

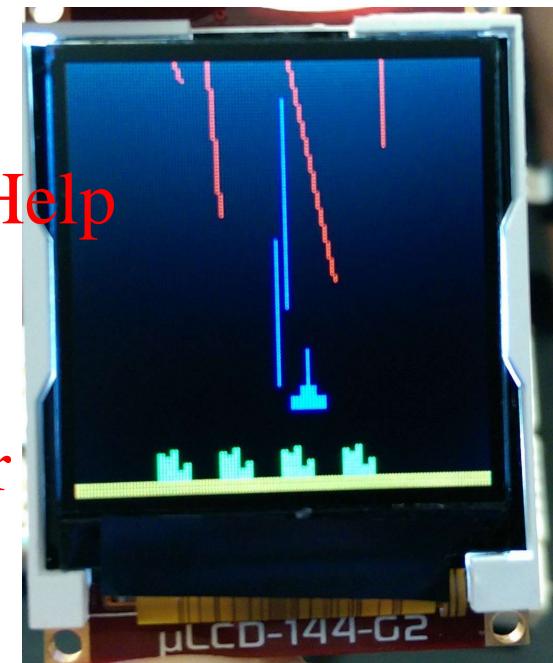
# Project 2: Missile Command



Assignment Project Exam Help

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Typical gameplay of the Xbox 360 remake of *Missile Command*

# Summer projects in ECE 2035

- Time is shorter than a regular semester, so we make up for that
  - In Spring or Fall, Project 2 has two parts
    1. P2-1: Spend time learning about Google Test, then develop a fairly significant Associative Sets module
    2. P2-2: Use it as part of the Mbed project
  - In Summer, the first part is simpler, and it is embedded in Mbed project
    - We will not cover Google Test
    - We will have a starting point for doubly-linked lists in our project.

# Project 2 Overview

- Finish HW3 – You need completed hardware, and skills with Mbed Compiler
- Run demo baseline version of Missile Command
- Import shell code into your compiler
  - compile and download if you like, but it won't run yet
- Set up serial interface to your computer (for debug)
  - Add WeChat powcoder
- Finish doubly linked list
- Implement other required missing functions
- Consider extra features
- Submit

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# Import into compiler

The screenshot shows a GitHub repository page for 'MC\_Summer\_shell'. The title bar includes 'Assignment Project Exam Help' and 'Compiler'. The main content area displays the repository details: 'Missile Command Game shell for ECE2035.', 'Dependencies: mbed wave\_player 4DGL-uLCD-SE MMA8452', and a file list. A large blue arrow points from the text 'Add WeChat powcoder' to the 'Import into Compiler' button in the top right corner of the repository card.

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Compiler

ECE 2035 TA » Code » MC\_Summer\_shell

ECE 2035 TA / Mbed 2 deprecated MC\_Summer\_shell

Missile Command Game shell for ECE2035.

Dependencies: mbed wave\_player 4DGL-uLCD-SE MMA8452

Home History Graph API Documentation Wiki Pull Requests

Files at revision 1:5724f2947554

/ default tip

Name	Size	Actions
4DGL-uLCD-SE.lib	61	<a href="#">Revisions</a>
MMA8452.lib	59	<a href="#">Revisions</a>
city_landscape.cpp	3554	<a href="#">Revisions</a>
city_landscape_private.h	1498	<a href="#">Revisions</a>

Import into Compiler

Repository

Import into Compiler

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Download repository: zip gz

Build repository

+ Follow

Embed url:

<<program /teams/ECE-2035

Hello! Would you like to check out our new IDE design? It can help us decide the better design, and won't take you more than 2 mins.

ollins@c

Next >

details

- A new project will appear in your Mbed workspace
- If you compile and download, your screen shows:

Complete and debug DLL to get rid of this error

ERROR: -14

# Serial interface

- You will want to be able to send debug messages
  - Without altering your game screen
- Mbed supports a serial connection through USB interface
- Code like this will work, once set up

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```
#include "mbed.h"  
Serial pc(USBTX, USBRX); // tx, rx  
  
int main() {  
    pc.printf("Hello World!\n");  
}
```

# Setting up serial communication

## 1. Install driver (maybe)

- Provided link goes to deprecated version
- Mac and Linux don't need driver
- Newer Windows may not either
- Try first without installing driver

## 2. Install a terminal program

- TeraTerm recommended for Windows

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SerialPC

This content relates to a deprecated version of Mbed

Mbed 2 is now deprecated. For the latest version please see the [Mbed OS documentation](#).

For the latest information about Serial, please see [The Windows serial driver](#).

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Do the checked items ASAP.  
Then the project really starts

# A doubly linked list of Players

```
typedef struct P_t{  
    int      jerseyNum;  
    int      position;  
    . . .      // other data  
    struct P_t *Prev;  
    struct P_t *Next;  
} Player;
```

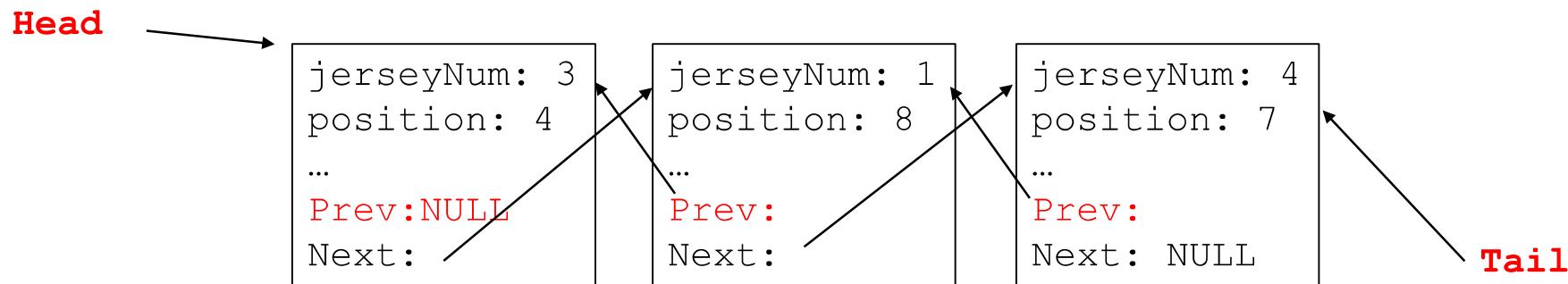
(Same slide as earlier)

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<https://powcoder.com>

```
Player *Players_on_Field = NULL; // initial value
```

Player \*Tail = NULL; // initial value  
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// Goal: After inserting 3 Players, it should look like this:



# Grading

Baseline features: **100** points

- Extend DLL implementation
- Player aircraft movement
- Firing at missiles
- Detecting missile intercept and animating explosion
- Detecting and animating city destruction
- Detecting Game Over
- Displaying score (number of missiles intercepted so far)
- Freeing up dynamically allocated memory
- Advancing levels
- Force level advance

Advanced features: up to **25** points

- More complex explosion animation
- Multiple lives
- Change player aircraft shape to something fancier
- Add MIRVs
- Enable diagonal anti-missile trajectories
- Smart/steerable anti-missile
- Include a Game Menu for configuring the game
- Keep track of game history and show in an interesting way
- Add sound effects
- Use pushbuttons to create a new feature
- Other

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# Submission

- A zip file of your source files and downloadable .bin
- A checklist of features implemented as PDF  
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- A video that demonstrates all basic and advanced features  
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