**Project Description**

**Boeing Corporation**

Determine parameters, database plan, and implementation plan for IoT Project. Initiate long term project and pass on information gathered to next groups.

**Specific Client Needs**

What are the critical needs?
- Capability to access the data
- Capability to query data after collected
- Capability to store data in virtual environment
- Capability to display the data in meaningful format

**Project Mission Statement**

To use automated methods to collect data from the Kuka Induction Welding robot, storing it in a custom built database so that it is available to analyze and prevent malfunctions from happening in the future, saving the business time, money, and resources.

**PMBOK Project Processes Used**

- Heavy on the Planning phase
- Documentation from Planning and Monitoring & Controlling phase is important in passing the project off down the line

**Product Development & Deliverables**

1st Deliverables / Prototypes
1. Tour McNair Center
2. Gather requirements for system
3. Plan architecture

2nd Deliverables / Prototypes
1. Database Built
2. Collected and stored test data
3. Collected and stored real data

3rd Deliverables / Prototypes
1. Populate tables
2. Validation Testing
3. Create a dashboard

**Technologies Used**

- Kuka Controller
- Kuka Induction Welding Machine
- NoSQL DBMS

**Project Budget**

- **Total Projected Forecasted Hours**: The projected hours for our group considering a different plan was **220 hours**.
- **Total Project Hours**: 119: This is a count of all the hours that we actually accumulated. Given that we did not complete creating a dashboard, we had less total hours that expected.

**Project Results and Future Recommendations**

**Project Results** – Although we didn't necessarily meet the client's critical success factors, we made big strides on the product deliverables. We were held back a great deal initially by communication/preparation complications that were out of our hands and prevented us from getting the data until just 2 weeks prior to the final deliverable deadline. We now have a solid foundation for the project moving forward, and a guideline and understanding as to what needs to be done in the coming semesters.

**Future Recommendations** - The next group should take the data that we have and create a NoSQL database to store all of the data. From there, the data can start being stored and analyzed from a dashboard, or a provided GUI from the database provider. (See NoSQL document for details)

**Lessons Learned**

- When in a slow moving situation, try and focus on the little details and prepare for the big details.
- Communication is key.
- Working with/relaying on people can set the project back.
- A proper risk management plan is vital to project success.
- Identify any single points of failure and how to overcome them

**Project Success Factors**

- Having a well built database
- Having a good front end dashboard
- Collecting and analyzing data that positively impacts their manufacturing process

**Hints for Other Sections**

- Don’t skimp on risk management
- Working with other people’s timelines can be the hardest part of the project
- The internet has the answer to any of your questions
- Useful Faculty:
  - Dr. Patten
  - Professor Gumina (SQL)
  - Professor Gerdes (Visual Basic/Conversion)
  - Aastha Bapna (McNair Center DBA)

**Key Stakeholders**

- Gary Hilton
- Omar Aguilar
- Michael Johnson
- Udo Mohr
- Dr. Van tooren
- Dr. Patten
- Professor Gumina
- Dr. Gerdes

**MS Project Gantt Chart of Major Project Milestones (Key Deliverables)**

[Image of Gantt Chart]

- Boeing Factory Automation and Data Collection with a Cloud Infrastructure
  - 1st Planning
  - 1.4 T2AB: Signed Charter
  - 1.1 Set of deliverables
  - 3.1 Create 1st prototypes
  - 2.1.5 T2AB: Prototypes 1
  - 3.2 Final Deliverables
  - 4.1 Create final prototype
  - 4.1.4 T2AE: Final project deliverables
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