IBM Systems MEDIA

Anna McKee Makes History as the First Female Master the Mainframe Winner

Anna McKee, the first female Master the Mainframe winner, is forging a path toward increased diversity in the tech field.

Image by Shannon Faulk

By Holly Eamon

09/01/2018

University of North Texas student Anna McKee grew up in a household fluent in technology. Despite the fact that both of her parents work with mainframes, McKee didn't consider a career in technology until her second year of junior college. She was struggling to pick a focus of study, considering professions ranging from music to medical practice, when her mother encouraged her to take a C++* class. "It was one of the first classes I ever took that really grabbed my interest, so from that point I thought, 'Let's just throw all my eggs in one basket and go down this path,' " McKee says. "Maybe it wasn't the smartest move, but it worked out in the end."

With one year of undergraduate education remaining, McKee's successful "end" is the beginning of a promising future in technology, thanks to her history-making win in the 2017 IBM Master the Mainframe contest. She was the first woman to nab a top spot in the contest's 13-year history, earning first place for North America in addition to being named one of the top three overall winners.

Basics to Badges

The annual Master the Mainframe contest gives students the opportunity to gain real-world experience using enterprise computing skills. No previous knowledge is required. It consists of three parts of increasing difficulty for students to virtually complete from September to December. Parts one and two are based on speed and accuracy, and the final portion is based on creativity and problem-solving abilities when faced with a real-world challenge. Judging takes place in January, with winners announced in March.

In part one, students are introduced to the mainframe's UIs, basic concepts and data structures. They follow step-by-step instructions provided by IBM to prepare for part two, where participants program, develop and experience OS challenges on IBM Z* that are based on input from IBM clients. In part three, participants tackle real-life scenarios encountered by experienced systems programmers.

Sponsored by IBM and administered by Angel Hack, the competition operates on a fully global scale. First- and second-place winners are selected from six regions (North America, Latin America, South Asia, APAC, MEA and Europe), and after another round of judging, three are named the overall winners.

The top two individuals from each region received a $2,750 travel stipend to visit the head IBM office in their region to meet with key executives and recruiters on their project.

In addition, students who finish parts two and three are offered IBM Open Badges to display their IBM credentials online via a digital image that contains verified metadata describing their qualifications and the rigorous process by which they earned them. "Our clients love to get that list of students because they really value even coming out of just part two, as they have more than enough background information to really start digging into the company," says Troy Crutcher, Master the Mainframe program manager, IBM Academic Initiative for IBM Z.

Journey to the Top

McKee first competed in Master the Mainframe in 2016. She was required to complete parts one and two for a mainframe course, but she didn't attempt part three. "I really wanted to change that and do my best in the competition at all three stages," she says, referring to her 2017 participation. "I wanted to prove to myself I could do it and keep up with my mainframe skills."

Under the impression that part three was also based on speed and accuracy, McKee finished the entire competition in two weeks. "I kind of binged on mainframe there for a couple of weeks, so I needed a break afterward. I will definitely pace myself next year," she says.

With a double major of a Bachelor of Science in business computer information systems and a Bachelor of Arts in decision sciences, McKee applied as much business logic as possible when completing the third part. She plans to use this tactic again next year, though she was also inspired by the creativity of her fellow champions. "It was amazing to hear from the other winners about what they did," she says.

The two overall winners alongside McKee were Sebastian Wind, who competed as a master's student at the University of Leipzig and also works with the European Mainframe Academy along with the Academic Mainframe Consortium, and Murilo Andrade from Brazil, who is currently working in a public office and intends to pursue an IT career upon completion of college.

> "Other girls out there also have similar role models in technology and when they see that, they think, 'Oh, I can do that too.' "

—Anna McKee, 2017 IBM Master the Mainframe winner

"It's really interesting that the only way to leverage a business today is through technology, so everyone at some point has to be a tech expert in the future," says Wind, who participated four times—winning twice in his region—but ultimately wanted to become a global winner for his final year of eligibility. "It's the crowning achievement of my efforts and helps me recruit more students for our mainframe education."

Wind added a challenge of his own when completing the third stage of the contest: "I did the final challenge on my own mainframe. The most challenging part was getting it from my garage down to my basement. It's an enterprise class z9*, so it was a lot of work. Then I had to repair it and get power connections."

Andrade was a regional winner in 2015, which led to an opportunity to work at IBM as a system specialist. "My interest in coding came when I was about 13 years old after my father gave me a Visual Basic book. When I started to study information systems, I saw an article in a magazine about the importance of mainframes and the COBOL language. Since then, I have been following news, posting on social networks and taking extracurricular courses on the subject," he says. "Although today I'm not working in the IT field, I'm always aware of what's going on for a future career."

'I Can Do That Too'

McKee learned about her win during her first week back at school for the spring semester. Although she participated in the competition during September 2017, the winners weren't announced until March 2018. "I was coming home from one of my night courses and I could tell it was going to be a really tough one, so I called my parents to talk about it," she recalls. They were still on the phone when she received the announcement email from IBM. "My parents were familiar with the contest and knew about all the hard work I had put into it, so they were ecstatic. It showed me that if I put my mind to something, I really can achieve almost anything I want."

Her historic win conveys that exact message to young girls and women everywhere as more women enter the technology industry. "It's pretty amazing to be the first female winner and it's something I feel really proud of," McKee says, noting that she's seen an increase in female attendance at meetings for the Association for Information Systems, an organization she belongs to. "I was looking around the classroom and it was 50 percent men and 50 percent women. It's really cool to see that change because when I started earlier in my college career, it was mostly just men in my classes."

> "It's pretty amazing to be the first female winner and it's something I feel really proud of."

—Anna McKee

McKee credits her success and inspiration to her role model: her mother. "My story isn't the only one, though," she says. "Other girls out there also have similar role models in technology and when they see that, they think, 'Oh, I can do that too.' "

To increase awareness about mainframe opportunities among more women, Master the Mainframe organizers also reach out to organizations such as the Society of Women Engineers, Girls Who Code, Women in Technology, Girl Scouts, Black Girls Code and TechGirlz to help spread the word. "Diversity is important in all walks of life. It's

great to have different opinions and rules of thought, and everyone collaborating together is epic," IBM's Crutcher says.

Filling the Skills Gap

The 2017 contest had 17,000 registrations spanning 126 countries and over 2,000 schools worldwide, compared with 11,000 registrations in 2016. "To hit 17,000 people and let them know the mainframe is still alive and vital is amazing," Crutcher says. "There's such a huge need for mainframers, and so many mainframe careers out there are readily available now."

Many contest participants have filled these positions. Lodewicus Westhuizen, who competed (and won) in 2015 and 2016, currently works at Rocket Software in Netherlands as a software engineer. He credits his employment with Rocket directly to the competition because of the networking opportunities it provided. "I always knew I wanted to be a software engineer, but I was interested in a lot of things. The competition made the choice clear for me. It has jump-started my career; without it, getting into a job straight out of university where you focus on mainframes would be harder."

What's even more important, Westhuizen adds, is that "mainframe developers and those with relevant skills are retiring, so soon we'll start seeing a gap in the mainframe skills department."

Mainframers of Tomorrow

The good news is that several contest participants are as young as the rules allow—13—and the younger they start, the sooner they can develop skills and learn about mainframe career paths. Ari Kenney, the 2016 second-place finisher for North America, has been competing since he was a high school freshman and was the second high schooler to win the contest in 2015. He looks forward to starting a mainframe career upon completing his education at the University of California, Berkeley, where he's currently in his third year after completing a summer internship at Rocket Software—another direct connection from the competition.

"I decided very early on that I wanted to do computer science, but getting so involved in the contest made it clear to me that the mainframe was a good career path because of all of the connections I made so quickly," he says. "The experience I've gotten from the contest has been invaluable at both mainframe-related activities and other general computer science knowledge-based activities. Before I heard of the contest, I had no idea what the mainframe was. Now I have more of an appreciation for how it's the backbone of everything and this behind-the-scenes look at how the world is run, and I never would have gotten a glimpse into that without the contest."

Kenney's course load didn't allow him the time to complete part three of the contest last year, but he plans to this year and was excited to read about McKee's win. "I think it's fantastic and I can't wait for a year where all of the winners are female. That would be incredible," he says. "I think through more female involvement we'll have more developments and more inventions and the world can be made a better place with more diverse opinions and outlooks on technology."

McKee completed a technical internship this summer and looks forward to focusing on her last year of undergraduate school as she toys with the idea of pursuing a master's degree in data science.

And she's already seeing doors of opportunity open. "A lot of people have reached out to me, and it's really cool to see that I have the skills that companies want. I'm the one who's always reaching out to companies, trying to get them to offer me a job or an internship, and it's weird to have that flip," she says.

About the author
Holly Eamon is an editor and writer based in Minneapolis, MN

Related Content

Sponsored Content

3 Unknown Risks in Your Resiliency Armor (https://ibmsystemsmag.com/IBM-Z/01/2019/Risks-in-Resiliency-Armor)
Application development (/application-development) Using Microservices on IBM Z With CICS Improves Flexibility and Reliability → (https://ibmsystemsmag.com/IBM-Z/03/2017/using-microservices-flexibility-reliability)
The Open Mainframe Project Expands Educational Opportunities for Linux on IBM Z Users → (https://ibmsystemsmag.com/IBM-Z/03/2017/open-mainframe-project-educational-linux-on-z)
Research (/research) IBM Research and Partners Help Traffic Run Smoothly in Madrid → (https://ibmsystemsmag.com/Trends/03/2017/ibm-research-traffic-madrid)