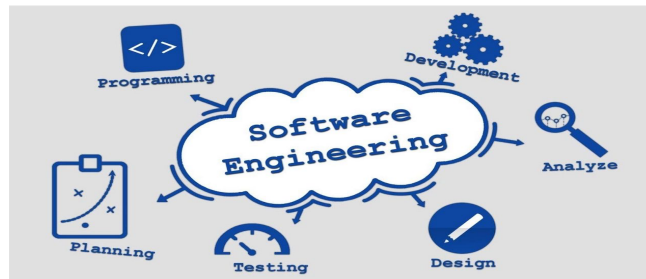


VEX IQ Online Challenge Submission 2022
Beyond Gears, Team 11108A
Written by Sara Khattak, 8th grader
Mulholland Middle School STEAM Robotics Magnet
17120 Vanowen Street
Lake Balboa, CA 91406

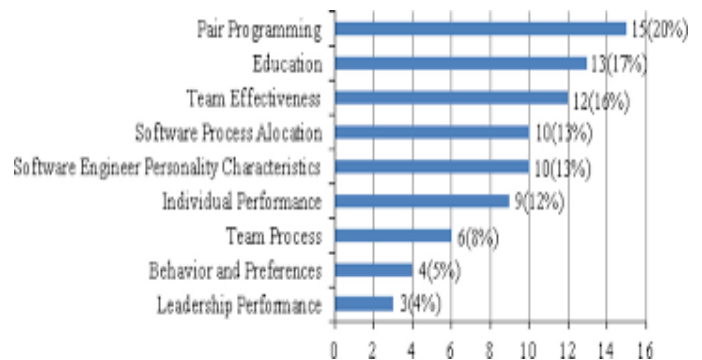
Software Engineering at a Glance and It's Future Impact

An astonishing STEM career that intrigues me deeply, is the field of software engineering. Candidly, I had no prior abstract insight or deep knowledge about the field and never thoroughly explored its areas before joining the robotics team, in which our coach introduced many adept ideas and fresh perspectives on coding. I think that my interest stemmed from when we briefly used VEX Code VR for assignments in sixth grade which set a base of questions and interest for me before further delving into it the following summer on the team.



3 Source: Software Engineering

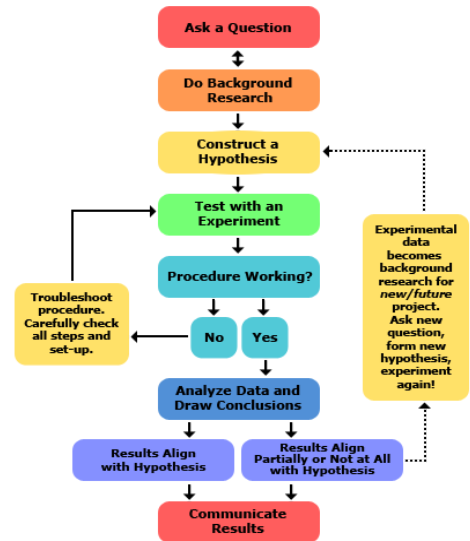
Whilst conducting my research on software engineering, I found out that an ideal individual possesses the qualities of being a good team player, an in-depth problem solver, attentive to details, goal-oriented, motivated, and organized, in addition to holding at least a bachelor's degree in Computer Science, Software Engineering, Computer Programming, Software Development, Mathematics or a field of similarity.¹ In observance of my own skills and words that my peers have put in, I can infer that I do indeed possess many of these traits. This makes the field of software engineering even more appealing, as I can now relate to it in a somewhat direct manner.



4 Source: Forty Years of Research on Personality in Software Engineering: A Mapping Study

Steps in the design process include: Understanding the project requirements, research and analysis, design, prototyping, and lastly, evaluation. The software engineering design process is highly beneficial as it gives you a solid foundation to construct your software structure.² A pure example of this is in literature, which I am aware is a complete polar opposite of engineering, but still greatly applies. When writing an important paper, you do not make your first revision your final draft. You start off brainstorming what each paragraph will include, make bullet points as to what you want to cover, and convey to your audience along with the tone and moral, if applicable, in your setting. If you skip these steps, your final paper will be unorganized and will probably leave out many details you wanted to include. It would honestly just be disorganized and underwhelming when completed.

Scientific Method



7 Source: Science Buddies. The Engineering Design Process

In observation of our team's functionality, the design process stated earlier does indeed match in some ways. When we are coding, we test out the path the robot will take many times before we finalize it. Also, when I am writing in the engineering book, I draft important ideas and the



layout before actually putting it in the book for the sake of precision. The design process can be applied to many different aspects of being on a robotics team and I believe by being a firsthand witness, that it is indeed preparing us for what lies ahead of us in any engineering field. It gives us a boost and head start before launching our career.

5 Source: Herman, Lily. (2021). 7 ways to use sticky notes

Joining the robotics team and stepping out of my comfort zone has been some of the most positive yet challenging experiences for me, in which I cherish the insight and knowledge I gained on various aspects, such as teamwork, problem-solving, engineering and so much more. These qualities are also the qualities that successful software engineers hold, as previously mentioned. This will definitely be a large foreshadow and strong evidence that we will do well in the field, due to the knowledge accumulated on the team at a young age.

Participation in VEX IQ is helping to prepare young minds for a STEM career that would be both self-fulfilling with room for personal and professional growth as well as help meet a professional demand; thus, producing a boost in quality engineers in the near future.



6 Source: Empower IT & Unlock Innovation
with Solutions Powered by Intel
Xeon

References/footnotes

¹ Morganelli, Marie. (2021). How to Become a Software Engineer
<https://www.snhu.edu/about-us/newsroom/stem/how-to-become-a-software-engineer>

² Nelson, E. (2020). What Is the Engineering Design Process?
<https://www.instructables.com/What-Is-the-Engineering-Design-Process/>

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3 Lin, Carter. (July 2020). Software Engineering
<https://medium.com/@carterlin.iim05g/software-engineering-2a4e4919ed9f>

4 Cruz, Shirly. (May 2015) Forty years of research on personality in software engineering: A mapping study. Computers in Human Behavior Volume 46
<https://www.sciencedirect.com/science/article/abs/pii/S0747563214007237>

5 Herman, Lily. (2021). 7 ways to use sticky notes
<https://www.themuse.com/advice/7-ways-sticky-notes-can-push-you-ahead-in-your-career-and-also-make-your-life-more-colorful>

6 Graph Transparent Image-Chart With Arrow Going Up .Empower IT & Unlock Innovation With Solutions Powered By Intel Xeon
https://www.pngfind.com/mpng/oxbhbJ_graph-transparent-images-chart-with-arrow-going-up/

7 Science Buddies. The Engineering Design Process
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