#include <stdio.h>

#include <stdlib.h>

/\*

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Description: allocating memory for a set of ADT

\*/

struct engine

{

char ID[6];

int HP;

double CC;

}typedef engine;

void populate(engine\* peng);

void display(engine\* peng, int size);

int main()

{

/\*engine eng[3];

engine\* peng = &eng[0];\*/

int size = 3;

engine\* peng = malloc(size\*sizeof(engine));

populate(peng);

display(peng, size);

return 0;

}//end main

//======================================

void populate(engine\* peng)

{

strcpy((peng + 0)->ID, "111111");

(peng + 0)->HP = 200;

(peng + 0)->CC = 1.5;

//-----------------------------------

strcpy((peng + 1)->ID, "222222");

(peng + 1)->HP = 300;

(peng + 1)->CC = 2.5;

//------------------------------------

strcpy((peng + 2)->ID, "333333");

(peng + 2)->HP = 400;

(peng + 2)->CC = 3.5;

}//end [populate

//=========================================

void display(engine\* peng, int size)

{

int i = 0;

for(i = 0; i < size; i++)

{

printf("Engine ID: %s\nEngine HP: %d\nEngine CC: %.2f\n", (peng + i)->ID, (peng + i)->HP, (peng + i)->CC);

printf("=============================================\n");

}//end for i

}//end displa

Example 2:

#include <iostream>

#include <string.h>

#include <sstream>

//#include <string>

using namespace std;

class student

{

//declarations

private:

string name;

int age;

double gpa;

//functions that processes students

public:

//code a default constructor

//const w/o arguments

student()

{

name = " ";

age = 0;

gpa = 0.0;

}

//const w/ arguments

/\* student(char\* pname, int age, double gpa)

{

strcpy(name, pname);

this.age = age;

this.gpa = gpa;

}\*/

~student(){}//delete pointers to mem to release};

void getStudent()

{

string input;

cout << "Enter student name: "; getline(cin, input, '\n'); name = input;

cout << "Enter student age :" ; getline(cin, input, '\n'); stringstream convertage(input); convertage >> age;

cout << "Enter student gpa :" ; getline(cin, input, '\n'); stringstream convertgpa(input); convertgpa >> gpa;

}//end getStudent

void dispStudent()

{

cout << "Student name: " << name << endl << "\tage: " << age << "\n\tgpa: " << gpa; //'endl' same as '\n'

cout << endl;

}//end disStudent

};

int main()

{

//declaration:

student st[3];

student\* pst = &st[0];

//input

cout << "=========input=======" << endl;

for(int i = 0; i < 3; i++)

(pst + i)->getStudent(); //cout << "student name alone : " << st.name;

//output

cout << "=========output=======" << endl;

for(int i = 0; i < 3; i++)

(pst + i)->dispStudent();

return 0;

}