#include <stdio.h>

#include <string.h>

// Defines the different slabs for the electricity bill.

typedef struct {

int min\_units;

float rate\_per\_unit;

} Slab;

// Defines the different features of the electricity bill.

typedef struct {

float fixed\_charge;

float surcharge;

Slab \*slabs;

int num\_slabs;

} Features;

// Calculates the electricity bill for a given number of units consumed and features.

float calculate\_electricity\_bill(int units\_consumed, Features \*features) {

// Calculate the cost of the first few units.

float cost = 0;

for (int i = 0; i < features->num\_slabs; i++) {

if (units\_consumed >= features->slabs[i].min\_units) {

cost += features->slabs[i].rate\_per\_unit \* (units\_consumed - features->slabs[i].min\_units);

units\_consumed = features->slabs[i].min\_units;

}

}

// Calculate the cost of the remaining units.

if (units\_consumed > 0) {

cost += features->slabs[features->num\_slabs - 1].rate\_per\_unit \* units\_consumed;

}

// Add the fixed charge and surcharge.

cost += features->fixed\_charge + features->surcharge;

return cost;

}

// Prints the electricity bill.

void print\_electricity\_bill(int units\_consumed, Features \*features) {

float bill = calculate\_electricity\_bill(units\_consumed, features);

printf("Electricity bill\n");

printf("Units consumed: %d\n", units\_consumed);

printf("Cost per unit: %.2f\n", features->slabs[0].rate\_per\_unit);

printf("Fixed charge: %.2f\n", features->fixed\_charge);

printf("Surcharge: %.2f\n", features->surcharge);

printf("Total bill: %.2f\n", bill);

}

int main() {

// Define the features of the electricity bill.

Features features = {

.fixed\_charge = 100,

.surcharge = 0.2,

.slabs = (Slab[]) {

{100, 2.5},

{200, 3.5},

{300, 4.5},

},

.num\_slabs = 3,

};

// Get the number of units consumed from the user.

int units\_consumed;

printf("Enter the number of units consumed: ");

scanf("%d", &units\_consumed);

// Print the electricity bill.

print\_electricity\_bill(units\_consumed, &features);

return 0;

}