# Lesson Planning Template

## LESSON CONTEXT

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| **Lesson Topic** |
| Intro to Unix Systems and Bash Scripting |
| **Intended Lesson Audience** |
| First year computer science students (with a first year programming course of experience) |
| **Lesson Length** |
| 50 min |
| **Lesson Format (face-to-face, blended, or online)** |
| Online Asynchronous |
| **Teaching Support and Resources Available to You for the Lesson** |
| My course webpage and server (both administrated by myself) |
| **Faculty / Department / Organization Parameters and Expectations for the Lesson** |
| None |
| **Lesson Objectives** |
| - Learn how to ssh into a remote server  - Learn how to navigate and manipulate a Unix filesystem  - Learn how to execute a custom bash script |

## LESSON PLAN

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| **Lesson Title** |
| Intro to Unix Systems and Bash Scripting |
| **Bridge-in / Introduction** |
| Unix is a family of Operating Systems that conform to a certain set of specifications (i.e. the Single Unix Specification). The terminology Un\*x or Unix-like is often used to refer to the MANY systems that follow most of the Unix specifications but don’t fully conform to the standard. Examples of Unix-like systems include MacOS and Linux varient systems. The fast majority of servers used by developers today run Unix-like systems (primarily Linux systems) and are accessible only through a command line interfaces. Since they all (nearly) conform to the same set of specifications using the command line for one Unix-like system will be very similar to another, so being able to use a Unix command line is a very useful and transferable skill. In this lesson, you will learn how to access a Linux server via the command line, create and manipulate files on the server, and create and execute a script containing these commands. |
| **Intended Learning Outcome(s)** |
| By the end of the lesson, learners should be able to:   |  | | --- | | 1. - Use ssh/scp to access remote servers 2. - Use Un\*x command line interfaces to navigate, create and manipulate filesystems 3. - Create a simple bash script 4. - Apply changes to permissions and modes of Un\*x filesystems | |
| **Pre-Assessment** that is aligned with the lesson intended learning outcome(s) |
| **- Do you know how to access a terminal on your personal computer?**  **- Do you know basic Un\*x commands like cd, ls and mkdir?**  **- Do you know how to use a command line based text editor like nano, vi/vim or emacs?**  **- Do you know how to execute a bash script from the command line?** |
| **Topics and Content Items** (e.g., readings, videos), with an estimated time commitment noted for each item. Ensure these are aligned with the lesson intended learning outcomes. |
| **TOPIC: How to ssh into a server**  **Content Item [estimated time commitment]: Video [5 min]** |
| **TOPIC: How to navigate/create a Un\*x filesystem**  **Content Item [estimated time commitment]: Video [15 min]** |
| **TOPIC: How to edit text files from a command line based editor**  **Content Item [estimated time commitment]: Video [10 min]** |
| **TOPIC: How to create and execute a simple bash script**  **Content Item [estimated time commitment]: Video [10 min]** |
| **Participatory Learning Activity / Activities** (e.g., reflection, worksheet, discussion forum post). Ensure these are aligned with the lesson intended learning outcome(s). |
| **Each topic’s video is “follow along”, i.e. the student is directed to perform the actions done in the video, pausing as necessary** |
| **Post-Assessment** that is aligned with the lesson intended learning outcome(s) |
| **Formative Assessment: student will be asked to please submit a few sentences on what they’re favourite part of the lesson was and what should be improved.**  **Summative: The student will be given tasks to complete on the server at the end of each video, these will be checked for completion and each assigned a PASS/FAIL mark for succesful completion. All of the skills taught in this video will also be necessary to complete the course projects.** |
| **Summary** |
| **A review of the key skills you should know by the end of this lesson:**  **- Access a remote server through the terminal through**  **ssh** **username@host.com**  **- Navigate/manipulate a Un\*x filesystem with the following commands**  **cd: change directories**  **ls: list contents of a directory**  **mkdir: create a new directory**  **touch: create a file**  **cp: copy files**  **cp -r: copy directories**  **mv: move files or directories**  **rm: delete file (premanently)**  **rm -r: delete directory (premanently)**  **- Edit a file from the command line**  **for example using nano to create/edit a file named file.txt, just enter:**  **nano file.txt**  **save using CTRL-O and exit using CTRL-X**  **- Make a bash file, for example a file named test.sh with the following content**  **#!/usr/bin**  **echo “Hello World”**  **and execute it, with the command**  **sh test.sh** |
| **References** |
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| **Additional Resources** |
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