A screenshot of a computer

Description automatically generated

This output displays a complete registration sequence of the code where a student is prompted to register for a course three times, each time confirmed with a display of all chosen IT classes. The output shows that the program successfully implements the registration system's requirements and demonstrates its ability to handle multiple course registrations while maintaining a record of the student's course selections up to a maximum allowed.

As the debugging process began when I first encountered issues running the program due to my AVG antivirus blocking the executable file and displaying a security warning. After fixing that, I noticed nothing stood out at first glance, so I started breaking down the code into its components and understanding their relationships.

I discovered syntax issues within the ValidateChoice method. The first problem was that the course number validation incorrectly allowed choices up to 70 when only 7 courses were available (if (choice < 1 || choice > 70)). Additionally, the duplicate course check had a major logic flaw because it only returned true if ALL choices were the same (choice == firstChoice && choice == secondChoice && choice == thirdChoice) instead of checking if the course matched ANY previous selection.

I also found that the credit hour validation had a logic error as it was checking totalCredit > 9 after the limit would have been exceeded, rather than checking totalCredit + 3 > 9 to prevent exceeding the limit.

Finally, I ran into a functional issue where the program output displayed "You are not registered for ANY courses" even after selecting a valid course number. This led me to examine the ValidateChoice method. I discovered the method was returning -4 for valid choices while the switch statement in the run() method expected a return value of 0 to confirm successful registration.

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleRegisterStudent

{

class Program

{

static void Main(string[] args)

{

(new Program()).run();

}

void run()

{

int choice;

int firstChoice = 0, secondChoice = 0, thirdChoice = 0;

int totalCredit = 0;

string yesOrNo = "";

System.Console.WriteLine("Michael Spaniolo");

do

{

WritePrompt();

choice = Convert.ToInt32(Console.ReadLine());

switch (ValidateChoice(choice, firstChoice, secondChoice, thirdChoice, totalCredit))

{

case -1:

Console.WriteLine("Your entered selection {0} is not a recognized course.", choice);

break;

case -2:

Console.WriteLine("You have already registerd for this {0} course.", ChoiceToCourse(choice));

break;

case -3:

Console.WriteLine("You can not register for more than 9 credit hours.");

break;

case 0:

Console.WriteLine("Registration Confirmed for course {0}.", ChoiceToCourse(choice));

totalCredit += 3;

if (firstChoice == 0)

firstChoice = choice;

else if (secondChoice == 0)

secondChoice = choice;

else if (thirdChoice == 0)

thirdChoice = choice;

break;

}

WriteCurrentRegistration(firstChoice, secondChoice, thirdChoice);

Console.Write("\nDo you want to try again? (Y|N)? : ");

yesOrNo = (Console.ReadLine()).ToUpper();

} while (yesOrNo == "Y");

Console.WriteLine("Thank you for registering with us");

}

void WritePrompt()

{

Console.WriteLine("Please select a course for which you want to register by typing the number inside []");

Console.WriteLine("[1]IT 145\n[2]IT 200\n[3]IT 201\n[4]IT 270\n[5]IT 315\n[6]IT 328\n[7]IT 330");

Console.Write("Enter your choice : ");

}

int ValidateChoice(int choice, int firstChoice, int secondChoice, int thirdChoice, int totalCredit)

{

if (choice < 1 || choice > 7)

return -1;

else if (choice == firstChoice || choice == secondChoice || choice == thirdChoice)

return -2;

else if (totalCredit + 3 > 9)

return -3;

return 0;

}

void WriteCurrentRegistration(int firstChoice, int secondChoice, int thirdChoice)

{

if (firstChoice == 0)

Console.WriteLine("You are not registered for ANY courses");

else if (secondChoice == 0)

Console.WriteLine("You are currently registered for {0}", ChoiceToCourse(firstChoice));

else if (thirdChoice == 0)

Console.WriteLine("You are currently registered for {0}, {1}", ChoiceToCourse(firstChoice), ChoiceToCourse(secondChoice));

else

Console.WriteLine("You are currently registered for {0}, {1}, {2}", ChoiceToCourse(firstChoice), ChoiceToCourse(secondChoice), ChoiceToCourse(thirdChoice));

}

string ChoiceToCourse(int choice)

{

string course = "";

switch (choice)

{

case 1:

course = "IT 145";

break;

case 2:

course = "IT 200";

break;

case 3:

course = "IT 201";

break;

case 4:

course = "IT 270";

break;

case 5:

course = "IT 315";

break;

case 6:

course = "IT 328";

break;

case 7:

course = "IT 330";

break;

default:

break;

}

return course;

}

}

}