Shell programs, or scripts, are the means by which the Linux shell is used as a programming language. Linux commands and shell language control constructs are entered into a file by the programmer, then the file is executed as a command and interpreted just as if the commands had been typed on the shell command line. Thus, shell scripts provide a way to automate commonly executed groups of commands – but shell scripts can do much more than this. Although many simple tasks are automated with small scripts, large scripts hundreds of lines long are very common. These larger scripts are written by system administrators, database administrators, testers, utility programmers, and others to create utilities that are largely composed of powerful Linux commands, such as find, sed, awk, and hundreds of others.

In this course, students learn to read, write, and debug bash shell scripts. Back at work they can greatly increase productivity by automating repetitive tasks (for themselves or others), and by creating specifically tailored utilities designed to meet their precise needs. Students will read and write many bash scripts in this class, which will additionally increase their overall Linux knowledge and skills.

Course Objectives:

- Explain the purpose of shell programs.
- Recognize applications for shell programs.
- Design and write shell programs of moderate complexity, using variables, special variables, flow control mechanisms, operators, arithmetic, and functions.
- Debug shell programs using several different debugging techniques.
- Write "real-time" shell scripts that respond to and handle asynchronous events with the trap command.
- Manage multiple concurrent processes to achieve higher utilization of UNIX.

Audience: Linux or UNIX users, programmers, and system administrators.

Prerequisites: *Fundamentals of Linux* or *Fundamentals of UNIX*

Number of Days: 3 days