**Kevin Bruce IT Requirements Template**

*The following are all things that should be documented and discussed prior to the IT equipment being procured for your prototype. Remember that you are securing IT equipment for a prototype only, but you could / should capture the requirements as best you can from the Admissions client for what will eventually become the final project. This will help ensure your project has a better chance of being selected as it will show forethought and insights for the eventual developers (if that’s not you).*

1. Server Platform (for each “server” required)

**Windows Server 2012 is something we can consider. It provides a secure, easy-to-manage, modular and extensible platform for reliably hosting websites, services, and applications.**

* 1. Physical system requirements

**Our images will easily fit within a single physical Server, but will need to think about physical equipment requirements for the final version after the prototype is accepted.**

* + 1. Storage capacity

1. **Server Memory - Minimum**
2. **Chris Ahmed should know memory size (Since I’m not quite sure)**
3. **Database storage, what size hard drive space do you need?**

**(Roughly 100 GB of storage)**

1. **What would the CS members think would be a good size?**

**Web Server (10 GB of physical memory to hold user info)**

**Backup Server/ Cloud (50 GB of physical memory - a lot more info will be uploaded in here for backup)**

**App Server (Minimum 1GB of physical memory)**

Speed requirements / response time parameters

**Reducing Traffic – Improves Server Response Time**

**Will it run on old equipment/ operating system or superfast CPUs?**

1. **This is something we need to think about**
2. **The equipment downstairs is new equipment as far as I know.**
3. **With old equipment a lot of testing must be done. (Chris can help us set up old equipment for us to use and play around with.)**
   1. Virtual system requirements

**Web / App / Backup Server - Windows Server 2012.**

* + 1. Number of images expected

**Images – Virtual machine Images**

**5 in total. 2 for the Web Server, 2 for the Application Server, 1 Backup Server**

**More than 1 Server for each mainly for redundancy - only 1 Server for Backup.**

* 1. Connectivity
     1. Network considerations

**The Server Platform should be able to communicate with any TCP/IP connected devices (routers and switches) to host and manage the website.**

1. **For the prototype, our network will be behind the Marist firewall AND not accessible from the internet. The final production version would have to function where users could access it from the internet.**

* + 1. Interconnection to what other systems

**We will need access to student terminals or test systems, and Professor Algozzine will need access from his office for the prototype as well. The production version will also need access to Banner where the data is housed.**

1. Reliability
   1. Service Level Agreements
2. **Redundancy and Multi-site (Servers – Virtual)**
3. **2 of database servers for redundancy**
4. **2 of application servers for redundancy**
5. **1 Database server down at Hancock basement and the other in Donnelly**
6. **An application server down at Hancock basement and the other in the cloud**
7. **1 virtual machine for each team member for testing**

Uptime requirements

**A service level agreement with the joint study lab owner (Chris Ahmed). He will notify us when the servers will be up and running again.**

* + 1. Response time requirements

**1. Expectation - Less than a second response time for user satisfaction while browsing.**

**2. 1 Server for updating and the other for backup can help meet the expectation for the response** **time**.

1. Recoverability
   1. Where are things backed up? How often?

**Database Admin – Data will be frequently backed up to the Database / Backup Server**

* + - 1. **Snapshots - Backup Server can be configure to take backup snapshots.**
  1. Access to backups?

**Database Admin – will be given Admin rights and Privileges to maintain and update info/backup?**

* + - 1. **Snapshots - Backup Server can be configure to take backup snapshots**
      2. **The backup server / Cloud / Drive**
      3. **Code backup – Github / Marist Git**
  1. What data is transient and doesn’t need to be stored longer term?

**(Student Data) – Potential transfers will be deleted from the database once the admission process is over. After their final decision to transfer to Marist or not. This will make space for potential students for the next term.**

1. Security and Privacy
   1. Database

**Who should have admin access?**

**7 admins to reply to emails/ students questions and submissions**

**1 important admin that overlooks everything at admissions**

* + 1. Access controls by userid / roles

**1. Are we going to use LDAP? Lightweight Directory Access Protocol**

**(LDAP servers can look up entries in a wide variety of ways. LDAP servers index all the data in their entries, and "filters" may be used to select just the person or group you want, and return just the information you want.) - Yes we can consider implementing this protocol into our database.**

**2. What code will run on what server to let users create accounts and login? (Apache, Mysql)**

* 1. Update vs. Access

**Roles of users, and what will each be able to perform? Edit, update, read only, reports, database admin, etc.**

* + - 1. **Admins – edit, update, (1 database admin)**
      2. **Super users / Admission users – answer questions, lookups, read only**
      3. **Students – submit questions / enter transferable credits for feedback**
  1. Account information
     1. User data

Personal / registration

**User data will be kept in the database and retrieved when needed.**

* + - 1. Saved courses information
    1. FERPA considerations

**Student information will be stored since this is just a prototype, but student sensitive data will have to be addressed before the prototype can become a production system.**

* 1. Admin access controls

**Same as FERPA considerations.**

* + - 1. **What data should various admins and super users have access to?**

1. **Amins - edit, update, (1 database admin)**
2. **Super users / Admission users - answer questions, lookups, read only** 
   * 1. Adding new users, deleting old

**IT System Admin will use (Active Directory) as a tool to add and delete users**

1. Maintenance
   1. Planned down time requirements

**How often will the system be down for maintenance?**

* + - 1. **Potentially it will probably be down from midnight to 1 am nightly window. This will Improving user satisfaction/ eliminating frequent unexpected down times while a student is browsing the web.**
      2. **It only applies to the servers that need to. Let’s say backup failure for instance.**

**What happens if a CS member messes with the some of the code and happens to cause down time?**

* + - 1. **This issue will be looked at during the downtime window.**

**Also a CS member can notify the IT guy downstairs when they want a downtime to polish up some code that will cause some issues. This shouldn’t happen frequently but is acceptable. (This will be a service level agreement with joint study lab owner – Chris Ahmed/planned outages).**

* + - 1. **Professor Algozzine will be on the list so we can give him heads up not to mess with the prototype at this time frame.**
    1. Database maintenance

**Database Admin - will provide technical support for the Database maintenance and disaster recovery. Available during school hours.**

* + 1. Updates to course information

**This will be done by the Database Admin**

* + 1. Times of year when IT does maintenance

**1. IT Maintenance Plan - will be designed to save us time and money by preventing system downtime.**

**2. IT staff (Joint Study / Chris Ahmed) will be available on school hours to provide support /repair if something unexpectedly breaks down.**

* + 1. Times of year when Admissions systems are not available?
       1. **Once a semester for maintenance**
       2. **We should work out a time frame that's convenient for Admissions.**