SouthWest University

Lab report

Couse name Principle of programming

Semester 2021 - 2022 - 1

Grade 2021 Class 4

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| Lab 1 | | | **Practicing on conditional statements and loops.** | | | | | |
| Issue Date | | 2021.11.10 | | | Experimental types | | □validation experiment,  □comprehensive experiment  ☑design experiment | |
| Goal  • You will practice using conditional statements and while loops.  Assignment  1. Write a program that uses a while loop to produce this pattern:    2. Write a program that uses a For loop to produce Chinese multipliction table | | | | | | | | |
| * Experimental contents and process  1. Assignment 1: We find that each line consists of many "\*"s, and increases with the number(2n-1) of lines(n). Note that there is no space after the last "\*", and the content of each line should be printed in the middle. 2. Assignment 2: After careful observation, it can be found that the two numbers to be multiplied in the multiplication table are the number of rows and the number of columns in the formula. Use two for statements to nest. | | | | | | | | |
| * Screen shots of the Python IDLE showing the output results of running your Lab code.  1. Assignment 1:      1. Assignment 2: | | | | | | | | |
| * Lab Code  1. Assignment 1:   for i in range(0, 20, 2):      count, str = 0, '\*'      while count < i:          str = str + ' \*'          count += 1      print('{:^40s}'.format(str))   1. Assignment 2:   for x in range(1, 10):      for y in range(1, x+1):          print('{}\*{}={:<4}'.format(x, y, x\*y), end='')      print('\n') | | | | | | | | |
| * Experimental summary/ Analysis   Through this experiment, we have clearly recognized the advantages and functions of the for() statement and the while() statement, thereby enhancing our practical energy for each function and proficiency in the language.  Through experiments, we have also improved our expression skills, problem-solving skills, and self-thought changes in discussions with classmates. At the same time, the experiment also improved our ability to resist frustration and practice.  We believe even more firmly, and experimentation will bring true knowledge. We have figured out the direction of the correct answer through repeated attempts, and solved the problems we encountered in the previous experiment with our amazing perseverance and clever mind. We always firmly believe that as long as we work hard, there will be no real problems in the world. | | | | | | | | |
|  | Criteria | | | | | | | scale |
| Goal | | | | | | | A B C D E |
| Process | | | | | | |
| Design | | | | | | |
| Algorithm | | | | | | |
| Code | | | | | | |
| Data/Results | | | | | | |
| summary | | | | | | |
| written | | | | | | |
| Score | | |  | | : | | |
| * Lab Evaluation Criteria   A: This lab is exceptional, working and meeting all of the specifications.The code is exceptionally well organized and very easy to follow.The code could be reused as a whole or each routine could be reused.The documentation is well written and clearly explains what the code is accomplishing and how.The program was delivered on time.The code is extremely efficient without sacrificing readability and understanding.  B: This lab is very good--works and produces the correct results and displays them correctly. It also meets most of the other specifications. The code is fairly easy to read. Most of the code could be reused in other programs. The documentation consists of embedded comment and some simple header documentation that is somewhat useful in understanding the code. The program was delivered within a week of the due date. The code is fairly efficient without sacrificing readability and understanding.  C: This lab is adequate, with only minor deficiencies. The program produces correct results but does not display them correctly. The code is readable only by someone who knows what it is supposed to be doing. Some parts of the code could be reused in other programs. The documentation is simply comments embedded in the code with some simple header comments separating routines. The code was within 2 weeks of the due date. The code is brute force and unnecessarily long..  D: This lab shows some effort but has at least one major deficiency.The program is producing incorrect results. The code is poorly organized and very difficult to read. The code is not organized for reusability. The documentation is simply comments embedded in the code and does not help the reader understand the code. The code was more than 2 weeks overdue. The code is huge and appears to be patched together.  E: This lab is poorly written and shows very little effort or understanding. | | | | | | | | |