



Thực hành Kỹ thuật lập trình nâng cao

Lab 1: CLASS

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1 Bài 1

```
using System;

namespace baiTapClass
{
    internal class UserInformation
    {
        public string userName;
        public int userAge;
        public uint userID;

        public void GetUserInformation()
        {
            string userAgeInput;
            string userIDInput;
            //User name input
            Console.WriteLine("Please input User Name: ");
            userName = Console.ReadLine();
            //User Age Input
            Console.WriteLine("Please input Age for {0}: ", userName);
            userAgeInput = Console.ReadLine();
            while (!int.TryParse(userAgeInput, out userAge))
            {
                Console.WriteLine("Invalid Age input. Please enter a valid integer.");
                Console.WriteLine("Please input Age for {0}: ", userName);
                userAgeInput = Console.ReadLine();
            }
            //User ID Input
            Console.WriteLine("Please input ID for {0}: ", userName);
            userIDInput = Console.ReadLine();
            while (!uint.TryParse(userIDInput, out userID))
            {
                Console.WriteLine("Invalid ID input. Please enter a valid unsigned integer.");
                Console.WriteLine("Please input ID for {0}: ", userName);
                userIDInput = Console.ReadLine();
            }
        }
    }
}
```

```

    }
    public void PrintUserInformation()
    {
        Console.Write($"User
                        Name:\t{userName}\nAge:\t\t{userAge}\nID:\t\t{userID}");
    }
}
}

```

Listing 1: UserInformation.cs phiên bản bài 1

```

using System;

namespace baiTapClass
{
    partial class Program
    {
        public static void Main()
        {
            try
            {
                UserInformation user = new UserInformation();
                user.GetUserInformation();
                user.PrintUserInformation();
            }
            catch (Exception ex)
            {
                Console.WriteLine(ex.Message);
            }
            Console.ReadLine();
        }
    }
}

```

Listing 2: Program.cs phiên bản bài 1

```

C:\Users\huypr\OneDrive - VNU-HCMUS\HK6\KTLT\testCS\testCS\bin\Debug\testCS.exe
Please input User Name: Khoa Hoc Tu Nhlen
Please input Age for Khoa Hoc Tu Nhlen: 28
Please input ID for Khoa Hoc Tu Nhlen: 21200201
User Name:      Khoa Hoc Tu Nhlen
Age:            28
ID:             21200201_

```

Hình 1: Output bài 1

2 Bài 2

```
using System;

namespace baiTapClass
{
    internal class UserInformation
    {
        public string userName;
        public int userAge;
        public uint userID;

        public void GetUserInformation()
        {
            string userAgeInput;
            string userIDInput;
            //User name input
            Console.Write("Please input User Name: ");
            userName = Console.ReadLine();
            //User Age Input
            Console.Write("Please input Age for {0}: ", userName);
            userAgeInput = Console.ReadLine();
            while (!int.TryParse(userAgeInput, out userAge))
            {
                Console.WriteLine("Invalid Age input. Please enter a valid integer.");
                Console.Write("Please input Age for {0}: ", userName);
                userAgeInput = Console.ReadLine();
            }
            //User ID Input
            Console.Write("Please input ID for {0}: ", userName);
            userIDInput = Console.ReadLine();
            while (!uint.TryParse(userIDInput, out userID))
            {
                Console.WriteLine("Invalid ID input. Please enter a valid unsigned integer.");
                Console.Write("Please input ID for {0}: ", userName);
                userIDInput = Console.ReadLine();
            }
        }

        public void PrintUserInformation()
        {
            Console.Write($"User
                Name:\t{userName}\nAge:\t\t\t{userAge}\nID:\t\t\t{userID}");
        }

        public UserInformation()
        { }

        public UserInformation(string userName, int userAge, uint userID)
        {
            this.userName = userName;
            this.userAge = userAge;
            this.userID = userID;
        }

        public override string ToString()
        {
            //return "[" + userName + "," + userAge + "," + userID + "]";
        }
    }
}
```

```

        return String.Format($"[{userName}, {userAge}, {userID}]");
    }
}
}

```

Listing 3: UserInformation.cs phiên bản bài 2:

```

using System;
using baiTapClass;

namespace baiTapClass
{
    class Program
    {
        UserInformation user1 = new UserInformation("Khoa Hoc Tu Nhien", 28, 21200201);
        UserInformation user2 = new UserInformation("Xa Hoi Nhan Van", 32, 21200202);
        UserInformation user3 = new UserInformation("Cong Nghe Thong Tin", 18,
            21200203);
        List<UserInformation> users = new List<UserInformation>() { user1, user2,
            user3 };
        Console.WriteLine("List user sorted by Age:");
        List<UserInformation> sortedUsersByAge = users.OrderBy(x =>
            x.userAge).ToList();
        Console.WriteLine(String.Join(Environment.NewLine, sortedUsersByAge));
        Console.WriteLine("\n\nList user sorted by ID:");
        List<UserInformation> sortedUsersByID = users.OrderByDescending(x =>
            x.userID).ToList();
        Console.WriteLine(String.Join(Environment.NewLine, sortedUsersByID));
    }
}

```

Listing 4: Program.cs phiên bản bài 2

```

C:\Users\huypr\OneDrive - VNU-HCMUS\HK6\KTLT\testCS\testCS\bin\Debug\testCS.exe
List user sorted by Age:
[Cong Nghe Thong Tin, 18, 21200203]
[Khoa Hoc Tu Nhien, 28, 21200201]
[Xa Hoi Nhan Van, 32, 21200202]

List user sorted by ID:
[Cong Nghe Thong Tin, 18, 21200203]
[Xa Hoi Nhan Van, 32, 21200202]
[Khoa Hoc Tu Nhien, 28, 21200201]

```

Hình 2: Output bài 2

Source code: [Github](#)