

**Spike: 2****Title:** Non-Blocking Game Loop**Author:** Parth Madhani , 101901858**Goals / deliverables:**

- Code
  - Resources.h
  - WorldProcessor.h
  - WorldProcessor.cpp
  - MoveHandler.h
  - MoveHandler.cpp
  - Source.cpp

**Technologies, Tools, and Resources used:**

- Visual Studio 2017 IDE
- [www.cplusplus.com](http://www.cplusplus.com)
- Canvas

**Tasks undertaken:**

- Find out methods to implement non blocking game loop.
- Implementing a multi-thread design for the initial design from spike 1 as required for this task.

**What we found out:**

I found out mainly how to convert a simple loop into more complex game loop where there is no blocking that is the game can continue updating whilst waiting for input.

I implemented multi-thread design to the program and used it so that game waits for input only processing when it occurs.

```
void WaitForInput(bool &aInputRequired, Move &aNextMove, IOProcessor &aIOProcessor)
{
    while (true)
    {
        if (aInputRequired)
        {
            aNextMove = aIOProcessor.GetMove();
            aInputRequired = false;
        }
    }
}

int main()
{
    bool lInputRequired = true;

    IOProcessor lIOProcessor;
    MoveHandler lMoveHandler;
    Move lNextMove;
    GameState lGameState = Valid;
    auto start = high_resolution_clock::now();
    thread lInputThread(WaitForInput, ref(lInputRequired), ref(lNextMove), ref(lIOProcessor));
```

Additionally I just added timer to program so it calculates the time taken for the game to run / complete.

```
Welcome to GridWorld : Quantised Excitement.Fate is waiting for You!
Valid commands : N, S, E and W for direction. Q to quit the game.
You can move North, :> N
You can move West, East, South, :> S
You can move North, :> N
You can move West, East, South, :> W
You can move East, North, :> N
You can move South, North, :> N
You can move East, South, :> E
You can move West, East, :> E
You can move West, North, :> E
You can move West, North, :> N
You can move South, North, :> N
You can move West, South, North, :> N
You can move West, South, :> Arrrrgh... you've fallen down a pit.
YOU HAVE DIED!
Thanks for playing. Maybe next time.
Time taken: 12seconds
```