

Thực hành Kỹ thuật lập trình nâng cao

Lab 1: CLASS

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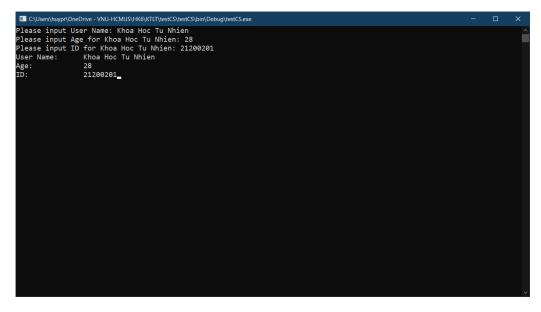
1 Bài 1

```
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.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();
```

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: ${\tt Program.cs}$ phiên bản bài 1



Hình 1: Output bài 1

2 Bài 2

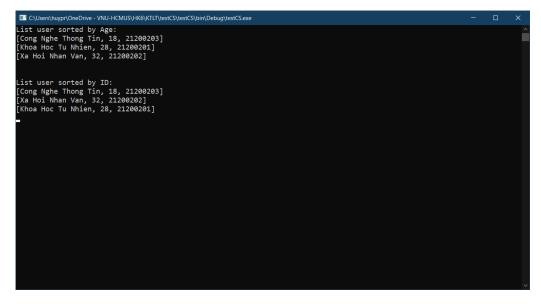
```
using System;
namespace baiTapClass
  internal class UserInformation
     public string userName;
     public int userAge;
     public uint userID;
     public void GetUserInformation()
        string userAgeInput;
        string userIDInput;
        //User name input
        Console.Write("Please 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{userAge}\nID:\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



Hình 2: Output bài 2

Source code: Github