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Teaching Reform of "Python Programming" for Accounting in the Context of Artificial Intelligence

——Discussion on Project Driven Teaching Mode

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Abstract: The development of artificial intelligence has raised the demand for talents with both computational thinking and accounting thinking and has put forward new requirements for the cultivation of accounting professionals. The article analyzes the existing problems in the current "Python programming" teaching, and then proposes a set of teaching reform plan based on the project-driven teaching mode, concerning the design of the teaching content, the teaching implementation process and the module assessment. We are hoping to effectively improve "Python programming" teaching for students of accounting.

Keywords: Python Programming; Project Driven; Artificial Intelligence

1. Training requirements of accounting practitioners under the background of artificial intelligence

The era of artificial intelligence has come, which has greatly changed the mode of people's life and work. At present, artificial intelligence in the field of accounting is mainly to help financial personnel to complete a large number of repetitive regularization work, but the financial department is looking forward to improving financial efficiency and providing decision support through artificial intelligence technology. The market demand for compound talents who not only understand accounting knowledge, but also master computer related knowledge will continue to increase. This puts forward new requirements and challenges for the cultivation of high-quality accounting talents in higher vocational colleges.

It is necessary to add new courses for accounting, especially in the field of computer, so as to make students transform into compound talents. Python programming language is an object-oriented explanatory language, which has the characteristics of free, simple syntax, high efficiency and open source. In the field of artificial intelligence, data mining and data analysis, Python is the most used language. At present, many colleges and universities offer the course of "Python programming" for non-computer majors. My school has set up the course of "Python programming" for accounting major.

2. Analysis of the current Python programming teaching

Although accounting major has paid attention to the cultivation of computer thinking ability, there are still some problems in the current teaching process, mainly reflected in the following aspects.

2.1 Students' computer foundation is weak

Students have learned accounting, cost accounting, economics and other courses, and have the relevant basic knowledge of

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accounting, but they have little contact with programming knowledge before, and the computer foundation is relatively weak. This course is very difficult for students.

2.2 The teaching staff mainly major in computer science

It is urgent to cultivate students' computer thinking to adapt to the era of artificial intelligence. There are few teachers who have both accounting and computer knowledge, so most of them are computer teachers who are actually engaged in the teaching task of Python programming. They have good computer knowledge, are more familiar with science and engineering students, but are not familiar with the characteristics of accounting students. They can't grasp the teaching rules of accounting students, and can't achieve good teaching effect.

2.3 The teaching content is relatively single, which can not reflect the accounting thinking

Computer professional teachers are familiar with Python programming, but the teaching task is relatively heavy. Facing students with different backgrounds and different basic levels, most of them adopt the same teaching content and mode. At the same time, computer teachers lack of accounting related knowledge, and can't combine accounting content for teaching, leading students to think that the content of learning is quite different from the major, and it is difficult to be used in practical work.

The above problems are reflected in the teaching process of "Python programming" of accounting major, which directly affects the cultivation of compound talents of accounting major, and it is difficult to cultivate talents with both accounting and computer thinking. In view of this, this paper attempts to project into the "Python programming" course of daily teaching, in order to integrate accounting thinking and computer thinking, and improve the comprehensive quality of students.

3. Teaching reform and practice of "Pythonprogramming" driven by project

Project driven teaching is based on the course content. Teachers construct project tasks close to the real application scene, so that students can complete the teaching tasks according to the project.

3.1 Teaching content design

According to the working scene of accounting, the teaching content of Python is selected, and the course is organized with project orientation. The course content includes five projects, and the teaching contents of the five projects are as follows.

Project 1: Unveiling Python. The project is divided into three tasks: Python language, Python development environment and print piggy page. Through this project, we hope that students can understand the characteristics and application of Python language, master the method of building a Python development environment, and master the programming basis of Python language.

Project 2: Manage sales orders. The project is divided into three tasks: distinguishing customers, calculating accounts receivable and counting sales performance. Through this project, we hope that students can master the order statement, cycle statement and selection statement in Python language, so as to manage the sales order. The final project is to input the customer name and order quantity through the keyboard, and give different discounts according to the customer's previous purchase records and order quantity, so as to calculate the accounts receivable and count the performance of each sales manager.

Project 3: Management procurement system. The project is divided into four tasks: creating a list of suppliers, building a tulle of raw materials, building a procurement system, and finding the optimal procurement scheme. Through this project, students are expected to master the characteristics, operation methods and common methods of string, list, tulle, set, dictionary and other data structures, so as to complete the management of purchasing system. The final completed project is to input suppliers and raw materials through the keyboard, and build a procurement system according to the supply prices of different suppliers and the sales prices of various raw materials. On this basis, the optimal procurement scheme is determined based on the sales.

Project 4: Obtaining financial data. The project is divided into four tasks: understand the source code of the web page, load the package, match the required data, download financial data. Through this project, students are expected to master the definition and call of regular expressions and functions, and use crawler technology to complete the project of downloading financial data from the website.

Project 5: Analysis of financial data. The project is divided into four tasks: understanding data, cleaning data, calculating financial indicators, and analyzing data. Through the project, students are expected to master the data cleaning and data processing technology of Python, so as to complete the analysis of the company's financial data.

3.2 Teaching process

Before the beginning of the course, release the new project content to the students through the relevant teaching platform, so that the students can understand the basic knowledge of the project. Students learn, practice and test through the relevant teaching

platform, while teachers track students' learning and collect students' questions, so as to make some adjustments to the content of the classroom.

In the formal teaching, the teaching content is usually introduced through daily life affairs or related knowledge points, and the key and difficult contents are explained and analyzed in detail, and the students are allowed to practice. For example, the calculation of accounts receivable in task 2 of project 2 involves the nesting of selection and cycle structure. We will not cycle by life, choose carefully, and Python language can continue to choose and infinite cycle to import project content. In the part of analysis, we introduce the usage of the "for" statement and the "while" statement in the loop structure. On this basis, we introduce the nesting of the loop statement and the selection statement. At the end of the explanation part, we enter the practical training stage.

After class, two or three students are required to form a project group to help each other solve the problems in the program and cultivate the sense of unity and cooperation. Students can ask questions, complete assignments and tests through communication tools and online teaching platform, while teachers can answer questions, guide and correct assignments through the platform.

3.3 Assessment and evaluation

In the assessment process, we have increased the ratio of usual performance, which currently accounts for 50% . In addition to the routine attendance, classroom performance and homework, we have added test results and financial analysis report results to urge students to take daily study seriously and improve their learning efficiency.

4. Conclusion

"Python programming" is a expansion course of accounting, and it is a new course of training new accounting talents under the background of artificial intelligence. In view of the problems in the existing teaching, based on the project driven mode, this paper puts forward a set of feasible teaching reform scheme combining accounting thinking and computer thinking from the design of teaching content, teaching implementation process to examination and evaluation, which can meet the needs of the training objectives of complex accounting talents under the background of artificial intelligence.

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