Andrew Scheerenberger

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Casey Spooner

Director of Software development

Johnson Controls

5757 N. Green Bay Ave. P.O. Box 591

Milwaukee, WI 53201

Dear **Director Spooner**:

It is with great enthusiasm that I submit my application for the position of Software Engineer for the YORKworks project. As an active problem solver and a well-trained computer scientist, I know my diverse skill set will make me a powerful asset to the YORKworks project team.

As you will see from my resume, I am a professional who has patience and control. I live for hard problems, organization and increasing efficiency. I've always been a perfectionist and making sure my programs run properly isn't just something I'm used to, it's something I enjoy. The first rule of debugging is never succumb to frustration. I have never lost my control while trying to solve a problem. I stay focused and always complete my assignment, as can be seen from my 4.0 GPA.

In addition to my attention to detail, I am flexible and responsive. One of my recent classes required coordinating with a group of engineering students to try and compose various technical documents. I did not let the fact that I am not an English major set me back. I give no excuses, only results. I brought the team together and helped manage assignments and disputes. While there were obstacles with team member obligations and writing skills, the work was distributed according to strengths and assignments were completed. I apply the same winning attitude and problem solving skills to any assigned task, no matter the significance.

In closing, I am excited at the possibility of being able to work on the YORKworks project. I would love the opportunity to meet with you and discuss what I can bring to Johnson Controls and the YORKworks team. I appreciate your consideration and look forward to hearing you.

Sincerely,

Andrew Scheerenberger

Enclosure

Table of contents

The full title is Corsair Vengeance K70 Gaming Keyboard Technical Description. This is a very specific title which is needed for any description. The main audience is people considering buying a K70 keyboard or a mechanical keyboard in general. The purpose of this description is to give readers more information about a product than is given from the manufacturer. When I was looking for a keyboard for gaming and typing, I had to scrounge for this info, it's helpful to have it all in one place. My objective with this document is to show I could make a meaningful and useful technical description.

This is a set of procedures to debug a computer program in terms of code. They are procedures because they are more general than instructions. The main audience is an intro level programmer, programming student or someone trying to code for recreation. The secondary audience could be a manager overseeing the training of an intro programmer. The purpose of this document is to give programmers ideas for debugging and general guidelines, for the process. I almost always solve my program errors because I follow these guidelines and I never get mad or lose sleep. My objective with this document is to show I can make a set of procedures for something I find important.

The full title is Technical Cultures: A Writing/Cultural Analysis of Johnson Controls and the Computer Science field. I tried to make this title as self-descriptive as possible, just like identifiers in a program. The main audience is students in a technical field and people considering applying for a job with Johnson Controls. The secondary audience is teachers in a technical profession, and tertiary readers could be someone at Johnson Controls. The purpose of this document is to help students in a technical field advance in their career path. I chose the introduction and part of my research findings as a sample for this portfolio. My objective with this sample is to show I can research effectively and come to conclusions.

# Corsair Vengeance K70 Gaming Keyboard

Technical Description

The K70 is a corded mechanical gaming keyboard. It measures 17.25 inches wide by 6.5 inches long and weighs 3.6 pounds. The K70 was designed for performance gaming and typing. An average rubber dome keyboard (like a standard dell keyboard) has no tactile response and is ten times slower than a K70. The increase in speed and response is due to the mechanical switches. This keyboard can have one of three types of switches. These switches are color coded and each have different properties.
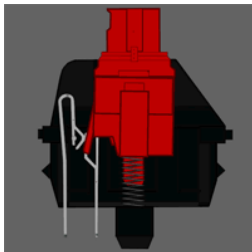

Cherry MX Red: Red are known as linear switches because they don't have a tactile "bump". These switches have the longest lifetime and are the fastest because they have the lowest force required and are smooth (force diagrams next page). This makes Red switches the best for gaming.
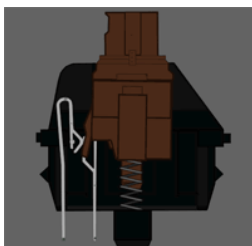
Cherry MX Brown: Brown are light tactile switches. These switches have a fast actuation while also having a slight "bump". A slightly larger force is required to activate this switch than Red. Brown switches are a hybrid between a true tactile and a linear key, which makes them good for gaming and typing.
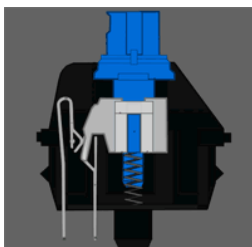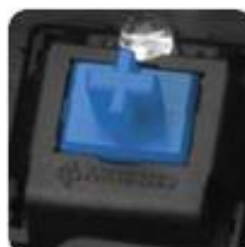
Cherry MX Blue: Blue are heavy tactile switches. These switches have slower actuation but a very tactile click. A relatively large increase in force is required to activate this switch compared to red or brown. These tactile switches were designed specifically for typing and are inefficient for gaming.

MX with tactile feel(ergonomic) (Brown) MX with click tactile feel (Blue) MX linear (Red)
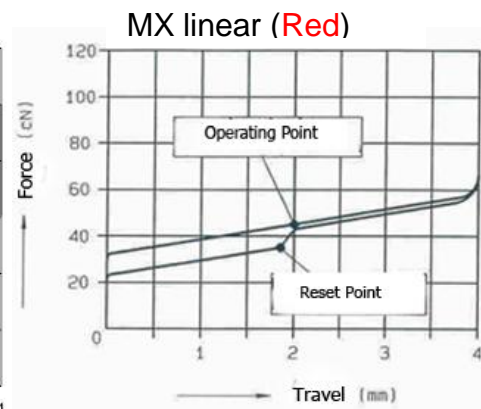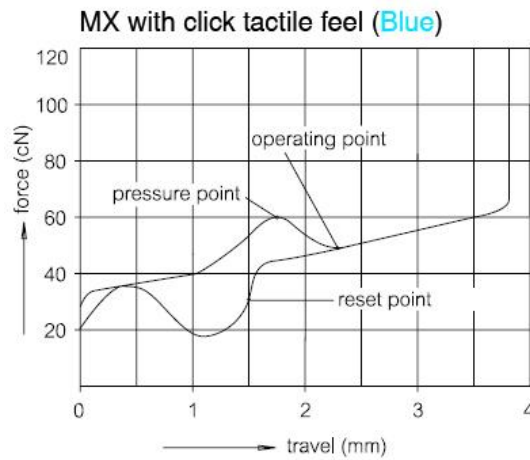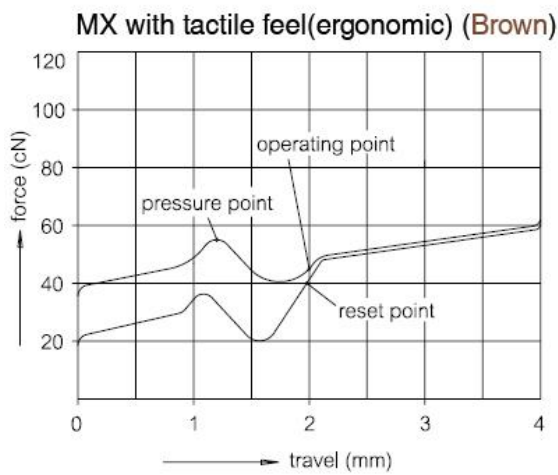
Other hardware specs:

Black anodized, brushed aluminum chassis – The K70 has a sturdy aluminum frame for hours of gaming or typing for projects.

Textured WASD and 1-6 keycaps and lit keys– The most important keys for an fps gamer are textured so it's easy to reset your hand on the keyboard. Lit keys allow easy key navigation in low light environments when you don't have your keyboard memorized.

Soft-Touch Wrist Rest – When using your keyboard on a desk the wrist rest places your hands in a healthy typing position. This can be removed if you keep your keyboard on your lap.

Software info:

The K70 requires a high power USB 2.0 connection (+500mA). To utilize the K70 fully your computer should have at least a duo core with 3 GHz so that the buffer speed matches the 1ms key click response. The K70 has **anti-ghosting software,** which makes sure simultaneous key clicks are not lost or "ghosted".

How to Debug a Computer Program

Every programmer has encountered (or created) a bug or error at some point while coding. Most bugs can be avoided by good object oriented programming practices and design. However, not all bugs are avoidable, and as humans we sometimes make mistakes. When these bugs occur they need to be identified and resolved. Remember the three most important rules of debugging.

- ✓ Always stay calm and never allow yourself to become frustrated.
- ✓ Own the problem: it doesn't matter what caused it, you will find the solution.
- ✓ Use the scientific method: observe, hypothesize, test, and check.
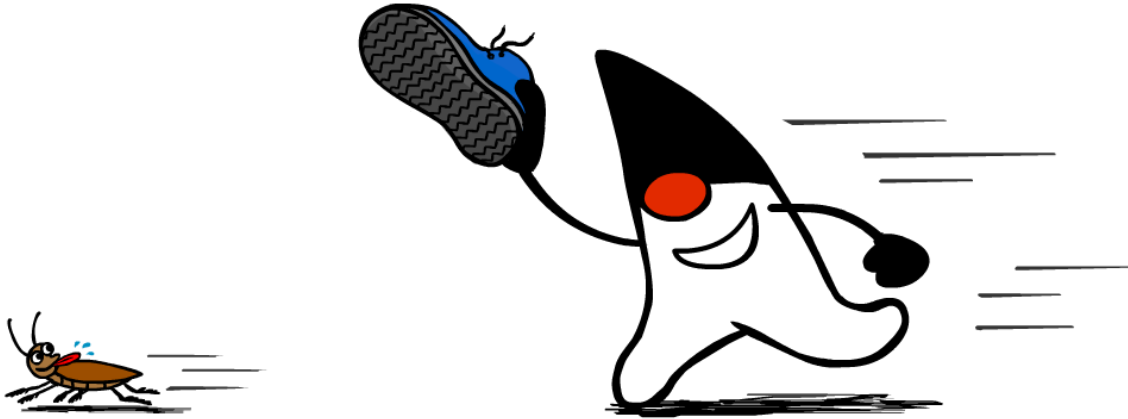
Identification

1. **Check the syntax first.** Coding errors are the most common cause of bugs. Even a semi-colon in the wrong place could cause this error.

2. **Next isolate each code segment** and perform custom testing with try and catch blocks. Logic errors are tricky to identify because the programming environment doesn't check for these errors. This will also check for data errors.

3. **Then check the API's** (Application programming interface). Compatibility issues could be occurring due to use of constructs from different versions.

4. **Lastly, recheck your design.** If your design does not accomplish your original goals you might have an architectural error.

Resolution

Syntax/coding errors: The best resolution for a coding error is prevention. Simply understanding the programming language's syntax prevents most coding errors. If you aren't sure how something is coded in a language, check the manual.

Logic/data errors: A logic error occurs when 2 + 2 = 5. This means your input and output don't match. Check your design for outputs and follow standard exception handling procedures.

Compatibility errors: These errors occur when there is a version or platform incompatibility. Solving these errors requires knowledge of multiple languages and platforms. Consult with colleagues of possible.

Architectural errors: This error means your program can't do what you need it to. Most often the only solution for this error is to completely redesign and recode your program.

Introduction

Every organization has a different culture. Understanding the culture is required to function in an organization. This is because the culture forms the unique communications of the organization. Johnson Controls and the computer science field both have their own cultures. In this report I analyze these two technical cultures and the communications they form.

The most important aspect of communication to master when you enter a technical organization is audience recognition. If you become a computer scientist, or are in any technical field, your duties will include communication. You will have to confer with "engineers, analysts, marketing personnel, designers, and software developers" as a computer science intern. As you advance in your computer science career you may have to communicate with clients, managers, database designers, government counsels, suppliers, and help write manuals for end users. This shows why audience and cultural recognition is so important. Writing to a client as you would to an engineer could cost the company a sale or a contract which could mean your job.

I created this report not just as a requirement, but as a tool for advancement. Just being good at the technical duties of your field isn't enough to move forward in a career. To excel in a modern work place you need to adapt to a culture and a way of communicating. Don't miss this opportunity, take advantage of this report.

I knew technical communication was important, but not how important. Every single job ad and job description required good communication skills. Below I have screen shots from several job ads I looked at. In technical fields it can be easy to understand your own work without being able to explain it. Employers want someone who can describe progress, needs, complications, etc. in understandable terms. Teams may include people from other nations. Learning another language and studying other countrys' cultures could help you communicate better with these teams (Beaubouef, 2003, p. 52).

9. High degree of interpersonal skills including both oral and written communication.

•Working in large and small teams, strong interpersonal skills

▸ Must possess good verbal and written communication skills, and be able to work with others; Prior experience working with geographically remote and culturally diverse teams is a plus

Excellent oral, written and interpersonal skills

An ability to work independently, yet still provide regular and insightful communication to upper management

Exceptional interpersonal and communication skills and the ability to interface with personnel at all levels of an organization (both internal and external stakeholders), both verbally and in writing

Discussion of Results

In this section I will analyze my research and come to conclusions.

1. Importance of audience recognition in computer science.

2. Analysis of Johnson Controls values and image.

Importance of Audience Recognition

Of all the traits of technical communication audience recognition is the most difficult. Two qualities of a technical professional are accuracy and clarity. If you have programmed before you understand that one semi colon out of place could mean hours of debugging. If you have done a math problem before you know that one sign change means a wrong answer. In the work place the stakes are higher. A mistake could cause hardware damage or even a user injury. To avoid this, you are trained for years to be accurate and clear. Audience recognition is different. You will likely never be trained to describe a specific technical situation to different people. You have to develop this ability yourself (Beaubouef, 2003, p. 53).

Audience recognition is the most desired trait because it's the most difficult. You will have to work with a team that includes non-programmers. You will have to communicate with end users about their needs (Pottabathni, 2013). Turning thoughts into code is what you are trained to do but explaining code to others is just as important.

Andrew Scheerenberger

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Career Objective

· A software engineer on a software development team, specializing in analysis, mathematics and physics principles.

Education

ASSOCIATES OF SCIENCE | EXPECTED AUGUST 2015 | SALT LAKE COMMUNITY COLLEGE

- Major: Computer science
- GPA: 4.0/4.0

BACHELOR OF SCIENCE | EXPECTED DECEMBER 2017 | UNIVERSITY OF UTAH

Work History

ASSISTANT LOT MANAGER | STEIN'S GARDEN CENTER | 2007-2008

Skills & Abilities

COMMUNICATION

- Created presentations for professional and academic topics.
- Presented for groups of 25 up to groups of 400+.
- Excellent interpersonal skills. Can professionally communicate verbally or in documents.

PROGRAMMING SKILLS

- Trained in Java and C++
- Understanding of analysis and application development
- Can create algorithms and psuedocode
- Knowledge of SQL and manipulating data structures
- Understanding of Object Oriented programming and test driven programming
- Excellent problem solving skills with debugging, mathematics and physics.

Awards and Accomplishments

TUITION WAIVER | SLCC | 2013-2015

- Awarded for 4.0 gpa

HONOR ROLL | HIGHSCHOOL | 2008-2009

MOST COMMUNITY SERVICE | HIGHSCHOOL | 2005-2008

- Awarded for completing most community service hours. Did community service through church.