# Structures Homework

1. Write code to accomplish each of the following:

a) Using typedef, declare a structure, Automobile, with the following members:

model - string of 25 characters maximum

year – integer

mpg – integer

typedef struct {

char model[26];

int year;

int mpg;

} Automobile;

b) Declare variable car to be of type Automobile.

Automobile car;

c) Assign the information below to the appropriate fields of variable car:

2012 Infiniti gets 25 mpg.

strcpy(car.model, "Infiniti");

car.year = 2012;

car.mpg = 25;

d) Declare an array, vehicle, of 500 Automobiles.

Automobile vehicle[500];

e) Assign variable car to the 5th element of the array.

vehicle[4] = car;

f) Output the Automobile information located in the 5th array location. Show the output.

printf("model = %s\t year = %d\t mpg = %2d\n",

vehicle[4].model, vehicle[4].year, vehicle[4].mpg);

Output:

model = Infiniti year = 2012 mpg = 25

g) Declare variable p to be a pointer to an Automobile structure.

Automobile \*p;

h) Assign to variable p the address of the 5th array location.

p = &vehicle[4];

i) Using variable p, output the Automobile information located in the 5th array location. Show the output.

printf("model = %s\t year = %d\t mpg = %2d\n",

p->model, p->year, p->mpg);

Output:

model = Infiniti year = 2012 mpg = 25

j) Declare variable q to be a pointer to an Automobile structure.

Automobile \*q;

k) Assign to variable q the address of the first array location.

q = &vehicle[0];

l) Using variable q, output the Automobile information located in the 5th array location. Show the output.

printf("model = %s\t year = %d\t mpg = %2d\n",

(q+4)->model, (q+4)->year, (q+4)->mpg);

Output:

model = Infiniti year = 2012 mpg = 25