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Be sure that `tmpnam`'s argument points to an array of at least `L_tmpnam` characters. Also, be careful not to call `tmpnam` too often; the `TMP_MAX` macro (defined in `<stdio.h>`) specifies the maximum number of temporary file names that can potentially be generated by `tmpnam` during the execution of a program. If it fails to generate a file name, `tmpnam` returns a null pointer.

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## File Buffering

```
int fflush(FILE *stream);
void setbuf(FILE * restrict stream,
            char * restrict buf);
int setvbuf(FILE * restrict stream,
            char * restrict buf,
            int mode, size_t size);
```

Transferring data to or from a disk drive is a relatively slow operation. As a result, it isn't feasible for a program to access a disk file directly each time it wants to read or write a byte. The secret to achieving acceptable performance is *buffering*: data written to a stream is actually stored in a buffer area in memory; when it's full (or the stream is closed), the buffer is "flushed" (written to the actual output device). Input streams can be buffered in a similar way: the buffer contains data from the input device; input is read from this buffer instead of the device itself. Buffering can result in enormous gains in efficiency, since reading a byte from a buffer or storing a byte in a buffer takes hardly any time at all. Of course, it takes time to transfer the buffer contents to or from disk, but one large "block move" is much faster than many tiny byte moves.

The functions in `<stdio.h>` perform buffering automatically when it seems advantageous. The buffering takes place behind the scenes, and we usually don't worry about it. On rare occasions, though, we may need to take a more active role. If so, we can use the functions `fflush`, `setbuf`, and `setvbuf`.

`fflush`

When a program writes output to a file, the data normally goes into a buffer first. The buffer is flushed automatically when it's full or the file is closed. By calling `fflush`, however, a program can flush a file's buffer as often as it wishes. The call

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```
fflush(fp);      /* flushes buffer for fp */
```

flushes the buffer for the file associated with `fp`. The call

```
fflush(NULL);    /* flushes all buffers */
```

flushes *all* output streams. `fflush` returns zero if it's successful and EOF if an error occurs.