

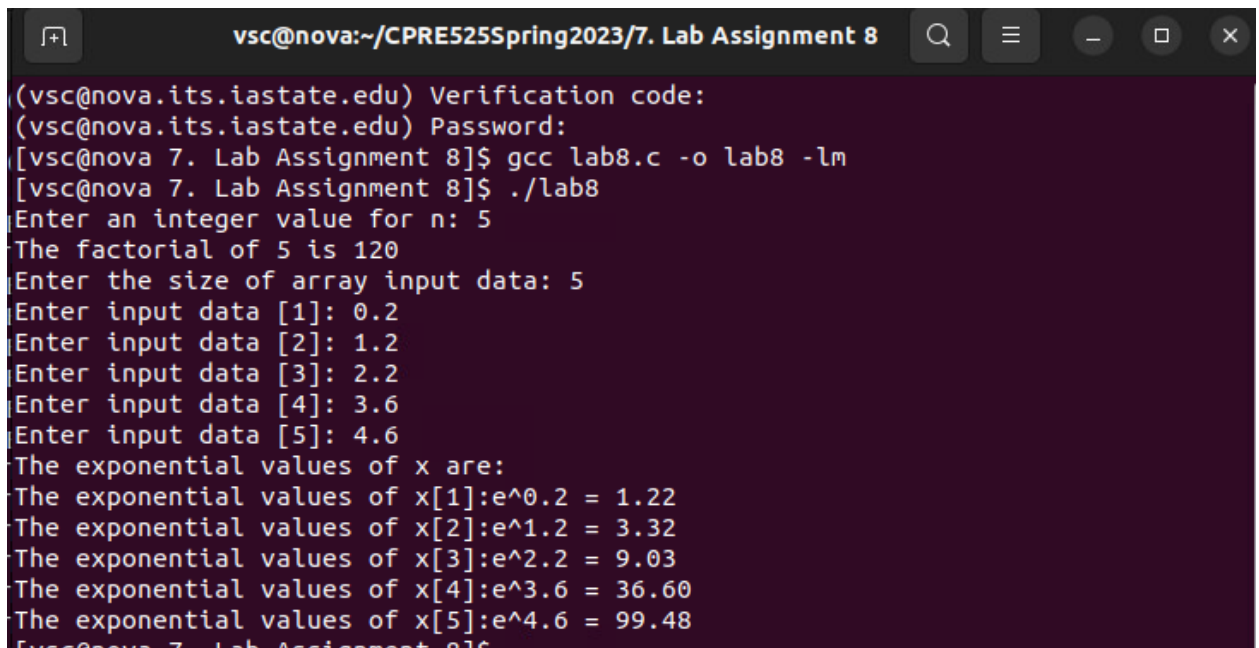
Lab Assignment 8 (02/09/2023)
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Tasks:

1. Develop a script("main program") with the name lab8.c: computing factorial of an integer n and exponential of a real number x. With your own functions, compute an array exp(x) for x=0.2,1.2,2.2,3.6,4.6(input these values using scanf), printf the array to the screen, and save the array to the data file.
 - For computing factorial(n), define a function with recursive calls.
 - For computing exp(x), define a function with Taylor expansions, where the constant $e=2.718281828459$, $x_0=\text{round}(x)$ is the closest integer to x, and use the pow() from math. h for computing powers.
2. Compile the file and submit the source code and a screenshot
3. Push the code to GitHub.
4. File transfer and Up-to-date in Nova cluster

Submission Files and Results:

1. Here is the results screenshot for task 1



```
(vsc@nova.its.iastate.edu) Verification code:
(vsc@nova.its.iastate.edu) Password:
[vsc@nova 7. Lab Assignment 8]$ gcc lab8.c -o lab8 -lm
[vsc@nova 7. Lab Assignment 8]$ ./lab8
Enter an integer value for n: 5
The factorial of 5 is 120
Enter the size of array input data: 5
Enter input data [1]: 0.2
Enter input data [2]: 1.2
Enter input data [3]: 2.2
Enter input data [4]: 3.6
Enter input data [5]: 4.6
The exponential values of x are:
The exponential values of x[1]:e^0.2 = 1.22
The exponential values of x[2]:e^1.2 = 3.32
The exponential values of x[3]:e^2.2 = 9.03
The exponential values of x[4]:e^3.6 = 36.60
The exponential values of x[5]:e^4.6 = 99.48
[vsc@nova 7. Lab Assignment 8]$
```

2. Push the code to GitHub
 - a. Git status check

```

(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023/7
. Lab Assignment 8$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   ../3. Lab Assignment 4/__pycache__/myfuncs.cpython-39.pyc

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    ../6. Lab Assignment 7/6. Lab Assignment 7 Submission.pdf
    ./

no changes added to commit (use "git add" and/or "git commit -a")

$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   7. Lab Assignment 8/data.txt
    new file:   7. Lab Assignment 8/lab8
    new file:   7. Lab Assignment 8/lab8.c

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   3. Lab Assignment 4/__pycache__/myfuncs.cpython-39.pyc

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    6. Lab Assignment 7/6. Lab Assignment 7 Submission.pdf

```

b. Git add and git status

```

(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$
git add .
(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$
git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   3. Lab Assignment 4/__pycache__/myfuncs.cpython-39.pyc
    new file:   6. Lab Assignment 7/6. Lab Assignment 7 Submission.pdf
    new file:   7. Lab Assignment 8/data.txt
    new file:   7. Lab Assignment 8/lab8
    new file:   7. Lab Assignment 8/lab8.c

```

c. Git committed the files

```

(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$
git commit -m 'Adding Files'
[main dab1b8a] Adding Files
5 files changed, 111 insertions(+)
create mode 100644 6. Lab Assignment 7/6. Lab Assignment 7 Submission.pdf
create mode 100644 7. Lab Assignment 8/data.txt
create mode 100755 7. Lab Assignment 8/lab8
create mode 100644 7. Lab Assignment 8/lab8.c
(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$

```

d. Git push


```
(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$
git push
Username for 'https://github.com': Saichandana999
Password for 'https://Saichandana999@github.com':
Enumerating objects: 16, done.
Counting objects: 100% (16/16), done.
Delta compression using up to 8 threads
Compressing objects: 100% (10/10), done.
Writing objects: 100% (11/11), 538.41 KiB | 14.55 MiB/s, done.
Total 11 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
To https://github.com/Saichandana999/CPRE525Spring2023.git
7104637..dab1b8a  main -> main
(base) ubuntu@ubuntu-vm:~/Documents/chandanaWorkspace/CPRE 525 Spring 2023/CPRE525Spring2023$
```










e. Final GitHub repository

Saichandana999 / CPRE525Spring2023 Private

<> Code Issues Pull requests Actions Projects Security Insights Settings

main 1 branch 0 tags Go to file Add file <> Code

 **Saichandana999 Adding Files** dab1b8a 1 minute ago 9 commits

	1. Lab Assignment 2	Adding my files	2 weeks ago
	2. Lab Assignment 3	Adding my files	2 weeks ago
	3. Lab Assignment 4	Adding Files	1 minute ago
	4. Lab Assignment 5	5. Lab Assignment 6	last week
	5. Lab Assignment 6	Adding files	2 days ago
	6. Lab Assignment 7	Adding Files	1 minute ago
	7. Lab Assignment 8	Adding Files	1 minute ago
	LICENSE	Initial commit	2 weeks ago
	README.md	Initial commit	2 weeks ago

3. Files transferred and up-to-date in Nova cluster.

```
[vsc@nova ~]$ tree
.
├── CPRE525Spring2023
│   ├── 1. Lab Assignment 2
│   │   ├── 1. Lab Assignment 2 Screen Shots for both 2 and 3 steps.pdf
│   │   ├── demo_myfuncs.py
│   │   └── myfuncs.py
│   ├── 2. Lab Assignment 3
│   │   ├── 2. Lab Assignment 3 Screen Shots.pdf
│   │   └── demo_pythonlist.py
│   ├── 3. Lab Assignment 4
│   │   ├── 3. Lab Assignment 4 Submission.pdf
│   │   ├── demo_myfuncs.py
│   │   ├── myfuncs.py
│   │   ├── __pycache__
│   │   │   └── myfuncs.cpython-39.pyc
│   ├── 4. Lab Assignment 5
│   │   ├── 4. Lab Assignment 5 Submission.pdf
│   │   ├── gauss_elimination_solve.py
│   │   └── practice_numpyLinearAlgebra.py
│   ├── 5. Lab Assignment 6
│   │   ├── 5. Lab Assignment 6 Submission.pdf
│   │   ├── gauss_elimination_cpre525.py
│   │   ├── mylinalg.py
│   │   ├── __pycache__
│   │   │   └── gauss_elimination_cpre525.cpython-310.pyc
│   ├── 6. Lab Assignment 7
│   │   ├── 6. Lab Assignment 7 Submission.pdf
│   │   ├── Factorial
│   │   └── Factorial.c
│   ├── 7. Lab Assignment 8
│   │   ├── data.txt
│   │   ├── lab8
│   │   └── lab8.c
│   ├── LICENSE
│   └── README.md
```

10 directories, 24 files