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How Chess Sharpens Your Mind and Math Skills

BEYOND THE CLAIM OF RANDOM SAMPLING

ENHANCING STUDENT COMPETENCIES THROUGH DATACAMP:
PYTHON PROGRAMMING WORKSHOP AT FSKM

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EXECUTIVE SUMMARY

In line with the rapid growth of information technology and the era of big data, mastering programming languages is no longer considered an added advantage but has become a fundamental necessity in education and careers. Recognising this need, the Faculty of Computer and Mathematical Sciences (FSKM), Universiti Teknologi MARA (UiTM), Negeri Sembilan Branch, took a meaningful initiative by organising the DataCamp: Python Programming Workshop. This program was successfully held on 13 and 20 June 2025 at Labs 1 and 2, FSKM. Figure 1 below shows the official poster for the workshop.

The main objective of this workshop was to introduce students to the basics of Python programming through an interactive, enjoyable, and practical approach. Python was chosen due to its strong standing as one of the most popular programming languages today, with wide applications in data analytics, machine learning, artificial intelligence, and modern system development. The faculty viewed this effort not only as an opportunity to enhance students' skills but also as a platform to open their minds to career pathways increasingly driven by data and technology.

Figure 1: Official poster of the DataCamp: Python Programming Workshop

LEARNING WITH DATACAMP

The workshop was conducted over two days of intensive learning, carefully structured to maximise student benefits. Throughout the program, six main sessions were conducted, covering essential topics such as an introduction to Python basics, data structures, file handling, basic data visualisation with Pandas and Matplotlib, an introduction to data science with Pandas and Numpy, and the increasingly relevant concept of Big Data across industries. Interestingly, the workshop concluded with a mini-project session, allowing students to apply the knowledge they had gained by analysing a real dataset and presenting their findings to peers and facilitators.

The workshop approach combined interactive lectures, live demonstrations using the DataCamp platform, and hands-on practice by participants. Each student was provided with individual access to DataCamp, an industry-based online learning platform offering up-to-date programming modules. This method made learning more flexible and allowed students to acquire skills at their own pace. Through this approach, they did not merely memorise syntax but also learned to understand the real-world applications of Python in data analysis.
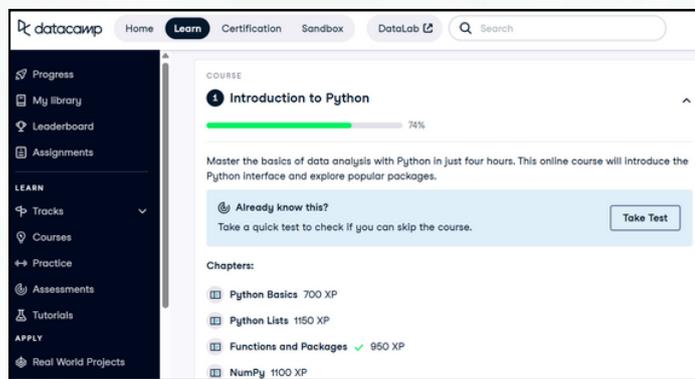
Figure 2: The online learning platform DataCamp provides structured Python lessons for the workshop.

To ensure effective delivery, two senior lecturers, Mr Mohd Azdi Maasar and Ms Zaitul Anna Melisa Md Yasin, were invited to lead the sessions. With their expertise and approachable teaching style, both facilitators successfully created an engaging and interactive learning environment, making complex technical topics easier to understand. Their presence not only provided academic value but also inspired students to further explore the world of programming.

MAKING AN IMPACT

The participation of 50 final-year students from the DSC551 course clearly reflected the positive engagement toward this program. Students attended with great enthusiasm and demonstrated active involvement throughout the workshop. Among the most significant achievements was the noticeable improvement in students' technical skills in Python, particularly in basic data analysis. Many students admitted that they now felt more confident in using Python as a problem-solving tool, both for academic assignments and as preparation for their future careers.

Figure 3: Participants actively engaged in hands-on Python programming exercises during the DataCamp workshop.

In addition to technical skill development, the workshop had a major impact on students' personal growth. The mini-project activity trained them to think analytically, work in groups, and present their results with confidence. These elements are vital in equipping students with the communication and technical skills demanded by industries. One participant even remarked, 'This workshop really opened my eyes to the fact that Python is not just for professional programmers, but also for anyone who wants to understand data and make better decisions.'

From the faculty's perspective, the program brought added value by generating income through participation fees and the issuance of certificates. More importantly, the successful organisation of this workshop opened doors for the faculty to build strategic collaborations with industry, particularly in terms of licensing, sponsorships and support for technology and data science-related programs. This achievement further strengthened the faculty's reputation as a proactive academic centre producing high-quality graduates.

NEXT STEPS AHEAD

To ensure the sustainability and effectiveness of future programs, several recommendations were proposed. These included providing printed modules to assist students with quick reference during sessions, increasing participation quotas to accommodate high demand, and involving more industry speakers to provide broader real-world perspectives. These suggestions reflect the aspiration to make future programs more comprehensive, inclusive, and impactful.

Figure 4: Participants receiving recognition for outstanding performance symbolise the spirit of encouragement and achievement fostered in the workshop.

Overall, the DataCamp: Python Programming Workshop successfully achieved its objectives. It not only strengthened students' foundations in Python programming but also boosted their self-confidence, sharpened their analytical thinking, and enhanced their digital literacy, which is highly essential in today's modern era. This program stands as clear proof that when academia merges with cutting-edge technology, the result is a meaningful, enjoyable, and industry-relevant learning experience.

It is hoped that similar workshops will continue and expand so that more students can benefit from them. With the faculty's ongoing commitment, the support of dedicated lecturers, and the unwavering enthusiasm of students, there is no doubt that UiTM will continue to produce graduates who are competitive, innovative, and well-prepared to face the challenges of an ever-changing workforce.

"The knowledge we master today is the bridge to success in the future."