

Spike: 04**Title:** Non-Blocking Game Loop**Author:** Ford Killeen, 9731822**Goals / deliverables:***Goals this spike aims to achieve:*

- Create a version of GridWorld that uses non-blocking keyboard input
- The input function must not block/pause the game loop

Deliverables required:

- Code for the non-blocking game loop
- Spike report

Technologies, Tools, and Resources used:

The following is required to complete this spike:

- Visual Studio 2015
- Existing GridWorld blocking implementation (or specification)

Tasks undertaken:

The list below details the steps taken to complete this spike.

- Copy your spike 01 GridWorld (blocking) implementation to a new folder
- Investigate how we can implement a non-blocking version of the game
- After deciding on a way of achieving the non-blocking input, begin modifying the existing GridWorld game
- For my implementation I initially thought of doing a multi-threaded implementation but later decided against it when I found the `_kbhit()` function, which is part of the C run-time libraries and can be used by adding `#include <conio.h>`
- This function returns an `int` value greater than 0 if there was a keyboard entry, this makes it very easy to determine whether any input should be retrieved and does not block the game loop

```
void input()
{
    if (_kbhit() != 0)
    {
```

- Build and test your implementation until you believe it is working well enough
- Note, another thing I did was create a queue of inputs that the `update()` function would pull from. This was done by using a `deque` object

What we found out:

We found out that the implementation of a non-blocking game loop is not all that difficult to do, though there are many different ways to achieve the same goal.

Recommendations:

I would recommend finding the easiest or simplest solution for a non-blocking implementation you can, that you actually understand, and implement that. Don't waste time trying to understand something different if you can complete the same problem with an easier method.