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Maxwell Maia

21236277

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#include <stdio.h>

#include <string.h>

#include <math.h>

float readInTime();

float roundTime(float timeIn);

float price(float time);

void printPriceTime(float time, float price);

float dayRate = 23.9;

float nightRate = 12.6;

void main()

{

float time = 0.0;

time = readInTime(); //get time from user

printf("Time = %0.2f\n", time); //time time

printf("Rounded up time = %0.2f\n", roundTime(time)); //print rounded time

printPriceTime(roundTime(time), price(roundTime(time))); //print time and price

}

float readInTime() //asks for user input and returns time

{

float hour = 0.0;

float minute = 0.0;

float time = 0.0;

printf("Enter current hour: "); //get the hour

scanf\_s("%f", &hour);

if (hour < 0) //check hour ranges

{

hour = 0;

}

if (hour > 24)

{

hour = 24;

}

printf("Enter current minute: "); //get the minute

scanf\_s("%f", &minute);

if (minute < 0) //check minute ranges

{

minute = 0;

}

if (minute > 60)

{

minute = 60;

}

minute = minute / 60; //get minutes

time = hour + minute;

return time;

}

float roundTime(float timeIn) //rounds time up

{

return ceil(timeIn);

}

float price(float time) //returns the elec price depending on time

{

float elecPrice = 0.0;

//set electPrice to be day if hour is 8 - 24. else night

elecPrice = time <= 24 && time >= 9 ? dayRate : nightRate;

return elecPrice;

}

void printPriceTime(float time, float price)

{

printf("Electricity price at time %0.2f is %0.2f", time, price);

}