Assignment on Shell Script

The students of CSE 322 course (July 2017 term) were asked to submit an assignment following the guideline given below:

Guideline (10% marks are given if you follow the instructions carefully.)
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1. Submission Steps:
   a. In your local machine, create a new folder; the name of the folder should be your 7 digit roll number.
   b. You can code your solution in multiple files, if you want. Put all the source code and other required files in the folder created in (a)
   c. Finally, compress the folder created in (a) to produce a .zip file. The name of the .zip file should be your 7 digit roll number.
   d. Submit the .zip file in Moodle.
2. Do not copy code. You will get negative score otherwise.
3. On the evaluation day, you must be able to explain your code properly. **You must bring your code on that day too.**

Now, you are one of the evaluators of the course and your task is to provide the submission marks (out of 10). Say, you have downloaded all the submissions as a zip file named "**SubmissionsAll.zip**". You are also given a class roster as a csv file "**CSE_322.csv**". The roster contains names and student IDs of students enrolled in this course.

Checking everything manually is a laborious task, so you decided to write a shell script. You thought of the procedure step by step and wrote it down in a notebook. The steps are:

1. The directory where you are working should be clean. Unzip **SubmissionsAll.zip** there**.** You will find a zip file for each submission. You may delete **SubmissionsAll.zip** or move it to some backup folder.

2. Each zip file is given a name using the following convention:
"Student Name"_fileID_assignsubmission_file_**fileName**

Student Name: the full name of the student. It may contain space and some whitespace characters (there won't be any underscore **(_)** character).

fileID: A random integer.

fileName: Name of the zip file given by the student.

So, if a student submits the assignment properly, the studentId can be found from the name of the zip file. (For example, **Aaiyeesha Mostak_2998885_assignsubmission_file_1405011.zip**)

Now, you decided to list the student IDs you were unable to retrieve from the zip file names (but these are in the roster). They either did not submit or did not follow the instructions. So, they are getting **0** in submission marks. Let's call it the **Absentee list**.

3. Create a new empty directory named "**Output**".

4. Create a new directory named "**Extra**" (Delete if one already exists) inside "**Output**".

4. Now you unzip each zip file and for each unzip operation, follow the steps below:

- Remember the name of the zip file.
- Create a temporary directory. Make sure it is empty.
- Extract the zip file to the temporary directory.
- See if the temporary directory contains only one subdirectory with name containing student id. (for example, a directory named **1405011 or 1405047_Offline_322**)

  o If student ID found,
    - If the directory name is only the student ID (i.e., 1405011) and contain nothing else, the student will get **10 marks**.
    - Otherwise, Keep only the student ID as the name of the directory (i.e., rename 1405047_Offline_322 as 1405047). The student will get **5 marks**.
    - In both cases, move the directory (named with student ID) inside "**Output**" directory.

  o Otherwise, your task is to retrieve the student ID. You may first take a look at the name of the zip file. If not found, extract the student's name from the name of the zip file; **search in roster to find student ID.** The search should be case insensitive. Remember, as they did not follow the instructions given, all of them will get 0 in submission marks.

    If multiple instances found (more than one students having same name), try to identify with the help of absentee rolls (There maybe cases like: 2 student IDs match, one is in the absentee list, another is not there).

    If single instance found (or you were able to identify it uniquely): rename the directory with student ID. Delete student ID from absentee rolls.

    Else (No search result/ multiple results and you cannot identify it uniquely), rename the directory with student's name and move it to "**Extra**".

- If you find multiple subdirectories in the temporary folder (after unzipping), you may create a folder with student ID (If it can be tracked from the name of the zip file) or student's name, move these subdirectories there. Then you can either move the entire directory to "**Output**" or "**Output/Extra**" accordingly.

- Delete the temporary directory.
- Delete the zip file.

Now, time to write the shell script. You should be able to correctly populate the "**Output**" directory so that for each submission for which student ID was identified, there is a folder with the student ID as its name. The submissions for which you were unable to track student IDs will stay in "**Extra**" directory.

You also need to generate two text files (contents should be sorted by student ID):

(a) Marks.txt (Submission marks for each student in the roster)
(b) Absents.txt (Students who either did not submit or their submission could not be tracked)

If you need help working with csv files using LINUX command:
https://bconnelly.net/working-with-csvs-on-the-command-line/

The LINUX command **cut** might also be very helpful.