Computer Systems and Networks

ECPE 170 – University of the Pacific

MIPS Programming

Lab Schedule

Activities

- **Today**
  - Discuss: Lab 11
  - Lab 10
- **Next Tuesday**
  - Discuss: Processor Architecture
  - Lab 10 & 11
- **Next Thurs**
  - Discuss: Network Programming
  - Lab 11 & 12

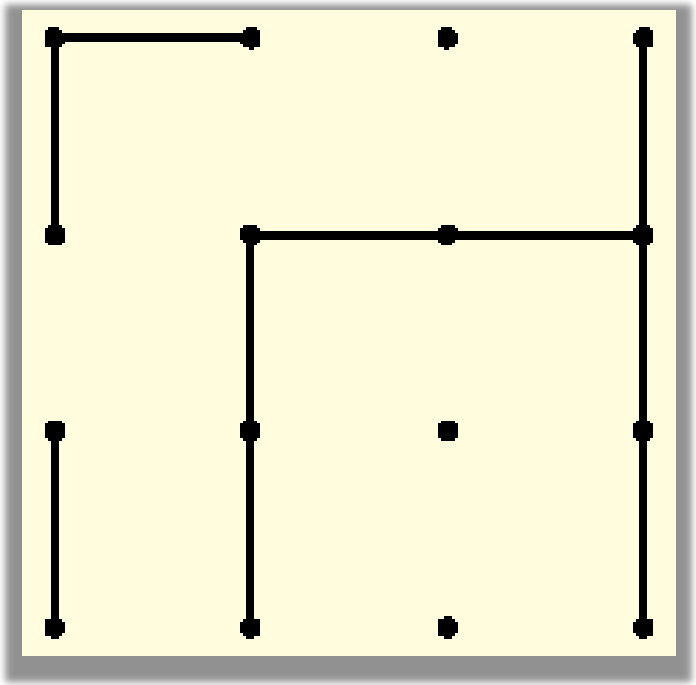
Assignments Due

- **Next Tuesday**
  - **Lab 10 due by 11:59pm**
- **Sun Dec 1st**
  - **Lab 11 due by 11:59pm**

Lab 11- Advanced MIPS Programming

Dots and Boxes

- A simple game where players “connect the dots” and try to build the most boxes
- Nice features for assembly program:
  - Simple graphics
  - Simple memory requirements
  - Simple rules



Dots and Boxes

- Your will first implement the program in C, so you can “think through” the logic
- You will then implement it in MIPS
- You must not rely on any C library functions except `printf()` and `scanf()`
- But what about `rand()`?

Task : Write Code

- **Write MIPS assembly for:**

```
m_w = <choose-initializer>; /* must not be zero */
m_z = <choose-initializer>;  /* must not be zero */

uint32_t  get_random()
{
   m_z = 36969 * (m_z & 65535) + (m_z >> 16);
   m_w = 18000 * (m_w & 65535) + (m_w >> 16);
   return (m_z << 16) + m_w; /* 32-bit result */
}
```

* http://en.wikipedia.org/wiki/Random_number_generation