MM2090 : Introduction to Scientific Computing
Apr-Jun-2021

Assignment – 2

Instructions for submission remain same as for first assignment. Don't forget to provide your name, roll number and assignment number on the first page of the PDF you are uploading.

[1] Write a program that takes a four digit integer as a command line input. The script should give elegant message if the input is not an integer of right width or a float or a string. Convert the four digit integer to a string based on the following rules for replacement:

Digit	Characters to replace
0	0
1	1
2	A or B or C
3	D or E or F
4	G or H or I
5	J or K or L
6	M or N or O
7	P or Q or R or S
8	T or U or V
9	W or X or Y or Z

Generate all the combinations of four character words that are possible for the given input. [5 Marks]

Output required: The code, screenshots showing error response, list of words for two different inputs.

Application: One can remember a four digit PIN using a word or acronym that could mean something for the user.

[2] Create a make file that has the following behavior when invoked as given below.

make	Output the usage pattern as help
make list	Recursively list all files in the current directory modified in the last n days
make backup	Copy all the files listed as above to a temporary directory and create a tar file for it. Name of the tar file shall be like backup-31May2021.tar if the command was invoked on 31st May, 2021.

The value of n for the number of days should be configurable using a shell variable $MODPERIOD. Default can be taken as 5 days. Except to copy the Makefile to a directory, the user is not expected to give any further input by hand. [5 Marks]

Output required: The code, screenshots showing its behavior

Application: One can place scripts in the cron directory to run them automatically at certain times. One can have a script there to backup the files that are being currently worked on to avoid accidental deletion.

[3] Pick one “flavour” of linux distribution (preferably unique in your group) and trace the timeline of its development. [3 Marks]

Output: Year wise release versions with names if applicable, hardware platforms supported, desktop environments available, kernel versions supported, one USP if applicable.

Application: One should be aware of specialized operating systems that come bundled with applications for a specific domain of usage. It helps get work done faster.

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