**Exercises for Batch Programming**

**Pre-requisites:**

All batch scripts should contain the header inside the file at the top, which contains at least the information about the Author and last update date.

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The strings in the descriptions below are surrounded by double quotes, however, when the scripts print them, there must not be double quotes displayed if not necessary.

The solutions must not use other external software or external script. Only one .bat file is allowed for each problem.

**Exercises:**

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| **Name:** choice1.bat |
| **Description:**  Write a batch script to ask for the choice with prompt "What is your choice (Y/N)? ".  If the user enters "Y" or "y" or nothing, print "Hello" and end the script.  If the user enters "N" or "n", print "Bye" and end the script  Other choices, print "Incorrect" and end the script.  **Hints:** Use **set /p** and **if...else** |
| **Results:**  C:\BAT>**choice1**  What is your choice (Y/N)? y  Hello  C:\BAT>**choice1**  What is your choice (Y/N)? Y  Hello  C:\BAT>**choice1**  What is your choice (Y/N)? n  Bye  C:\BAT>**choice1**  What is your choice (Y/N)? N  Bye  C:\BAT>**choice1**  What is your choice (Y/N)?  Incorrect  C:\BAT>**choice1**  What is your choice (Y/N)? abc  Incorrect |

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| **Name:** choice2.bat |
| **Description:**  Write a batch script to ask for the choice with prompt "What is your choice (Y/N)? ".  If the user enters "Y" or "y", print "Hello" and end the script.  If the user enters "N" or "n", print "Bye" and end the script.  If the user enters nothing (just press ENTER), print "Nothing" and end the script.  Other choices, print "Incorrect" and end the script.  **Hints:** Use **set /p** and **if...else** |
| **Results:**  C:\BAT>**choice2**  What is your choice (Y/N)? y  Hello  C:\BAT>**choice2**  What is your choice (Y/N)? Y  Hello  C:\BAT>**choice2**  What is your choice (Y/N)? n  Bye  C:\BAT>**choice2**  What is your choice (Y/N)? N  Bye  C:\BAT>**choice2**  What is your choice (Y/N)?  Nothing  C:\BAT>**choice2**  What is your choice (Y/N)? abc  Incorrect |

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| **Name:** choice3.bat |
| **Description:**  Study more about label and goto in batch file.  Write a batch script to ask for the choice with prompt "What is your choice (Y/N)? ".  If the user enters "Y" or "y", print "Hello" and end the script.  If the user enters "N" or "n", print "Bye" and end the script.  If the user enters nothing (just press ENTER), print "Nothing" and ask for choice again.  Other choices, print "Incorrect" and ask for choice again.  **Hints:** Use **set /p**, **if...else**, label, and **goto** |
| **Results:**  C:\BAT>**choice3**  What is your choice (Y/N)? y  Hello  C:\BAT>**choice3**  What is your choice (Y/N)? Y  Hello  C:\BAT>**choice3**  What is your choice (Y/N)? n  Bye  C:\BAT>**choice3**  What is your choice (Y/N)? N  Bye  C:\BAT>**choice3**  What is your choice (Y/N)?  Nothing  What is your choice (Y/N)?  Nothing  What is your choice (Y/N)? abc  Incorrect  What is your choice (Y/N)?  Nothing  What is your choice (Y/N)? abc  Incorrect  What is your choice (Y/N)? xyz  Incorrect  What is your choice (Y/N)? asdf  Incorrect  What is your choice (Y/N)? YYY  Incorrect  What is your choice (Y/N)? Y  Hello |

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| **Name:** choice4.bat |
| **Description:**  Write a batch script to ask for the choice with prompt "What is your choice (Y/n)? ".  Note that the capital "Y" means default selection in case that the user just presses ENTER and lower case "n" means it is not a default.  If the user enters "Y" or "y", print "Hello" and end the script.  If the user enters "N" or "n", print "Bye" and end the script.  If the user enters nothing (just press ENTER), it will have the same result as pressing "Y",  i.e., print "Hello" and end the script.  Other choices, print "Incorrect" and ask for choice again.  **Hints:** Use **set /p**, **if...else**, label, and **goto** |
| **Results:**  C:\BAT>**choice4**  What is your choice (Y/n)? yes  Incorrect  What is your choice (Y/n)? Yes  Incorrect  What is your choice (Y/n)? No  Incorrect  What is your choice (Y/n)? abc  Incorrect  What is your choice (Y/n)?  Hello |

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| **Name:** ping\_check.bat |
| **Description:**  Use the command **ping /?** and study its options.  Use the command **del /?** and study its options.  Write a batch script to ping a target IP address defined by first parameter in the command line.  If the user does not specify the IP address, use the default IP=127.0.0.1.  Each ping should wait 1.5 seconds for the reply.  The number of pings should be 10 times.  The buffer size should be 32, 64, 2048, 4096, 32768, and 65000 bytes.  The result will be saved in a file named, ping\_<IP>\_<BufferSize>.txt  If we run the script again, the result should be only from the last run.  The results should be the same as the results given below as much as possible.  "Clearing old results..." means deleting the previous related output files.  **Hints:**  Use **%1** to get the command line parameter  Use **if** to check if it's empty or not,  Use **goto** to jump to some location in the code  Use **for** to repeatedly ping the target IP  Use **redirection (>, >>, 2>)** to redirect output to a file or drop it. |
| **Results:**  C:\BAT>**ping\_check**  Clearing old results...  Start ping 127.0.0.1 with several message sizes, it may take some minutes, please wait...  The ping result files are  ping\_127.0.0.1\_32.txt  ping\_127.0.0.1\_64.txt  ping\_127.0.0.1\_2048.txt  ping\_127.0.0.1\_4096.txt  ping\_127.0.0.1\_32768.txt  ping\_127.0.0.1\_65000.txt  C:\BAT>**ping\_check 10.240.180.70**  Clearing old results...  Start ping 10.240.180.70 with several message sizes, it may take some minutes, please wait...  The ping result files are  ping\_10.240.180.70\_32.txt  ping\_10.240.180.70\_64.txt  ping\_10.240.180.70\_2048.txt  ping\_10.240.180.70\_4096.txt  ping\_10.240.180.70\_32768.txt  ping\_10.240.180.70\_65000.txt  C:\BAT>**type ping\_10.240.180.70\_2048.txt**  Pinging 10.240.180.70 with 2048 bytes of data:  Request timed out.  Request timed out.  Ping statistics for 10.240.180.70:  Packets: Sent = 2, Received = 0, Lost = 2 (100% loss),  C:\BAT>**type ping\_127.0.0.1\_2048.txt**  Pinging 127.0.0.1 with 2048 bytes of data:  Reply from 127.0.0.1: bytes=2048 time<1ms TTL=128  Reply from 127.0.0.1: bytes=2048 time=2ms TTL=128  Ping statistics for 127.0.0.1:  Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),  Approximate round trip times in milli-seconds:  Minimum = 0ms, Maximum = 2ms, Average = 1ms |

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| **Name:** get\_ip.bat |
| **Description:**  Study ipconfig, findstr, pipe operator (vertical bar symbol), for /f with tokens.  Write a batch script to print only the first IP address listed in the output of ipconfig command.  The output should be the same as the example below as much as possible, but the IP address is your computer IP address.    **Hints:**  Use **ipconfig** to get the IP address information.  Use **findstr** to filter the lines.  Use **for /f with tokens** to get the part of line.  Use **goto :EOF** to end the script.  We don't have to define :EOF explicitly since it's reserved for the end of file. |
| **Results:**  C:\BAT>**get\_ip**  Your IP Address is: 172.16.8.25 |

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| **Name:** divide.bat |
| **Description:**  Find the result of 355/113 using a batch script.  The result should have 10 digits after the decimal point, no rounding.    **Hints:**  Needs math algorithm for division.  Use **set /a, if, goto**.  See <https://ss64.com/nt/if.html> |
| **Results:**  C:\BAT>**divide.bat**  3.1415929203 |

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| **Name:** counter.bat |
| **Description:**  Write a batch script to print the integers in specified range.  If no parameters are entered, it will print 1, 2, 3, ..., 10.  If only one parameter is entered, it will print 1, 2, 3, ... until that parameter inclusively.  If there are two or more parameters entered, it will take the first parameter as the start and the second parameter as the end inclusively. If they are equal, one number will be printed.  The second parameter could be less than the first parameter.  Assume that there are no invalid inputs from the user.    **Hints:**  Use **set /a**.  Use **goto**.  Use **if**.  See <https://ss64.com/nt/if.html> |
| **Results:**  C:\BAT>**counter.bat**  1  2  3  ...  10    C:\BAT>**counter.bat 3**  1  2  3    C:\BAT>**counter.bat 3 3**  3    C:\BAT>**counter.bat 3 5**  3  4  5    C:\BAT>**counter.bat 5 3**  5  4  3    C:\BAT>**counter.bat -2 3**  -2  -1  0  1  2  3 |

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| **Name:** next\_day.bat |
| **Description:**  Write a batch script to find the date of the next day.  If there is no parameter given, find the date for tomorrow.  If the parameter is given, find the date next to that day. The parameter is in YYYYMMDD format.  Assume that YYYY always 4 digits, no leading zero.    **Hints:**  Use **if** and **%** operator.  Check the conditions very well.  Beware of the leap year.  See <https://superuser.com/questions/78496/variables-in-batch-file-not-being-set-when-inside-if> |
| **Results:**  If today is 20221112.    C:\BAT>**next\_day.bat**  20221113    C:\BAT>**next\_day.bat 20221112**  20221113    C:\BAT>**next\_day.bat 20221130**  20221201    C:\BAT>**next\_day.bat 20221231**  20230101    C:\BAT>**next\_day.bat 19991231**  20000101    C:\BAT>**next\_day.bat 20220228**  20220301    C:\BAT>**next\_day.bat 21000228**  21000301    C:\BAT>**next\_day.bat 20240228**  20240229    C:\BAT>**next\_day.bat 20000228**  20000229 |