# lab13

```c
// EE231002 Lab13. Text Decoding
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#include <stdio.h>  // Standard input and output library.

int main(void)      // Called at program startup.
{
    int state = 0;  // Range 0~3 (every 4 char read in as a whole cycle).
    char new;       // Buffer, store a char newly read in.
    char x, y;      // 8-bit data (0x00~0x3F). Store latest two char converted.
    char tab[0x3F + 1] = "ABCDEFGHIJKLMNOPQRSTUVWXYZ" // Table: convert "new" to
                         "abcdefghijklmnopqrstuvwxyz" //  8-bit data (0x00~0x3F)
                         "0123456789+/";              //  and store it into "x".
    scanf("---begin---\n");                 // Ignore the first line.
    new = getchar();                        // Read first char in second line.
    while (new != '=' && new != '-') {      // Stop if the char is '=' or '-'.
        y = x;                              // Free "x" to store the next 8-bit.
            x may not be initialized.
        for (x = 0x00;                      // Look up the table and convert
             tab[(int)x] != new;            //  "new" to 8-bit data (0x00~0x3F)
             x++) ;                         //  and store the data into "x".
        if (state > 0)                      // When collected two 8-bit data.
            putchar(y << (state * 2) |      // Print the bits out as char after
                    x >> (6 - state * 2));  //  shifting and "ORing" them.
        if (state == 3) state = 0;          // Update to next state and make
        else state++;                       //  sure that it's in the range 0~3.
        while ((new = getchar()) == '\n') ; // Read in the next char, skip '\n'.
    }
    return 0;                               // Normal program termination.
}
```

[Return] is provided.
[Efficiency] can be improved.

Score: 90