# Project1 : myBashProj

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# File list : myBashProj.c , extraBashProj.c, README and Makefile.

#information:

This program includes the files myBashProj.c (the base project), extraBashProj.c (extra credit), make file and the README file.

To run this code for base project, type "make" then execute ./myBashProj object with commands.

For the extra credit part, type "make extra" then execute ./extraBashProj with commands.

# Contribution:

Each member equally contributed to this project. Meetings were held regularly for this project.

# Brief overview of logic (myBashProj.c):

main - Core of the program. Goes through the input and executes the commands. First checks if parallel then executes the appropriate block. A fork is made after a process is found using make\_index. If it is the child process, the command is executed. If the -p flag was not set, the parent waits.

is\_parallel - Checks to see if the -p flag has been set.

number\_of\_executions - Finds the number of processes to be executed.

Make\_index - Makes an array with the start and end indices of the process to be executed.

#Brief overview of logic (extraBashProj.c):

Main - Works similarly to the base program but checks if it has to be executed sequentially process by process.

Is\_parallel - Checks whether the current process has to be executed sequentially.

number\_of\_executions and make\_index have the same purpose.

# Test cases used:

1. ./myBashproj /bin/cat file1 file2 "&" /bin/ls -l "&" /bin/echo "Hello"

2. ./myBashproj -p /bin/cat file1 file2 "&" /bin/ls -l "&" /bin/echo "Hello"

3. ./myBashproj -P /bin/cat file1 file2 "&" /bin/ls -l "&" /bin/echo "Hello"

4. ./myBashproj -p /bin/cat file1 file2 "&" /bin/ls -l "&" /bin/echo "Hello"

5. ./myBashProj /bin/cat file1 file3 "&" /bin/ls -l "&" /bin/date "&" /bin/env

6. ./myBashProj -p /bin/date "&" /bin/ls -l "&" /bin/date

7. ./myBashProj /bin/id "&" /bin/ls -l "&" /bin/date

8. ./myBashProj -p /bin/top "&" /bin/ls -l "&" /bin/date

1. ./extraBashproj /bin/cat file1 file2 "&&" /bin/ls -l "&" /bin/echo "Hello"

2. ./extraBashproj /bin/cat file1 file2 "&" /bin/ls -l "&&" /bin/echo "Hello"

3. ./extraBashproj /bin/cat file1 file2 "&&" /bin/ls -l "&&" /bin/echo "Hello"

4. ./extraBashproj /bin/cat file1 file2 "&" /bin/ls -l "&" /bin/echo "Hello"

5. ./extraBashproj /bin/cat file1 file3 "&&" /bin/ls -l "&" /bin/date "&" /bin/date

6. ./extraBashproj /bin/id "&" /bin/ls -l "&" /bin/date

7. ./extraBashproj /bin/top "&" /bin/ls -l "&" /bin/date

#Examples:

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $ ./myBashProj -p /bin/echo "hello" "&" ./btree.o 10 "&" /bin/cat file1 file2 "&" /bin/date "&" /bin/ls -l

hello

Mon Feb 25 10:40:49 CST 2019

tree size: 10

root number: 83

hello my name is

Dongha Kang

total 75

-rwx------ 1 kangx637 CSEL-student 8640 Feb 17 16:58 btree.o

-rwx------ 1 kangx637 CSEL-student 12944 Feb 25 10:34 extra

-rwx------ 1 kangx637 CSEL-student 12952 Feb 25 10:40 extraBashProj

-rw------- 1 kangx637 CSEL-student 3209 Feb 25 10:36 extraBashProj.c

-rw------- 1 kangx637 CSEL-student 17 Feb 17 16:42 file1

-rw------- 1 kangx637 CSEL-student 12 Feb 17 16:42 file2

-rw------- 1 kangx637 CSEL-student 306 Feb 24 15:30 Makefile

-rwx------ 1 kangx637 CSEL-student 12856 Feb 25 10:40 myBash

-rwx------ 1 kangx637 CSEL-student 12864 Feb 25 10:40 myBashProj

-rw------- 1 kangx637 CSEL-student 3292 Feb 25 10:39 myBashProj.c

-rwx------ 1 kangx637 CSEL-student 8528 Feb 24 15:46 practice

-rw------- 1 kangx637 CSEL-student 393 Feb 24 15:45 practice.c

-rwx------ 1 kangx637 CSEL-student 16688 Feb 17 18:03 '-std=c99'

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $ ./myBashProj /bin/echo "hello" "&" ./btree.o 10 "&" /bin/cat file1 file2 "&" /bin/date "&" /bin/ls -l

hello

tree size: 10

root number: 79

hello my name is

Dongha Kang

Mon Feb 25 10:40:55 CST 2019

total 75

-rwx------ 1 kangx637 CSEL-student 8640 Feb 17 16:58 btree.o

-rwx------ 1 kangx637 CSEL-student 12944 Feb 25 10:34 extra

-rwx------ 1 kangx637 CSEL-student 12952 Feb 25 10:40 extraBashProj

-rw------- 1 kangx637 CSEL-student 3209 Feb 25 10:36 extraBashProj.c

-rw------- 1 kangx637 CSEL-student 17 Feb 17 16:42 file1

-rw------- 1 kangx637 CSEL-student 12 Feb 17 16:42 file2

-rw------- 1 kangx637 CSEL-student 306 Feb 24 15:30 Makefile

-rwx------ 1 kangx637 CSEL-student 12856 Feb 25 10:40 myBash

-rwx------ 1 kangx637 CSEL-student 12864 Feb 25 10:40 myBashProj

-rw------- 1 kangx637 CSEL-student 3292 Feb 25 10:39 myBashProj.c

-rwx------ 1 kangx637 CSEL-student 8528 Feb 24 15:46 practice

-rw------- 1 kangx637 CSEL-student 393 Feb 24 15:45 practice.c

-rwx------ 1 kangx637 CSEL-student 16688 Feb 17 18:03 '-std=c99'

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $ ./extraBashProj /bin/echo "hello" "&&" ./btree.o 10 "&" /bin/cat file1 file2 "&" /bin/date "&&" /bin/ls -l

hello

Mon Feb 25 10:41:30 CST 2019

hello my name is

tree size: 10

root number: 80

Dongha Kang

total 75

-rwx------ 1 kangx637 CSEL-student 8640 Feb 17 16:58 btree.o

-rwx------ 1 kangx637 CSEL-student 12944 Feb 25 10:34 extra

-rwx------ 1 kangx637 CSEL-student 12952 Feb 25 10:40 extraBashProj

-rw------- 1 kangx637 CSEL-student 3209 Feb 25 10:36 extraBashProj.c

-rw------- 1 kangx637 CSEL-student 17 Feb 17 16:42 file1

-rw------- 1 kangx637 CSEL-student 12 Feb 17 16:42 file2

-rw------- 1 kangx637 CSEL-student 306 Feb 24 15:30 Makefile

-rwx------ 1 kangx637 CSEL-student 12856 Feb 25 10:40 myBash

-rwx------ 1 kangx637 CSEL-student 12864 Feb 25 10:40 myBashProj

-rw------- 1 kangx637 CSEL-student 3292 Feb 25 10:39 myBashProj.c

-rwx------ 1 kangx637 CSEL-student 8528 Feb 24 15:46 practice

-rw------- 1 kangx637 CSEL-student 393 Feb 24 15:45 practice.c

-rwx------ 1 kangx637 CSEL-student 16688 Feb 17 18:03 '-std=c99'

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $ echo "hello" && ./btree.o 10 & cat file1 file2 & date && ls -l

[1] 5125

[2] 5126

hello

Mon Feb 25 10:43:59 CST 2019

tree size: 10

hello my name is

root number: 87

Dongha Kang

total 58

-rwx------ 1 kangx637 CSEL-student 8640 Feb 17 16:58 btree.o\*

-rwx------ 1 kangx637 CSEL-student 12944 Feb 25 10:34 extra\*

-rw------- 1 kangx637 CSEL-student 3209 Feb 25 10:36 extraBashProj.c

-rw------- 1 kangx637 CSEL-student 17 Feb 17 16:42 file1

-rw------- 1 kangx637 CSEL-student 12 Feb 17 16:42 file2

-rw------- 1 kangx637 CSEL-student 324 Feb 25 10:43 Makefile

-rwx------ 1 kangx637 CSEL-student 12856 Feb 25 10:40 myBash\*

-rw------- 1 kangx637 CSEL-student 3292 Feb 25 10:39 myBashProj.c

-rwx------ 1 kangx637 CSEL-student 8528 Feb 24 15:46 practice\*

-rw------- 1 kangx637 CSEL-student 393 Feb 24 15:45 practice.c

-rwx------ 1 kangx637 CSEL-student 16688 Feb 17 18:03 '-std=c99'\*

[1]- Done echo "hello" && ./btree.o 10

[2]+ Done cat file1 file2

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $

kangx637@csel-kh4250-38:/home/kangx637/4061/Project1 $ ./extraBashProj /bin/echo "hello" "&&" ./btree.o 10 "&" /bin/cat file1 file2 "&" /bin/date "&&" /bin/ls -l

hello

Mon Feb 25 10:44:49 CST 2019

tree size: 10

root number: 9

hello my name is

Dongha Kang

total 66

-rwx------ 1 kangx637 CSEL-student 8640 Feb 17 16:58 btree.o

-rwx------ 1 kangx637 CSEL-student 12944 Feb 25 10:34 extra

-rwx------ 1 kangx637 CSEL-student 12952 Feb 25 10:44 extraBashProj

-rw------- 1 kangx637 CSEL-student 3209 Feb 25 10:36 extraBashProj.c

-rw------- 1 kangx637 CSEL-student 17 Feb 17 16:42 file1

-rw------- 1 kangx637 CSEL-student 12 Feb 17 16:42 file2

-rw------- 1 kangx637 CSEL-student 324 Feb 25 10:43 Makefile

-rwx------ 1 kangx637 CSEL-student 12856 Feb 25 10:40 myBash

-rw------- 1 kangx637 CSEL-student 3292 Feb 25 10:39 myBashProj.c

-rwx------ 1 kangx637 CSEL-student 8528 Feb 24 15:46 practice

-rw------- 1 kangx637 CSEL-student 393 Feb 24 15:45 practice.c

-rwx------ 1 kangx637 CSEL-student 16688 Feb 17 18:03 '-std=c99'