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```
//SE352 Final Project
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//Amigobot Demo- Single Ladies Dance
```

```
//Spring 2014
```

```
#include "stdafx.h"
```

```
#include "Aria.h"
```

```
#include <strsafe.h>
```

```
#include <stdio.h>
```

```
#include <process.h>
```

```
#include <windows.h>
```

```
long globalVar;
```

```
DWORD WINAPI Threadfun(void *pPM);
```

```
const int THREAD_NUM = 4;
```

```
HANDLE      g_hThreadParameter;
```

```
CRITICAL_SECTION cs_global;
```

```
int argc;
```

```
char **argv;
```

```

void createRobot(char * address) {

    Aria::init();

    ArArgumentParser parser(&argc, argv);

    parser.loadDefaultArguments();

    parser.addDefaultArgument(address);

    ArRobot robot;

    ArRobotConnector robotConnector(&parser, &robot);

    if(!robotConnector.connectRobot())
    {
        ArLog::log(ArLog::Terse, "simpleConnect: Could not connect to the robot.");

        if(parser.checkHelpAndWarnUnparsed())
        {
            // -help not given

            Aria::logOptions();

            Aria::exit(1);
        }
    }

    if (!Aria::parseArgs() || !parser.checkHelpAndWarnUnparsed())
    {
        Aria::logOptions();

        Aria::exit(1);
    }
}

```

```
ArLog::log(ArLog::Normal, "simpleConnect: Connected.");

robot.runAsync(true);


//start action

// ***** around *****

    ArLog::log(ArLog::Normal, "All the single ladies");//1

    robot.lock();

    robot.enableMotors();

    robot.setRotVel(360);

    robot.unlock();

    ArUtil::sleep(1200);

    ArLog::log(ArLog::Normal, "All the single ladies");//1

    robot.lock();

    robot.enableMotors();

    robot.setRotVel(-360);

    robot.unlock();

    ArUtil::sleep(1200);

    ArLog::log(ArLog::Normal, "All the single ladies");//1

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ArLog::log(ArLog::Normal, "All the single ladies");//2

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robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "All the single ladies");//2

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robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "All the single ladies");//3

robot.lock();

robot.enableMotors();

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "All the single ladies");//3

robot.lock();
```

```
robot.enableMotors();

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "Now put you hands up!");//4

robot.lock();

robot.enableMotors();

robot.setRotVel(-360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "Up in the club, we just broke up, I'm doing my own little thing");//4

robot.lock();

robot.enableMotors();

robot.setRotVel(-360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "You decided to dip but now you wanna trip, Cause another brother
noticed me");

robot.lock();

robot.enableMotors();

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(1200);

ArLog::log(ArLog::Normal, "I'm up on him, he up on me, don't pay him any attention");

robot.lock();

robot.enableMotors();
```

```
robot.setRotVel(0);

robot.setVel(-150);

robot.unlock();

ArUtil::sleep(4000);

ArLog::log(ArLog::Normal, "Cause if you liked it then you should have put a ring on it");//4

robot.lock();

robot.enableMotors();

robot.setVel(150);

robot.unlock();

ArUtil::sleep(5000);

ArLog::log(ArLog::Normal, "If you liked it then you should've put a ring on it");//4

robot.lock();

robot.enableMotors();

robot.setVel(150);

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(5000);

ArLog::log(ArLog::Normal, "Don't be mad once you see that he want it");//4

robot.lock();

robot.enableMotors();

robot.setVel(150);

robot.setRotVel(-360);

robot.unlock();

ArUtil::sleep(5000);

ArLog::log(ArLog::Normal, "...");//1
```

```
robot.lock();

robot.enableMotors();

robot.setVel(-150);

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(5000);

ArLog::log(ArLog::Normal, "If you liked it then you should've put a ring on it");//1

robot.lock();

robot.enableMotors();

robot.setVel(-150);

robot.setRotVel(-360);

robot.unlock();

ArUtil::sleep(4000);

robot.setVel(0);

ArLog::log(ArLog::Normal, "Wuh uh oh uh uh oh oh uh oh uh uh oh");//1

robot.lock();

robot.enableMotors();

robot.setRotVel(150);

robot.unlock();

ArUtil::sleep(1500);

ArLog::log(ArLog::Normal, "...");//1

robot.lock();

robot.enableMotors();

robot.setRotVel(-150);

robot.unlock();
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```
ArUtil::sleep(1500);

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robot.lock();
robot.enableMotors();
robot.setVel(-150);
robot.setRotVel(360);
robot.unlock();
ArUtil::sleep(5000);
ArLog::log(ArLog::Normal, "I got gloss on my lips, a man on my hips");//1
robot.lock();
robot.enableMotors();
robot.setVel(-150);
robot.setRotVel(-360);
```

```

robot.unlock();

ArUtil::sleep(4000);

ArLog::log(ArLog::Normal, "Hold me tighter than my Dereon jeans");//1

robot.lock();

robot.enableMotors();

robot.setVel(-150);

robot.setRotVel(360);

robot.unlock();

ArUtil::sleep(4000);


//verse


//exit robot

robot.lock();

    ArLog::log(ArLog::Normal, "simpleConnect: Pose=(%.2f,%.2f,%.2f), Trans. Vel=%.2f,
Battery=%.2fV",

    robot.getX(), robot.getY(), robot.getTh(), robot.getVel(), robot.getBatteryVoltage());

robot.unlock();

ArLog::log(ArLog::Normal, "simpleConnect: Sleeping for 3 seconds...");

ArUtil::sleep(1000);

ArLog::log(ArLog::Normal, "simpleConnect: Ending robot thread...");

robot.stopRunning();

robot.waitForRunExit();

ArLog::log(ArLog::Normal, "simpleConnect: Exiting.");

```

```

        Aria::exit(0);

        //end exit
    }

int main(int argc, char **argv)
{
    g_hThreadParameter = CreateSemaphore(NULL, 0, 1, NULL);

    InitializeCriticalSection(&cs_global);

    HANDLE handle[THREAD_NUM];

    globalVar = 0;

    int i = 0;

    //Send to robots

    char* address[3] = {"-rh 10.0.126.12", "-rh 10.0.126.15", "-rh 10.0.126.13"};

    while (i < 3) {
        handle[i] = CreateThread(NULL, 0, Threadfun, &(address[i]), 0, NULL);
        // WaitForSingleObject(g_hThreadParameter, INFINITE);
        i++;
    }

    WaitForMultipleObjects(THREAD_NUM, handle, TRUE, INFINITE);

```

```
DeleteCriticalSection(&cs_global);  
CloseHandle(g_hThreadParameter);
```

```
for (i = 0; i < 3; i++)  
    CloseHandle(handle[i]);
```

```
system("Pause");  
return 0;
```

```
}
```

```
DWORD WINAPI Threadfun (void *pPM)
```

```
{
```

```
    char* address = *(char**)pPM;  
    createRobot(address);
```

```
    return 0;
```

```
}
```