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Unit 3 Submission Node 2

CS288 – C++ Programming

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Like my summary description of submission 1 of this Unit, the syntactic differences between Java and C++ seem to be my weakness. My biggest issue for this was trying to figure out how to map the possible user inputs to a “switch”-able data structure. I attempted writing to an enum object primarily. After fighting with CLion and Visual Studio on compiler errors, I decided to go with the classic if/else statement to take in user input. The code may not have the most syntactic sugar, but it runs and is (famous last words) seemingly fool proof.

**Vehicles.h**

# include<iostream>  
**using namespace** std;  
  
**class** Vehicle  
{  
**public**:  
 string engineSize, color, doors;  
 Vehicle() {  
  
 }  
 string setDoors(string doorOptions) {  
 **return** doors = doorOptions;  
 }  
 string setEngineSize(string engineOptions) {  
 **return** engineSize = engineOptions;  
 }  
 string setColor(string colorOptions) {  
 **return** color = colorOptions;  
 }  
 **void** display(string vehicleType, string extraFeatures) {  
 cout << "Here are the " << vehicleType << " options at the dealership currently." << endl;  
 cout << "Engine options are:\n" << engineSize << endl;  
 cout << "Door options are:\n" << doors << endl;  
 cout << "Color options are:\n" << color << endl;  
 cout << "Extra features of " << vehicleType << "s:\n" << extraFeatures << endl;  
 }  
};  
  
**class** Sedan: **public** Vehicle  
{  
**public**:  
 Sedan() {  
 string extraFeatures = "excellent fuel economy, midsized (easy to handle)";  
 setColor("blue, red, black, silver, white");  
 setEngineSize("inline 4cyl\nv6");  
 setDoors("4");  
 display("sedan", extraFeatures);  
 }  
};  
**class** Minivan: **public** Vehicle  
{  
**public**:  
 Minivan() {  
 string extraFeatures = "excellent fuel economy, perfect for the family";  
 setColor("blue, gold, forrest green, silver, white");  
 setEngineSize("inline 4cyl\nv6");  
 setDoors("5 (4 + hatch)");  
 display("minivan", extraFeatures);  
 }  
};  
**class** Crossover: **public** Vehicle  
{  
**public**:  
 Crossover() {  
 string extraFeatures = "good for camping trips (extra room in hatch)";  
 setColor("sea blue, red, black, silver");  
 setEngineSize("inline 4cyl\nv6");  
 setDoors("5 (4 + hatch)");  
 display("crossover", extraFeatures);  
 }  
};  
**class** Coupe: **public** Vehicle  
{  
**public**:  
 Coupe() {  
 string extraFeatures = "sleek body trim, fits 2 comfortably";  
 setColor("yellow, red, black, white");  
 setEngineSize("inline 4cyl\nv6");  
 setDoors("2");  
 display("coupe", extraFeatures);  
 }  
};  
**class** Convertible: **public** Vehicle  
{  
**public**:  
 Convertible() {  
 string extraFeatures = "'convertible' great for tall people, decent fuel economy";  
 setColor("blue, red, black, silver, white, gold, yellow");  
 setEngineSize("inline 4cyl\nv6, v8");  
 setDoors("2, 4");  
 display("convertible", extraFeatures);  
 }  
};

**Main.cpp**

// main file to determine which submission node to run  
#include <iostream>  
#include <string>  
#include <map>  
#include "Vehicle.h"  
#include "Vertebrates.h"  
  
**using namespace** std;  
  
string getUserChoice() {  
 string userResponse, userRespType;  
 cout << "What kind of vertebrate would you like info on? "  
 "birds/mammals/reptiles/amphibians" << endl;  
 cin >> userResponse;  
 **if** (userResponse == "birds") {  
 // secondary question to make the program seem more user friendly  
 cout << "What kind of bird?" << endl;  
 cin >> userRespType;  
 **new** Bird(userRespType);  
 } **else if** (userResponse == "mammals") {  
 // secondary question to make the program seem more user friendly  
 cout << "What kind of mammal?" << endl;  
 cin >> userRespType;  
 **new** Mammal(userRespType);  
 } **else if** (userResponse == "reptiles") {  
 // secondary question to make the program seem more user friendly  
 cout << "What kind of reptile?" << endl;  
 cin >> userRespType;  
 **new** Reptile(userRespType);  
 } **else if** (userResponse == "amphibians") {  
 // secondary question to make the program seem more user friendly  
 cout << "What kind of amphibian?" << endl;  
 cin >> userRespType;  
 **new** Amphibian(userRespType);  
 } **else** {  
 cout << "Please enter an option from above.";  
 getUserChoice();  
 }  
 **return** std::string();  
};  
  
**void** runVehicle() {  
 string userChoice;  
 string vehicleTypes[5] = {"sedan","minivan","crossover","coupe","convertible"};  
 cout << "What kind of vehicle would you like details on? "  
 "(sedan/minivan/crossover/coupe/convertible)" << endl;  
 cin >> userChoice;  
 **if** (userChoice == vehicleTypes[0]) {  
 **new** Sedan();  
 } **else if** (userChoice == vehicleTypes[1]) {  
 **new** Minivan();  
 } **else if** (userChoice == vehicleTypes[2]) {  
 **new** Crossover();  
 } **else if** (userChoice == vehicleTypes[3]) {  
 **new** Coupe();  
 } **else if** (userChoice == vehicleTypes[4]) {  
 **new** Convertible();  
 } **else** {  
 cout << "Invalid option entered..\nReturning to main.." << endl;  
 }  
}  
  
**int** main()  
{  
 string fileChoice;  
 cout << "Which file would you like to run? (vehicle/vertebrates)" << endl;  
 cin >> fileChoice;  
 **if** (fileChoice == "vertebrates") {  
 getUserChoice();  
 main();  
 } **else if** (fileChoice == "vehicle") {  
 runVehicle();  
 main();  
 } **else** {  
 cout << "Not a valid option.." << endl;  
 main();  
 }  
}  
  
//  
// Created by Ian Sabey on 12/24/18.  
//