Fundamentals Of Computing
Week 10 Tutorial
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Group L4CG4

Instruction:

Complete all questions in 1 hr.

Let's get started with nice and easy examples of Batch script:

1. Open your favorite text editor. Save it as filename.bat (All files) right click on the file and edit> type >
   @echo off
   echo Hello World!
   pause
   Run it. You have created your first batch file.
   Write the function of set up commands @Echo off and pause.
   Answer:

```
filename.bat
1   @echo
2   echo Hello World!!
3   pause
```

   Function of:
   - **@echo:** This command is used in command prompt or Windows PowerShell to control whether or not command lines are displayed as they are executed.
   - **Pause:** This command is used in the command prompt or Windows PowerShell to temporarily stop the execution of a batch file or script. When the "pause" command is executed, the command prompt or PowerShell will display the message "Press any key to continue…" and will wait for user to press any key on the keyboard before continuing with the execution of the batch file or script.

2. Create a batch program which takes two numeric inputs from the user and checks whether they are equal or not.
   Answer:

```
T2.bat
1   @echo off
2   SET /p a=enter num1:
3   SET /p b=enter num2:
4   IF %a%==%b% (ECHO numbers are equal)^
5   ELSE (ECHO numbers are not equal)
6   pause
```

Output:

```
enter num1:2
enter num2:2
numbers are equal
Press any key to continue . . .
```

3. Create a batch program which takes a numeric input from the user and checks whether the input is odd or even.

Answer:

T3.bat

```
@echo off
set /p a=enter num1:
set /a b=%a% %%2
IF %b%==0 (ECHO it is even)^
ELSE (ECHO it is odd)
pause
```

Output:

```
enter num1: 4
it is even
Press any key to continue . . .
```

4. Create a batch program which prints natural numbers 1 to 10 using for loop.

Answer:

T4.bat

```
@echo off
FOR /L %%i IN (1, 1, 10) DO ECHO %%i
pause
```

Output:

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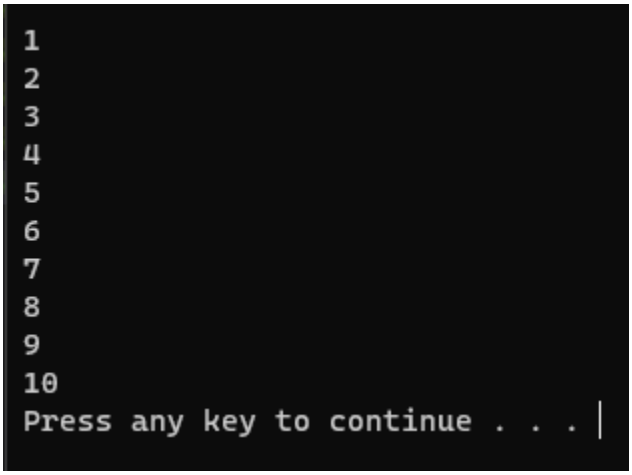

5. Create a simple calculator using a batch script. Which takes two number and third inputs can be “add” ,“sub”, “mul”, “div” and displays the result after calculation and displays error message for any other input in the third. eg: if first input is 2 , second input is 3 and third input is add then it displays the result 5. Note: use function
   Answer:

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T5.bat

```
@echo off
set /p a=enter a number:
set /p b=enter another number:
set /p calculation=enter calculation(add, sub, mul, div):
IF %calculation%==add CALL :plus EXIT /b
IF %calculation%==sub CALL :minus EXIT /b
IF %calculation%==mul CALL :product EXIT /b
IF %calculation%==div CALL :division ELSE (ECHO error!!)
EXIT /b
:plus
set /a c=%b%+%a%
echo %c%
pause
EXIT /b
:minus
set /a c=%b%-%a%
echo %c%
pause
EXIT /b
:product
set /a c=%b%*%a%
echo %c%
pause
EXIT /b
:division
set /a c=%b%/%a%
echo %c%
pause
EXIT /b
```

Output:

```
enter a number:2
enter another number:2
enter calculation(add, sub, mul, div):div
1
Press any key to continue . . .
```

6. Write a batch program to swap mouse keys.
   Answer:

7. The following script is the malicious script responsible for system crash. Explain how it works and explain how you can protect your pc from system crash in Windows OS and Linux.
   It is not permanently harmful for computers but annoying.
   Warning: do not run this script.

   :S
   Start %0
   Goto S

   Answer:
   The script provided is a simple infinite loop that causes the script to restart. When you run the script, it will restart the script and change the command prompt or Windows PowerShell to the "S" label. This causes the script to restart indefinitely, resulting in an infinite loop. This can result in an infinite loop with high CPU usage. Slowing or even crashing one's system. To protect the PC from this type of system crash, you we can use the "End Task" option in the Task Manager to end the script or the command prompt or Windows PowerShell process. In Linux, we can use "kill" command to end the script or terminal process running the script. Another way to protect the PC from system crash is by always practicing examining and understanding the script before running it. We can also use Antivirus and endpoint protection software, which can detect and block malicious scripts from running on your computer.