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Software Technology DOT-NET

Report for the Laboratory work #4

Theme: Class properties. String processing. StringBuilder

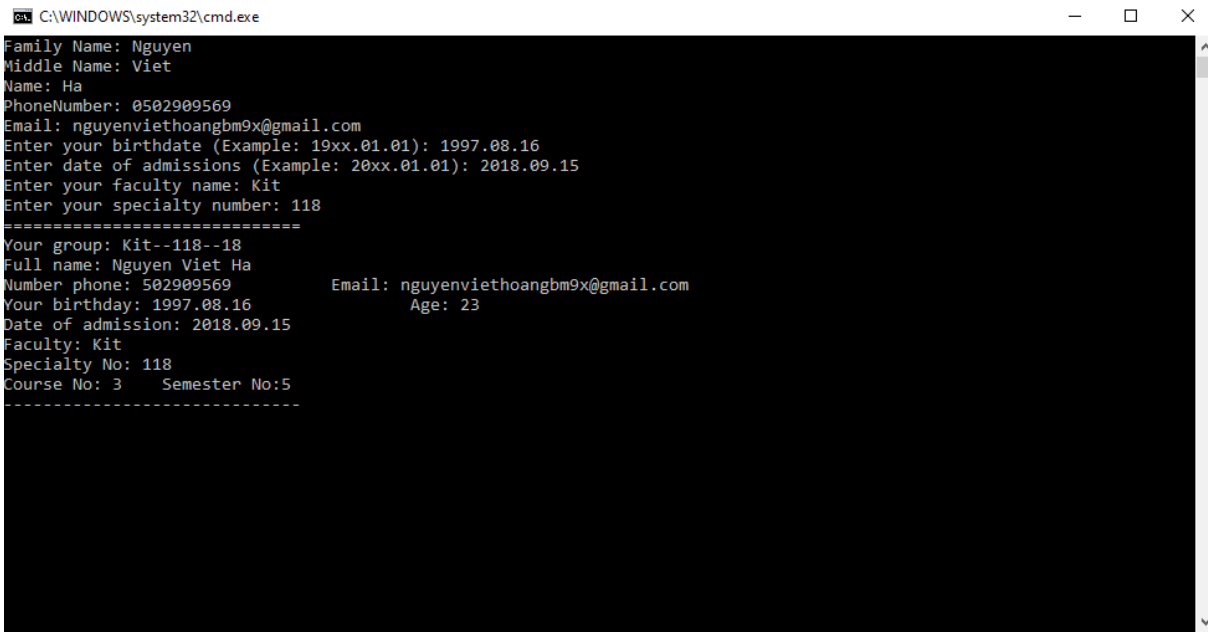
1. Theory block

To create read-only property in class you need to remove set; method and add some logic to the get;

To work with date and time in C# you need to use DateTime class, its constructor and its method DateTime.Parse to transform string value DateTime object. To get day you can use Day property of DateTime object, to get month you can use Month property and for year - Year property.

To process string with SringBuilde you need to add using System.Text; to the top, create StringBuilder object and use Append or AppendLine method to add new string. Than use ToString method to get full string

2. Program block with screenshots



Picture 1 – Screenshot of work of Program

3. Conclusion

That is program make:

```
using LapOfTask01;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace LabOfTask04
{
    class Program
    {
        static void Main(string[] args)
        {
            var student = new ExtendedStudent();
            //For full name.
            Console.Write("Family Name: ");
            student.FamilyName = Console.ReadLine();
            Console.Write("Middle Name: ");
            student.MiddleName = Console.ReadLine();
            Console.Write("Name: ");
            student.Name = Console.ReadLine();
            //For phone number and email.
            Console.Write("PhoneNumber: ");
            student.PhoneNumber = int.Parse(Console.ReadLine());
            Console.Write("Email: ");
            student.YourEmail = Console.ReadLine();
            //For birthdate and admission.
            Console.Write("Enter your birthdate (Example: 19xx.01.01): ");
            DateTime inputtedDate = DateTime.Parse(Console.ReadLine());
            student.BirthDate = inputtedDate;
            Console.Write("Enter date of admissions (Example: 20xx.01.01): ");
            DateTime inputtedDate0 = DateTime.Parse(Console.ReadLine());
```

```
    student.Admission = inputtedDate0;
    //For faculty and specialty.
    Console.Write("Enter your faculty name: ");
    student.Faculty = Console.ReadLine();
    Console.Write("Enter your specialty number: ");
    student.SpecialtyNumber = Console.ReadLine();
    //Show all output
    Console.WriteLine("==============================");
    Console.WriteLine(student.ToString());

    Console.ReadKey();

}
//Extended from students in LabOfTask01.
public class ExtendedStudent : Student
{
    public DateTime BirthDate { get; set; }
    public DateTime Admission { get; set; }
    public string Faculty { get; set; }
    public string SpecialtyNumber { get; set; }
    public int GetCourseNo
{
      get
      {
          var getCourseNo = DateTime.Today.Year - Admission.Year;
          if (DateTime.Today.Month > 8) getCourseNo++ ;
          return getCourseNo;
      }
    }
    public int GetSemesterNo
    {
      get
      {
```

```
            var getSemesterNo = GetCourseNo * 2;
        if (DateTime.Today.Year > 8 || DateTime.Today.Year < 2) getSemesterNo-- ;
              return getSemesterNo;
           }
          }
          public String GetGroupName
          {
           get
            {
           return $"{Faculty}--{SpecialtyNumber}--{Admission.ToString("yy")}";
            }
          }
          public int GetCurrentAge
          {
             get
             {
                var getCurrentAge = DateTime.Today.Year - BirthDate.Year;
                if (BirthDate.Date > DateTime.Today.AddYears(-getCurrentAge)) getCurrentAge--;
                return getCurrentAge;
             }
          }
          public override string ToString()
          {
             var stringBuilder = new StringBuilder();

             stringBuilder.AppendLine($"Your group: {GetGroupName}");
             stringBuilder.AppendLine($"Full name: {FamilyName} {MiddleName} {Name}");
             stringBuilder.AppendLine($"Number phone: {PhoneNumber}\t\t Email: {YourEmail}");
             stringBuilder.AppendLine($"Your birthday: {BirthDate.ToString("yyyy.MM.dd")}\t\t Age:
{GetCurrentAge}");
             stringBuilder.AppendLine($"Date of admission: {Admission.ToString("yyyy.MM.dd")}");
             stringBuilder.AppendLine($"Faculty: {Faculty}");
             stringBuilder.AppendLine($"Specialty No: {SpecialtyNumber}");
```

```
            stringBuilder.AppendLine($"Course No: {GetCourseNo}\tSemester No:{GetSemesterNo}");
            stringBuilder.AppendLine("------------------------------");

            return stringBuilder.ToString();
        }

    }
  }
}
```