Computer Networks, Spring 2026

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Lab 1: C Revision

In this lab, you will review programs in C. *This lab is to be done individually.*

1 Mandatory part: Simple C Programming

1. Write, compile and execute a simple C program that prints `Hello World!` on screen.
2. Modify the previous code so that it asks the user to input his/her name and prints `Hello` followed by the input string.
3. Command line arguments Understand the code and complete the assignment stated in the skeleton code `command_line_arguments.c`

2 Graded homework: File input and output

The following code reads from a file one character at a time.

```
#include <stdio.h>
#include <stdlib.h>

int main(){

     /* Pointer to the source file */
     FILE *src;

     /* File is read one character at a time*/
     char c;

     /* Opening source file in read mode*/
     src = fopen ("sample.txt", "r");
     if( src == NULL ){
            printf("File not found. Exiting.\n");
            exit(EXIT_FAILURE);
     }

     /* Read src until end-of-file char is encountered */
     while( (c = fgetc(src)) != EOF ){

          printf("%c", c);
     }

     fclose(src);

     return 0;
}
```

1. Understand, compile and run the code. You can create your own file for testing or download the `sample.txt` file.

2. Modify the code so that a user can supply the filename from command line using `-i filename` switch. Further, if the user does not supply the filename, your program should attempt to read `sample.txt` by default.

3. Finally, modify the code to copy an input file to an output file. The user may supply the output filename using `-o outfile` switch, else output the copy to `sample_out.txt` by default.

3 Graded homework: Process creation

Write a program that when executed creates two child processes using `fork()` system call where one child process prints date and the other displays the contents of the folder that contains the program. Further, all three processes print their PID and identify themselves as parent, child 1 and child 2 prior to printing anything else.

4 Evaluation

☐ Can implement a specified switch. TA: _____

☐ Can implement file I/O. TA: _____

☐ Can use `fork()` system call. TA: _____