

## CSI 333 – Programming at the Hardware-Software Interface

### Handout 6.1

The following program is an example to illustrate the use of `stdio` functions `getchar` and `putchar`. The program reads characters from `stdin`. It filters out the vowels (upper and lower case) from the input file; that is, it writes each character that is *not* a vowel to `stdout`.

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```
/* We include <ctype.h> so that the function "tolower" can be used. */
#include <stdio.h>
#include <ctype.h>

int is_vowel(int); /* Prototype of function used. */

int main(void) {
    int c;          /* To read chars from stdin using getchar. */

    /* Read characters from stdin, filter out vowels and */
    /* write the other characters to stdout.           */

    while ((c = getchar()) != EOF) {

        if (!is_vowel(c))
            putchar(c);

    } /* End of while. */
    return 0;
} /* End of main. */

int is_vowel(int c) {

    /* Returns 1 if parameter c is a vowel (upper or lower case) */
    /* and 0 otherwise.                                           */

    /* First, convert c to lower case, if it is an upper case letter. */
    c = tolower(c);

    /* Now, we need to check only whether c is a lower case vowel. */
    if ((c == 'a') || (c == 'e') || (c == 'i') || (c == 'o') || (c == 'u'))
        return 1;
    else return 0;
} /* End of is_vowel. */
```