

NAME: MANMOHAN PRAJAPAT

ROLL NO: 106119072

DATE: 23/3/2021

CODE:

```
#include <iostream>
#include <thread>
#include<string>
#include <stdlib.h>
#include <unistd.h>
#include <iomanip>
using namespace std;
void Hello(int Z,string str)
{
    for(int i=1;i<=Z;i++)
    {
        cout<<"Hello "<<str<<" for the "<<i<<"th time\n";
        sleep(1);
    }
}

// A callable object
class thread_obj {
public:
    void operator()(int X,string str)
    {
        for (int j = 1;j <= X; j++)
        {
            cout<<"Hello "<<str<<" for the "<<j<<"th time\n";
            sleep(1);
        }
    }
};
```

```

        }

    }

};

int main()
{
    cout << "Threads 1 and 2 and 3 are operating independently" <<
endl;

    //call the thread by function pointer
    thread th1(Hello, 5,"Shreyas");

    //calling the thread by function object and this is a unique way
of calling
    thread th2(thread_obj(), 5,"Nikhil");

    // calling the thread by a Lambda Expression
    auto f = [](int x,string str) {
        for (int i = 1; i <= x; i++)
        {
            cout<<"Hello " <<str<<" for the " <<i<<"th time\n";
            sleep(1);
        }
    };

    // This thread is launched by using lamda expression as callable
    thread th3(f, 5,"manny");

    // Wait for the threads to finish Wait for thread t1 to finish
and it's giving a stopping signal to main function
    th1.join();

```

```

        sleep(0.2);

        // Wait for thread t2 to finish
        th2.join();

        sleep(0.2);

        // Wait for thread t3 to finish
        th3.join();

        //here comes the effect of join where main will continue it's
        process after th1,th2,th3 has finished their work

        cout<<"Bye Bye frands";

        return 0;

}

```



OUTPUT:

```

Bye Bye frandsmritunjya@mritunjya-Predator-PH315-51:~/code/codes_cpp$ g++ -pthread threading.cpp -o thr
mritunjya@mritunjya-Predator-PH315-51:~/code/codes_cpp$ ./thr
Threads 1 and 2 and 3 are operating independently
Hello Nikhil for the 1th time
Hello manny for the 1th time
Hello Shreyas for the 1th time
Hello Nikhil for the 2th time
Hello manny for the 2th time
Hello Shreyas for the 2th time
Hello manny for the 3th time
Hello Nikhil for the 3th time
Hello Shreyas for the 3th time
Hello Hello Nikhilmanny for the  for the 4th time
4th time
Hello Shreyas for the 4th time
Hello Nikhil for the 5th time
Hello manny for the 5th time
Hello Shreyas for the 5th time
Bye Bye frandsmritunjya@mritunjya-Predator-PH315-51:~/code/codes_cpp$ ls

```