

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Xml;
using System.IO;
using System.Xml.XPath;
using System.Web.UI.WebControls;
using System.Web.Mvc;

namespace JerryWebMVC.Models
{
    public class ElementModel
    {
        PeriodicTable.periodictable periodicTable = new PeriodicTable.periodictable();

        int[] Metals = new int[] { 3,4,11,12,13,19,20,30,31,32,37,38,48,49,50,51,55,56,80, 81,82,83,84,87,88 };
        int[] Transition = new int[] { 21, 22, 23, 24, 25, 26, 27, 28, 29, 39, 40, 41, 42, 43, 44, 45, 46, 47,57, 72, 73, 74, 75, 76, 77, 78, 79,89, 104, 105, 106, 107, 108, 109, 110, 111 };
        int[] Lanthanide = new int[] { 58,59,60,61,62,63,63,65,66,67,68,69,70,71 };
        int[] Actinide = new int[] { 90,91,92,93,94,95,96,97,98,99,100,101,102,103 };
        int[] Noble = new int[] { 2, 10, 18, 36, 54, 85 };

        public ElementModel()
        {
            string elem = periodicTable.GetAtoms();
            XmlDocument elements = new XmlDocument();
            elements.LoadXml(elem);
            XmlNodeList nodeList = elements.SelectNodes("/NewDataSet/Table/ElementName");

            List<string> _elements = new List<string>();
            foreach (XmlNode node in nodeList)
            {
                _elements.Add(node.InnerText);
            }

            Elements = _elements.Select(p => new SelectListItem { Text = p, Value = p });
        }

        public void GetElement(string ename)
        {
            CurElement = ename;
            string AtomicData = periodicTable.GetAtomicNumber(ename);
            XmlDocument doc = new XmlDocument();
            doc.LoadXml(AtomicData);
            AtomicNumber = doc.SelectSingleNode("/NewDataSet/Table/AtomicNumber").InnerText;
            AtomicSymbol = doc.SelectSingleNode("/NewDataSet/Table/Symbol").InnerText;
            AtomicWeight = doc.SelectSingleNode("/NewDataSet/Table/AtomicWeight").InnerText;
            BoilingPoint = doc.SelectSingleNode("/NewDataSet/Table/BoilingPoint") == null ? string.Empty : doc.SelectSingleNode("/NewDataSet/Table/BoilingPoint").InnerText;
            Ionisation = doc.SelectSingleNode("/NewDataSet/Table/IonisationPotential") == null ? string.Empty : doc.SelectSingleNode("/NewDataSet/Table/IonisationPotential").InnerText;
            Electronegativity = doc.SelectSingleNode("/NewDataSet/Table/EleetroNegativity") == null ? string.Empty : doc.SelectSingleNode("/NewDataSet/Table/EleetroNegativity").InnerText;
            MeltingPoint = doc.SelectSingleNode("/NewDataSet/Table/MeltingPoint") == null ? string.Empty : doc.SelectSingleNode("/NewDataSet/Table/MeltingPoint").InnerText ;
        }
    }
}
```

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Density = doc.SelectSingleNode("/NewDataSet/Table/Density") == null ? string.Empty : doc.SelectSingleNode("/NewDataSet/Table/Density").InnerText;

int anum = int.Parse(AtomicNumber);

if (Metals.Contains(anum))
{
    Color = "Blue";
} else if (Transition.Contains(anum))
{
    Color = "Yellow";
} else if (Lanthanide.Contains(anum))
{
    Color = "Green";
} else if (Actinide.Contains(anum))
{
    Color = "Purple";
} else if (Noble.Contains(anum))
{
    Color = "Orange";
} else
{
    Color = "Red";
}

public IEnumerable<SelectListItem> Elements { get; set; }
public string CurElement { get; set; }
public string AtomicWeight { get; set; }
public string AtomicNumber { get; set; }
public string AtomicSymbol { get; set; }
public string BoilingPoint { get; set; }
public string Ionisation { get; set; }
public string Electronegativity { get; set; }
public string AtomicRadius { get; set; }
public string MeltingPoint { get; set; }
public string Density { get; set; }
public string Color { get; set; }
}
}
```