WHO ARE THEY?\textsuperscript{1,2,3}

Software engineers are computer scientists who apply engineering principles to create everything from computer operating systems to your favorite apps. The software they create powers your computer and many of the electronic devices you use every day. Software engineers are experts in programming languages and can apply that knowledge to a wide range of opportunities—including video game development and the creation of applications that you use to check the weather, keep up with social media, order food delivery, and so much more. At Microsoft, these are the professionals who design games like Minecraft! If you love thinking up new ideas and finding ways to bring them to life, you might want to consider a career as a software engineer.

WHAT DO THEY DO?\textsuperscript{1,2,3}

Software engineers create all the systems and applications that run on computers and other devices. They do this by using advanced mathematical analysis and principles of both computer science and engineering. They start by analyzing a problem or need, designing a solution, and then thoroughly testing that solution. This often involves creating or utilizing an algorithm, or a set of rules for a computer to follow in completing calculations or other operations. This requires creativity and in some cases artistic ability, critical thinking and problem-solving, a strong attention to detail, and a methodical process. Software engineers often work as part of a team or even directly with clients, so strong communication skills are also necessary.
Software Engineer

HOW DO I BECOME ONE?3,4

Students who want to become software engineers should commit to taking the appropriate courses and developing the necessary skills starting in high school. Learning to code and learning programming languages in high school will help prepare students and help them understand whether they would enjoy a career in software engineering. Students should also take advanced mathematics courses, engineering, and computer science courses in high school, where available. If students are interested in turning a software engineering career into one in video game or app development, they may also want to consider graphic design courses. This career will likely require a bachelor’s degree in computer science, mathematics, or a related field and may require a master’s degree.

EDUCATION/TRAINING

• Bachelor’s degree in computer science, mathematics, or a related STEM field
• Master’s degree in computer science, mathematics, or a related STEM field
• Internships and/or apprenticeships
• Experience with programming languages like C++ and python preferred