newtonBackwardInterpolation.c

```c
#include<stdio.h>

int fact(int n) {
    if (n == 1)
        return 1;
    else
        return (n * fact(n - 1));
}

int main() {
    int n, i, j, k;
    float v = 0, p = 1, h, s, xp, bd[50], y[50], x[50];
    printf("Enter number of data: ");
    scanf("%d", &n);
    printf("Enter interpolation point: ");
    scanf("%f", &xp);
    printf("Enter data:\n");
    for (i = 1; i <= n; i++) {
        printf("x[%d] = ", i);
        scanf("%f", &x[i]);
        printf("y[%d] = ", i);
        scanf("%f", &y[i]);
    }
    h = x[1] - x[0];
    s = (xp - x[n - 1]) / h;
    for (i = 0; i < n; i++) {
        bd[i] = y[i];
    }
    for (i = n - 1; i > 0; i--) {
        for (j = 0; j < i; j++) {
            bd[j] = (bd[j + 1] - bd[j]);
        }
    }
    v = bd[n - 1];
    for (i = 1; i < n; i++) {
        p = 1;
        for (k = 1; k <= i; k++) {
            p = p * (s + k - 1);
        }
        v = v + (bd[n - i - 1] * p) / fact(i);
    }
    printf("Interpolated value: %f\n", v);
    return 0;
}

```