```c
#include <stdio.h>
#include <stdlib.h>

//-------------------------------------------------------------
// Read a polynomial from stdin.  degree is an out parameter.
// Format:
//   degree
//   c_0
//   c_1
//   ...
//   c_degree
//-------------------------------------------------------------

double* readPolynomial(int* degree) {
  double* pPoly;
  int n;

  if ( 1 != scanf("%d", degree) ) return NULL;

  pPoly = (double*)malloc( (*degree+1) * sizeof(double) );
  if ( !pPoly ) return NULL;  // out of memory!

  for ( n=0; n<=*degree; n++ ) {
    scanf("%lf", &pPoly[n] );
  }

  return pPoly;
}

//-------------------------------------------------------------
// evaluatePolynomial
//   returns value of polynomal at x
//-------------------------------------------------------------

double evaluatePolynomial(double* pPoly, int degree, double x) {
  int n;
  double xFactor = 1.0;
  double result = pPoly[0];

  for ( n=1; n<=degree; n++ ) {
    xFactor *= x;
    result += pPoly[n]*xFactor;
  }

  return result;
}

//-------------------------------------------------------------
// printPolynomial
//-------------------------------------------------------------

void printPolynomial(double* pPoly, int degree ) {
  int n;

  printf("Polynomial: ");
  for ( n=0; n<=degree && pPoly[n]==0; n++ ); // skip initial elements with 0 coeff
icient
  if ( n <= degree ) {
    if ( n == 0 ) printf(" %lf", pPoly[n]);
    else          printf(" %lfx**%d", pPoly[n], n);

    for ( n=n+1; n<=degree; n++) {
      if ( pPoly[n] != 0.0 ) printf(" + %lfx**%d", pPoly[n], n);
    }
  }
  else {
    printf("0");
  }
  printf("\n");
}

//-------------------------------------------------------------
// main()
//   Reads a polynomial and then evaluates it.  (End with EOF.)
//-------------------------------------------------------------

int main(int argc, char* argv[]) {
  int degree;
  double* pPoly;
  double x;

  while (1) {
    printf("\nInput a polynomial: ");
    pPoly = readPolynomial( &degree );
    if ( !pPoly ) break;

    // first, just print it out
    printf("\n");
    printPolynomial( pPoly, degree );

    // now sit in loop evaluating it.  (End with EOF.)
    while (1) {
      printf("x: ");
      if (1 != scanf("%lf", &x) ) break;
      printf("%lf\n", evaluatePolynomial(pPoly, degree, x) );
    }

    // done with this polynomial
    free(pPoly);
  }

  return 0;
}
```