Homework 5

Homework 5.1

Write a program that finds and displays the alphabetically first letter in a sequence of three characters (e.g. type IBK and it returns B).

Homework 5.2

Write a program that transforms a compass heading to a compass bearing  using this table:

| **Heading in degrees** | **Bearing computation** |
| --- | --- |
| 0-89.99.. | North East |
| 90-179.99.. | North West |
| 180-269.99.. | South West |
| 270-359.99.. | South East |

Homework 5.3

Write a program that requires you enter an age and shows you what is your age class. (Child, Senior Citizen or Adult)

* Child : age <18
* Adult :  18<=age<65
* Senior Citizen: age >=65

Homework 5.4

Add a feature to program 6.3: buying cinema ticket. The policy is as follows:

* Weekend: Basic price is $10 while other days basic price is $7.
* Child: reduce 50%
* Senior Citizen: reduce 30%

Print the cinema ticket in this form

BKCine  
--------------------  
−Movie: Avatar  
−Class: Child  
−Date: Weekend  
−Price: $5

Homework 5.5

Write a program to play “High/Low". The program “picks" a number. The human player tries to guess it. The program indicates if the guess is too high, too low, or correct. Then it stops.

* Sample outputs:

Guess my number (between 1 and 10): 5  
Your guess was too small.  
The correct number was 6.

*Tip: Use rand() function to pick a random number.*

#include <time.h>  
#include <stdlib.h>  
..  
srand((unsigned)time(NULL));  
rand() % M; //Generate 0 → M-1

Homework 5.6

Write a C program that does the following:

* Reads the type of a vehicle exiting a car park (C for car, B for bus and T for truck) and the number of hours spent in the car park.
* Calculates the parking fee given the following rates (GST included):
  + Car: $0.70/hr for the first 2 hours; $2.50/hr after 2 hours
  + Bus: $1.50/hr for the first 2 hours; $2.00/hr after 2 hours
  + Truck: $2.50/hr for the first hour; $3.25/hr after 1 hour
* Prints a request for payment that states the total parking fee owed.

Parking Fee  
VEHICLE TYPE: CAR  
TIME: 5.5  
REGULAR FEE: 2\*0.7 = 1.4  
OVERTIME   : 3.5\*2.5=7.5  
TOTAL      : 8.9  
Thank you.

Homework 5.7

Write a program that take the input from user that follows the syntax:

*operand operator operand*

* + operand: real value
  + operator: + , -, \*, /

Return the result in the form:

*a op b = c*

For example:

5 + 6 = 11

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