

Software Technology DOT-NET

Report for the Laboratory work #4

Theme: Class properties. String processing. StringBuilder

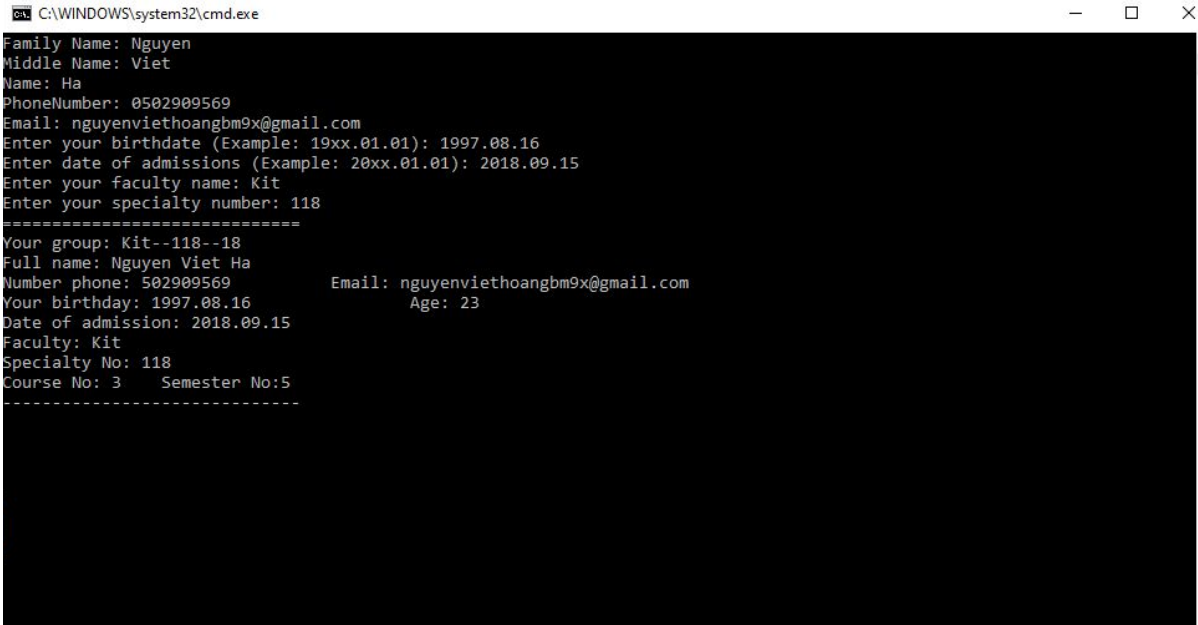
1. Theory block

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 objects. To get a 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 StringBuilder 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



```
C:\WINDOWS\system32\cmd.exe
Family Name: Nguyen
Middle Name: Viet
Name: Ha
PhoneNumber: 0502909569
Email: nguyenviethoangbm9x@gmail.com
Enter your birthdate (Example: 19xx.01.01): 1997.08.16
Enter date of admissions (Example: 20xx.01.01): 2018.09.15
Enter your faculty name: Kit
Enter your specialty number: 118
=====
Your group: Kit--118--18
Full name: Nguyen Viet Ha
Number phone: 502909569      Email: nguyenviethoangbm9x@gmail.com
Your birthday: 1997.08.16    Age: 23
Date of admission: 2018.09.15
Faculty: Kit
Specialty No: 118
Course No: 3    Semester No:5
-----
```

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();
    }

}

}
```