Results : "<<endl;
    print_array(c, n);


    cudaFree(a_dev);
    cudaFree(b_dev);
    cudaFree(c_dev);

    return 0;
}
"""
```

In [ ]:

```python
text_file = open("assign2.cu", "w")
text_file.write(code)
text_file.close()
```

In [ ]:

```
!nvcc --version
```

```
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2018 NVIDIA Corporation
Built on Wed_Apr_11_23:16:29_CDT_2018
Cuda compilation tools, release 9.2, V9.2.88
```

In [ ]:

```
!nvcc assign2.cu
```

In [ ]:

```
!./a.out
```

```
  4   7   8   6   4   6   7   3
 10   2   3   8   1  10   4   7
Results :
 -134430560  21856   0   0   0   0   0   0
```