

# CE 350 Linux Utilities and Shell Scripting

## Project Description

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### Introduction

This document contains all the relevant information on your CE 350 project. Please read carefully.

The project has the following dates:

- 26th of April, project announcements (this document),
- 10th of May, 11:00 a.m., due date and time for project assignments,
  - 10 points off for every week you are late.
- 7th of June, 11:00 a.m., due date and time for project delivery.
  - Project will not be graded if you are past the due date and time.

### Projects

You have to develop one of the following projects or one that you propose. You are strongly encouraged to propose your own project. If you want to propose a project, then you have to send me (kaya.oguz@ieu.edu.tr) a proposal explaining what the project is about. If I accept it, then you can develop your own project. **Please notice that you must have your project set before 10th of May, so do not send me this proposal at the very last minute. I have the right to deny your proposal, or make some changes. So send it as soon as possible so that we can discuss the project using email.**

You can develop the project on your own or with a team of friends. The number of people in your team cannot be more than three. I will not accept any project that contains four students. There is no exception.

The project **must** use **Linux utilities** and must be a **shell script**. I will not install any additional software or setup servers (such as Apache or MySQL).

The project **must** use the **dialog** command. We did not discuss this command during the lectures, you have to learn it on your own. This command provides dialog windows in the terminal. The project must get input using the dialog command, and must use its screens to display all the information. To learn how to use it, read its manual (man dialog), visit the home page at: <https://invisible-island.net/dialog/>, and this page that lists a few examples: [https://linuxcommand.org/lc3\\_adv\\_dialog.php](https://linuxcommand.org/lc3_adv_dialog.php)

There will be an assignment in the Blackboard system for this project, you are probably reading this document from that assignment. **Upload your script and any additional files that your script requires as a tarball. I will not accept ZIP or any other format.** You must also upload a project report written in a formal language. In this report, showcase the features of your project. Explain how it works. **The report must be in PDF format, and I will not accept any format other than PDF.**

**Warning:** Write your names on your project report and your script files. Blackboard renames these files when we download them in bulk. If there are no names, then I will not be able to grade anything.

## Project List

These are the projects that will be acceptable. You can add extra features if you want to.

### Diary

You can use your computer to keep a private diary. When saved with a password, the diary can also be kept from prying eyes.

Your program should help the user select a date and create a daily entry for the date. It should save the entry as a file under a new name, possibly using a date-time stamp along with a password. The user should also be able to read previous entries.

**Hint:** You can use one of the compression utilities to support the encryption with password. ZIP files have support for password protection; of course you are welcome to roll your own.

### LinZip

Compression is an important tool for a computer user. When compressed, files take smaller space on the hard drive. There are many compression algorithms and programs. Some of the most popular ones are ZIP and RAR. On Linux systems, gzip is used along with TAR, thus the extension tar.gz, where tar packs, without compression, and gzip, similar to zip and tar, compresses the archive. These are called tarballs.

Your program should be able to use at least two compression formats. The user should be able to select the files/folders to be compressed. When a compressed file is opened with the script, the user should be able select the files to be extracted.

### Address Book

Create an address book that will list, search, add, remove and update contacts. The script should be able to save and load contacts from a file. The format of the file is up to the student. The contact should at least contain name, surname, e-mail, phone number and address fields. However, it's better if it supports more fields. For example every contact may have more than one phone number, or another field of personal web page might also be helpful.

The script should also be able to import and export to and from a popular address book format, like vcard, Google CSV or ldif.

### Download Manager

A typical download manager downloads files simultaneously. Your script should be able to process a list of URLs, should be able to keep a list of downloaded files in history and should use the progress bar (gauge in dialog) to display the current download progress. You can use wget or any other command line tool to download files.

# Grading

The grading will be 60% for the script, and 40% for the project report. I will take several points off in the following cases.

- The script is not commented;
- The script is not nicely formatted with indentations;
- The script does not follow good practices,
  - You have to use meaningful variable names,
  - Do not use magic numbers; that is, constant numbers in the source code must be used as variables,
  - There are hard coded absolute paths in the code that point to your own home directory; such as /home/koguz/Desktop/project/content.txt; this path will not be available on other systems. However, full paths regarding system-wide files might be acceptable if the system documentation clearly states that all systems have the file in the same exact location. One example is **/var/log/messages**.
- If you do not send an email about your project assignment and your team before 10th of May, 11:00 a.m., then you will lose 10 points for every week that you are late.
  - It is possible that you do not get along with your team and want to start a new project. Then, this rule applies once again. For example, after two weeks, you notice that you want to do another project on your own. Then the team breaks into two teams. Both teams are now new teams, and they have to inform me that there are two teams working on two projects. Both teams will be losing points depending on the time of the email sent to me.
- If your project report is not formatted as a formal document. Please use Times New Roman font with 10 to 12pts of font size with single line spacing. The margins must be standard. The titles must use bold font and must be larger depending on their level. Check the formatting of this document.
- The language must be formal. Do not use any abbreviations such as “etc.”
- I cannot grade them if you do not write your names in these source code and your project report. Blackboard system changes the name of the files, so do not rely on the filename for your names. Write them inside the file.
- If your project report or your source code is taken off the internet, then, without warning, I will take disciplinary action. You can defend yourself to the disciplinary court, I will not listen to anything you have to say.