Marvel Sanjaya Setiawan

2311104053
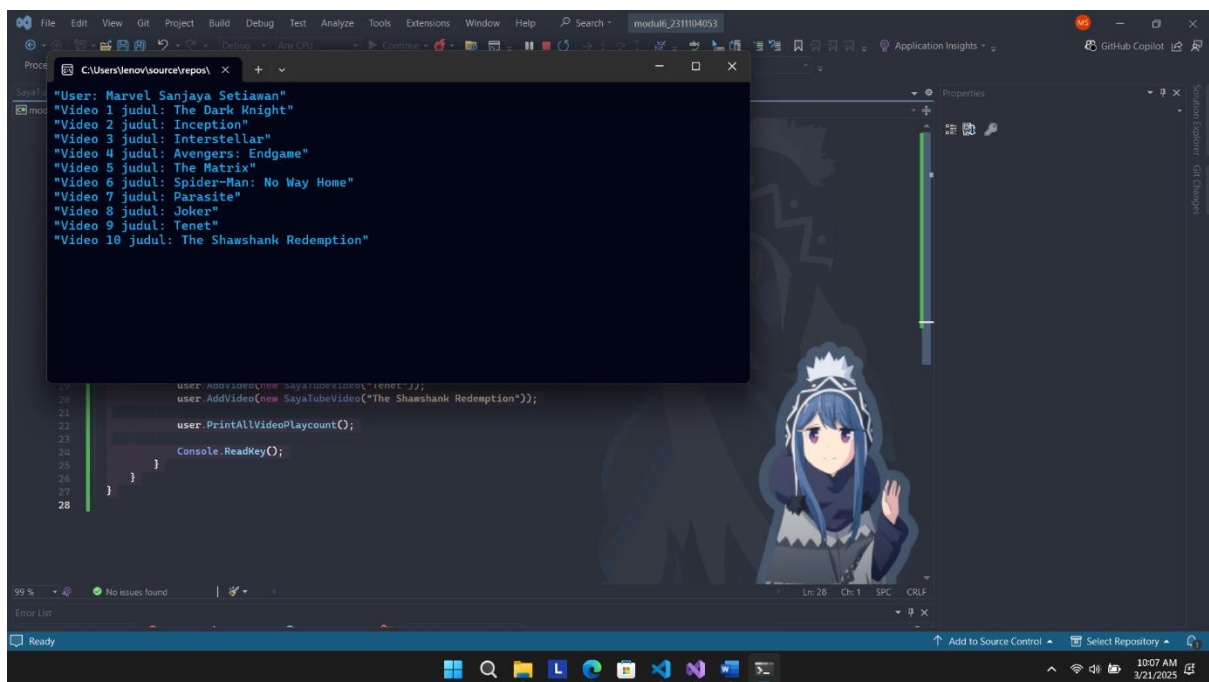
SE07-02

JURNAL MODUL 6

Link github:

https://github.com/Meph1sto14/KPL_Marvel_Sanjaya_Setiawan_2311104053_SE07-02/tree/9ec612b06561ce6981edb84c83d343ad73a569f1/06_Design_by_Contract_dan_Defensive_Programming

Hasil Run:

SayaTubeVideo.cs

```csharp
1. using System;
2.
3. namespace modul6_2311104053
4. {
5.     class SayaTubeVideo
6.     {
7.         private int id;
8.         private string title;
9.         private int playCount;
10.
11.         public SayaTubeVideo(string title)
12.         {
```

```
13.             if (string.IsNullOrEmpty(title) || title.Length > 200)
14.                 throw new ArgumentException("Judul video tidak boleh kosong dan maksimal 200 karakter.");
15.
16.             Random random = new Random();
17.             this.id = random.Next(10000, 99999);
18.             this.title = title;
19.             this.playCount = 0;
20.         }
21.
22.         public void IncreasePlayCount(int count)
23.         {
24.             if (count < 0 || count > 25000000)
25.                 throw new ArgumentException("Play count harus antara 0 dan 25.000.000.");
26.
27.             checked
28.             {
29.                 if (playCount + count > int.MaxValue)
30.                     throw new OverflowException("Jumlah play count melebihi batas maksimum integer.");
31.                 playCount += count;
32.             }
33.         }
34.
35.         public void PrintVideoDetails()
36.         {
37.             Console.WriteLine($"ID: {id}");
38.             Console.WriteLine($"Title: {title}");
39.             Console.WriteLine($"Play Count: {playCount}");
40.         }
41.
42.         public int GetPlayCount()
43.         {
44.             return playCount;
45.         }
46.
47.         public string GetTitle()
48.         {
49.             return title;
50.         }
51.     }
52. }
53.
```

Penjelasan kodingan:

Kelas SayaTubeVideo merepresentasikan video dengan id, title, dan playCount.

1. **Atribut**: id (acak), title (validasi 200 karakter), playCount (dimulai dari 0).
2. **Metode**: IncreasePlayCount (tambah play count dengan validasi), PrintVideoDetails (tampilkan detail video), GetPlayCount dan GetTitle (ambil data).

SayaTubeUser.cs

```
1. using System;
2. using System.Collections.Generic;
3.
4. namespace modul6_2311104053
5. {
6.     class SayaTubeUser
7.     {
8.         private int id;
```

```
9.         private string username;
10.        private List<SayaTubeVideo> uploadedVideos;
11.
12.        public SayaTubeUser(string username)
13.        {
14.            if (string.IsNullOrEmpty(username) || username.Length > 100)
15.                throw new ArgumentException("Username tidak boleh kosong dan maksimal 100
karakter.");
16.
17.            Random random = new Random();
18.            this.id = random.Next(10000, 99999);
19.            this.username = username;
20.            this.uploadedVideos = new List<SayaTubeVideo>();
21.        }
22.
23.        public void AddVideo(SayaTubeVideo video)
24.        {
25.            if (video == null)
26.                throw new ArgumentNullException("Video tidak boleh null.");
27.
28.            uploadedVideos.Add(video);
29.        }
30.
31.        public int GetTotalVideoPlayCount()
32.        {
33.            int total = 0;
34.            foreach (var video in uploadedVideos)
35.            {
36.                total += video.GetPlayCount();
37.            }
38.            return total;
39.        }
40.
41.        public void PrintAllVideoPlaycount()
42.        {
43.            Console.WriteLine($"\"User: {username}\"");
44.            for (int i = 0; i < Math.Min(uploadedVideos.Count, 10); i++)
45.            {
46.                Console.WriteLine($"\"Video {i + 1} judul:
{uploadedVideos[i].GetTitle()}\"");
47.            }
48.        }
49.
50.    }
51. }
52.
```

Penjelasan kodingan:

Kelas SayaTubeUser merepresentasikan pengguna dengan id, username, dan daftar video.

1. **Atribut**: id (acak), username (validasi 100 karakter), uploadedVideos (list video).
2. **Metode**: AddVideo (tambah video), GetTotalVideoPlayCount (total play count),
    PrintAllVideoPlaycount (tampilkan 10 video pertama).

Program.cs

```
1. using System;
2.
3. namespace modul6_2311104053
4. {
5.     class Program
6.     {
```

```
 7.          static void Main(string[] args)
 8.          {
 9.              SayaTubeUser user = new SayaTubeUser("Marvel Sanjaya Setiawan");
10.
11.              user.AddVideo(new SayaTubeVideo("The Dark Knight"));
12.              user.AddVideo(new SayaTubeVideo("Inception"));
13.              user.AddVideo(new SayaTubeVideo("Interstellar"));
14.              user.AddVideo(new SayaTubeVideo("Avengers: Endgame"));
15.              user.AddVideo(new SayaTubeVideo("The Matrix"));
16.              user.AddVideo(new SayaTubeVideo("Spider-Man: No Way Home"));
17.              user.AddVideo(new SayaTubeVideo("Parasite"));
18.              user.AddVideo(new SayaTubeVideo("Joker"));
19.              user.AddVideo(new SayaTubeVideo("Tenet"));
20.              user.AddVideo(new SayaTubeVideo("The Shawshank Redemption"));
21.
22.              user.PrintAllVideoPlaycount();
23.
24.              Console.ReadKey();
25.          }
26.     }
27. }
28.
```

Penjelasan kodingan:

Program ini membuat objek SayaTubeUser dengan nama pengguna "Marvel Sanjaya Setiawan".

1. **Langkah utama**:
   a. Menambahkan 10 video ke daftar pengguna dengan judul masing-masing.
   b. Menampilkan hingga 10 video pertama dari daftar menggunakan PrintAllVideoPlaycount.

2. **Akhir**: Program menunggu input pengguna dengan Console.ReadKey() sebelum selesai.