```
/*
 * This is a free program sample that may be reproduced in any form.
 * The author's information should be retained to preserve its identity.
 *
 * Date written: November 14, 2003
 * Written by:   Peraphon Sophatsathit
 * Department of Mathematics, Faculty of Science, Chulalongkorn University.
 * email: Peraphon.S@chula.ac.th
 * http://pioneer.netserv.chula.ac.th/~sperapho
 *
 * Computer Systems (2301274) class supplement.
 * Description: This is a quick and dirty example created to illustrate
 *          how 'fgets' and 'strtok_r' make a perfect combination to
 *          parse a line of input string into individual tokens for
 *          subsequent processing.
 */

#include    <stdio.h>
#include    <string.h>

#define     EQ(a, b)    (strcmp(a, b) == 0)
#define     Bsize       BUFSIZ            /* can be changed          */
#define     Small       (Bsize/2)         /* can also be changed      */
#define     Sep         " \t\n()"         /* to make '()' separaters */
#define     BYE         "bye"
#define     CHAO        99
#define     Item        8
#define     Normal      0

int         parse_token(char *);

int
main(void)
{
      char  tmp[Bsize];

      printf("\nenter text (type \"%s\" to quit) ->", BYE);
      while (fgets(tmp, Bsize, stdin) != NULL)
      {
            if (parse_token(tmp) == CHAO)
                  break;
            printf("\nenter text (type \"%s\" to quit) ->", BYE);
      }
      printf("\n");
      return Normal;
}
```

```
/*
 * The code is fairly straightforward, so no explanation is necessary.
 */
int
parse_token(char *tmp)
{
      int   rt_code = Normal;
      int   counter = 0;
      char  out_tok[Small], buffer[Small];
      char  *p, *q;

      q = buffer;
      p = strtok_r(tmp, Sep, &q);
      while (p != NULL)
      {
            strcpy(out_tok, p);
            counter++;
            if (EQ(out_tok, BYE))
            {
                  rt_code = CHAO;
                  break;
            }
            printf("<%s> ", out_tok);
            if ((counter + 1) % Item == 0)
                  printf("\n");
            p = strtok_r(NULL, Sep, &q);
      }
      printf("\n");
      return rt_code;
}
```