CSE108
LW 10

≅ **Using mobile phones, flash disks, internet and any other record or communication media is strictly forbidden during lab sessions. Throughout a lab session, all such media must be kept turned off and in a closed environment. Violation of this rule is punished with a grade 0, -100 or worse. Before doing anything else, make sure that your computer is not attached any such media.**

≅ **Make sure that you have deleted all of your work PERMANENTLY before leaving the first sessions.**

You are given the food information below in a text file **food.txt**.

NUTRITIONAL COMPARISONS
Per 100 Gram (3.5 oz.) Serving – Cooked Meat – Updated March 2007

SPECIES	FAT g	PROTEIN g	CALORIES kcal	CHOLESTEROL mg	IRON mg	VITAMIN B-12 mcg
BISON	2.42	28.44	143	82	3.42	2.86
Beef *(Choice)*	18.54	27.21	283	87	2.72	2.50
Beef *(Select)*	8.09	29.89	201	86	2.99	2.64
Pork	9.66	29.27	212	86	1.1	0.75
Chicken *(Skinless)*	7.41	28.93	190	89	1.21	0.33
Sockeye Salmon	10.97	27.31	216	87	0.55	5.80

PART-I: (2 points)
Define a structure

- **structure food : to describe food** (contains 1 string for food name; 4 double for fat, protein, iron, vitamin B-12 ; and 2 integers for calories and cholesterol.)

Assume that quantity of cholesterol an adult's body can tolerate is 300 mg per a day. Write a function that calculates and returns how much (at most) an adult can eat from a food passed as parameter.

double safe_to_eat (food current_food)

PART-II: (1 point)
Define a structure

- structure search_param : to describe search parameters (2 doubles : min_ingredient of food substance (total of fat and protein) and max_ingredient of food substance in g., 2 integers : max_calories and min_calories)

Write a function to get search parameters.

search_param get_params (void) : to take search parameters from the user.

PART-III: (2 points)
Write a function that converts the text file you are given into a binary file. Do not use any array of structures.

void convert(FILE *text_input_file , FILE *bin_file)

PART-III:(3 points)
Write a function to display matched food from the database.

int is_match (food current_food, search_param parameters) : check whether the food satisfies the search parameters. If it is returns 1; otherwise 0.

Using the function above write another function to display matched food names in the database.

void print_food(FILE *bin_file , search_param parameters) : For each food in the database file check for a match and print if matches.