

ANSI C Solution for Problem #2

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

#define FALSE 0
#define TRUE 1
#define STRSIZ 128

typedef char string[ STRSIZ ];

/* ===== */

void add( const char *a, const char *b, char *c ) {
    int i = strlen( a ), j = strlen( b ), k = 0, l = 0;
    while ( i + j > 0 ) {
        c[ k ] = a[ --i ] + b[ --j ] + 1 - '0';
        l = 0;
        while ( c[ k ] > '9' ) { c[ k ] -= 10; l += 1; }
        c[ ++k ] = '\0';
    }
    for ( i = 0, j = strlen( c ) - 1; i < strlen( c ) / 2; i++, j-- ) {
        k = c[ i ];
        c[ i ] = c[ j ];
        c[ j ] = k;
    }
}

/* ===== */

int cycle( const char *a, const char *b ) {
    string c;
    strcpy( c, a );
    strcat( c, a );
    return strstr( c, b ) != NULL;
}

/* ===== */

int cyclic( const char *a ) {
    string b, c;
    int i;
```

```

    strcpy( b, a );
    for ( i = 1; i < strlen( a ); i++ ) {
        add( a, b, c );
        if (!cycle( a, c )) return FALSE;
        strcpy( b, c );
    }
    return TRUE;
}

/* ===== */

int main( void ) {
    string s;
    FILE *in = fopen( "cyclic.in", "r" ), *out = fopen( "cyclic.out", "w" );
    while (fgets( s, STRSIZ, in ) != NULL) {
        s[ strlen( s ) - 1 ] = '\0';
        fprintf( out, "%s is%scyclic\n", s, cyclic( s ) ? " " : " not " );
    }
    fcloseall();
    return 0;
}

```