LAB 3 - TASK 6 through TASK 7
icopy / Reserved Words & Library Calls

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COMP-232: Programming Languages
California State University, Channel Islands
September 10, 2025
Hard Due Date: September 19, 2025

In Lab 3, we will complete the following tasks:

1. Task 6 – icopy using errno
2. Task 7 – Reserved Words & stdio.h Library Calls

TASK 6 - icopy

In this task, you will write an interactive copy utility called **icopy** and will handle errors by checking the value errno. This utility will be similar to the **cp** command but will prompt the user for the file name to read in and the file name to write out.

Enter the filename to read:
Enter the filename to write:

Read in one character from the file you entered above, then write the same one character out to the file named above until there is no more data to read.

Make sure you close the input file and output file before the program ends.

When opening a file to read or write, check to see if errno is NULL, which indicates an error has occurred. The fopen errors to check are summarized below.

EACCES   Search permission is denied on a component of the path prefix, or the file exists and the permissions specified by mode are denied, or the file does not exist and write permission is denied for the parent directory of the file to be created.

EINTR   A signal was caught during the execution of fopen().

EISDIR   The named file is a directory and mode requires write access.

ELOOP   Too many symbolic links were encountered in resolving path.

EMFILE   There are {OPEN_MAX} file descriptors currently open in the calling process.

ENAMETOOLONG   The length of the filename exceeds PATH_MAX or a pathname component is longer than NAME_MAX.

ENFILE   The maximum allowable number of files is currently open in the system.

ENOENT   A component of filename does not name an existing file or filename is an empty string.

For each error above, write out the error name from above and a helpful error description which identifies the name of the file entered by the user. For example, if NULL is returned and errno equals EACCESS, you can print out:

    ERROR: EACCES seen. Check file permissions to file no_access.txt.

Below are examples of using icopy:

```
john@oho:~/LAB3.CODE$ ls -l
total 36
-rw-r--r-- 1 john john     6 Feb  8 23:23 hello
-rwxr-xr-x 1 john john 17192 Feb  9 00:01 icopy
-rwxr-xr-x 1 john john  2091 Feb  8 23:57 icopy.c
-rw-r--r-- 1 john john    59 Feb  9 00:04 input.txt
d--------- 1 john john  4096 Feb  8 23:53 no_access.dir
---------- 1 john john     0 Feb  8 23:50 no_access.txt
-rw-r--r-- 1 john john    27 Feb  9 00:01 output.txt
-rw-r--r-- 1 john john    27 Feb  8 23:58 outtest.txt
```

john@oho:~/LAB3.CODE$ **more input.txt**
Be yourself.
Everyone else is taken.
-- Oscar Wilde

john@oho:~/LAB3.CODE$ **icopy**
Enter the file to read: **input.txt**
Enter the file to write: **output.txt**

john@oho:~/LAB3.CODE$ **more output.txt**
Be yourself.
Everyone else is taken.
-- Oscar Wilde

john@oho:~/LAB3.CODE$ **icopy**
Enter the file to read: **abc.txt**
   ERROR: ENOENT seen. The file abc.txt does not exist.
icopy will now exit.

john@oho:~/LAB3.CODE$ **icopy**
Enter the file to read: **no_access.txt**
   ERROR: EACCES seen. Check file permissions to file no_access.txt.
icopy will now exit.

john@oho:~/LAB3.CODE$ **icopy**
Enter the file to read: **input.txt**
Enter the file to write: **no_access.txt**
   ERROR: EACCES seen. Check file permissions to file no_access.txt.
icopy will now exit.

TASK 7. Reserved Words & stdio.h Library Calls

The purpose of this assignment is to practice using reserved words and stdio.h library calls in a program.

Your program does not have to do anything useful except to demonstrate the use of reserved words and the stdio.h library calls at least once.

You do not need to implement an application.

To receive full credit, you must implement ALL of the following C programming reserved words and C programming library calls.

1. Need to use the following C programming reserved words in your program at least once:

C Programming Reserved Words			
break	double	inline	static
case	else	int	switch
char	enum	long	typedef
const	extern	register	union
continue	float	return	unsigned
default	for	short	void
do	if	sizeof	while

Need to use the C programming library calls in your program at least once:

stdio.h			
fclose	fputc	ftell	puts
fflush	fputs	getchar	sprintf
fgetc	freopen	printf	srand
fgetpos	fscanf	putc	sscanf
fgets	fseek	putchar	tempfile
fopen	fsetpos	rewind	ungetc
fprintf	getc	scanf	

To learn more about each library call above, it is **highly recommended** that you read and understand the man commands, like:

% man fclose

% man fflush

You can also google the above function calls to view how to use library calls from tutorial sites.