Assignment 1

In this task you have to create a json serializer using recursion and reflection. You have to develop this code to convert any object into a json string. But the opposite is not needed. The object can have a nested child object, array, list, dictionary etc. Even the List can be of another type of object. Consider the following example:

```
public class Course
{
     public string Title { get; set; }
     public Instructor Teacher { get; set; }
     public List<Topic> Topics { get; set; }
     public double Fees { get; set; }
     public List<AdmissionTest> Tests { get; set; }
}

public class AdmissionTest
{
     public DateTime StartDateTime { get; set; }
     public DateTime EndDateTime { get; set; }
     public double TestFees { get; set; }
}

public class Topic
{
     public string Title { get; set; }
     public string Description { get; set; }
     public List<Session> Sessions { get; set; }
}

public class Session
{
     public int DurationInHour { get; set; }
     public string LearningObjective { get; set; }
}
```

```
public class Instructor
{
     public string Name { get; set; }
     public string Email { get; set; }
     public Address PresentAddress { get; set; }
     public Address PermanentAddress { get; set; }
     public List<Phone> PhoneNumbers { get; set; }
}

public class Address
{
     public string Street { get; set; }
     public string City { get; set; }
     public string Country { get; set; }
}

public class Phone
{
     public string Number { get; set; }
     public string Extension { get; set; }
     public string CountryCode { get; set; }
}
```

Now you have to create a class: JsonFormatter<T> which has a method : string Convert(object item) and calling it with Course object like below will return the valid json string.

```
Course course = new Course();
course.Title = "Asp.net";
course.Fees = 30000;
course.Instructor = new Instructor()
{
   Name = "Jalaluddin";

   ...
   // etc.
};
// all other fields set here.

string json = JsonFormatter<Course>(course);
```

When we print the json string we will get a json string with all fields and values as we set them.