1. **Create a MVC (.net framework or Core) application with C# Diamond Information using entity framework. Convert EF tuple collection and perform CRUD operation on it.**

 Ans:-

 DiamondsController.cs

```csharp
using System;
using System.Collections.Generic;
using System.Data;
using System.Data.Entity;
using System.Linq;
using System.Net;
using System.Web;
using System.Web.Mvc;
using Assignment2_ICT2_202__02;

namespace Assignment2_ICT2_202__02.Controllers
{
    public class DiamondsController : Controller
    {
        private DimondDBEntities db = new DimondDBEntities();

        // GET: Diamonds
        public ActionResult Index()
        {
//     Diamond u = new Diamond() { diamond_id = 3, diamond_name = "Dia3", diamond_weight = 22.5,
   diamond_cost = 2200, diamond_price = 5000};
//     Diamond p = new Diamond() { diamond_id = 4, diamond_name = "Dia4", diamond_weight = 55.2,
   diamond_cost = 6000, diamond_price = 9000 };
//     var t = new Tuple<Diamond, Diamond>(u, p);

            List<Diamond> diamonds = db.Diamonds.ToList();
            var tuple = Tuple.Create<List<Diamond>>(diamonds);
            return View(tuple.Item1);
        }

        // GET: Diamonds/Details/5
        public ActionResult Details(int? id)
        {
            Diamond diamonds = db.Diamonds.Find(id);
            var tuple = Tuple.Create<Diamond>(diamonds);
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }

            if (tuple.Item1 == null)
            {
                return HttpNotFound();
            }
```

```csharp
            return View(tuple.Item1);
        }

        // GET: Diamonds/Create
        public ActionResult Create()
        {
            return View();
        }

    // POST: Diamonds/Create
    // To protect from overposting attacks, enable the specific properties you want to bind to, for
    // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
    [HttpPost]
    [ValidateAntiForgeryToken]
    public ActionResult Create([Bind(Include =
"diamond_id,diamond_name,diamond_weight,diamond_cost,diamond_price")] Diamond diamond)
        {
            if (ModelState.IsValid)
            {
                db.Diamonds.Add(diamond);
                db.SaveChanges();
                //Diamond entities = new Diamond();
                //List<Diamond> diomonds = db.Diamonds.ToList();
                //return View(Tuple.Create(diomonds));
                return RedirectToAction("Index");
            }

            return View(diamond);
        }

        // GET: Diamonds/Edit/5
        public ActionResult Edit(int? id)
        {
            Diamond diamonds = db.Diamonds.Find(id);
            var tuple = Tuple.Create<Diamond>(diamonds);
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }

            if (tuple.Item1 == null)
            {
                return HttpNotFound();
            }
            return View(tuple.Item1);
        }

    // POST: Diamonds/Edit/5
    // To protect from overposting attacks, enable the specific properties you want to bind to, for
    // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
    [HttpPost]
    [ValidateAntiForgeryToken]
    public ActionResult Edit([Bind(Include =
"diamond_id,diamond_name,diamond_weight,diamond_cost,diamond_price")] Diamond diamond)
        {
            if (ModelState.IsValid)
            {
                db.Entry(diamond).State = EntityState.Modified;
                db.SaveChanges();
```

```csharp
                return RedirectToAction("Index");
            }
            return View(diamond);
        }

        // GET: Diamonds/Delete/5
        public ActionResult Delete(int? id)
        {
            Diamond diamonds = db.Diamonds.Find(id);
            var tuple = Tuple.Create<Diamond>(diamonds);
            if (id == null)
            {
                return new HttpStatusCodeResult(HttpStatusCode.BadRequest);
            }

            if (tuple.Item1 == null)
            {
                return HttpNotFound();
            }
            return View(tuple.Item1);
        }

        // POST: Diamonds/Delete/5
        [HttpPost, ActionName("Delete")]
        [ValidateAntiForgeryToken]
        public ActionResult DeleteConfirmed(int id)
        {
            Diamond diamonds = db.Diamonds.Find(id);
            var tuple = Tuple.Create<Diamond>(diamonds);
            db.Diamonds.Remove(tuple.Item1);
            db.SaveChanges();
            return RedirectToAction("Index");
        }

        protected override void Dispose(bool disposing)
        {
            if (disposing)
            {
                db.Dispose();
            }
            base.Dispose(disposing);
        }
    }
}
```
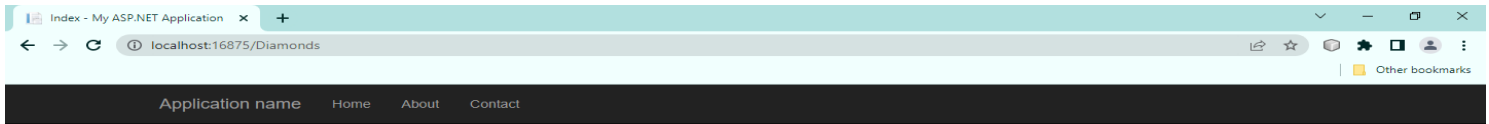
Diamond.cs

```csharp
//------------------------------------------------------------------------------
// <auto-generated>
//      This code was generated from a template.
//
//      Manual changes to this file may cause unexpected behavior in your application.
//      Manual changes to this file will be overwritten if the code is regenerated.
// </auto-generated>
//------------------------------------------------------------------------------

namespace Assignment2_ICT2_202__02
{
    using System;
    using System.Collections.Generic;

    public partial class Diamond
    {
        public int diamond_id { get; set; }
        public string diamond_name { get; set; }
        public double diamond_weight { get; set; }
        public double diamond_cost { get; set; }
        public double diamond_price { get; set; }
    }
}
```
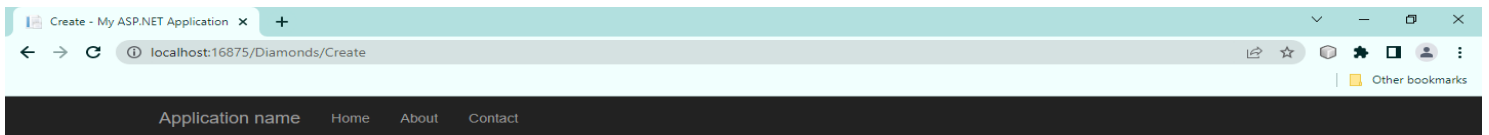
OutPut:-

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← → C ⓘ localhost:16875/Diamonds

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Index

Create New

diamond_name	diamond_weight	diamond_cost	diamond_price	
Beau Sancy cv	34.98	5000	90000	Edit | Details | Delete
Black Orlov	67.65	9000	15000	Edit | Details | Delete
Chloe Diamond	84.37	6000	25000	Edit | Details | Delete
test	12	200	84856	Edit | Details | Delete
fdg	2	54	854	Edit | Details | Delete
Rav	32.22	1200	40000	Edit | Details | Delete

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Edit

Diamond

diamond_name	Rav rq
diamond_weight	32.22
diamond_cost	1200
diamond_price	40000

Save

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Beau Sancy cv	34.98	5000	90000	Edit	Details	Delete
Black Orlov	67.65	9000	15000	Edit	Details	Delete
Chloe Diamond	84.37	6000	25000	Edit	Details	Delete
test	12	200	84856	Edit	Details	Delete
fdg	2	54	854	Edit	Details	Delete
Rav rq	32.22	1200	40000	Edit	Details	Delete

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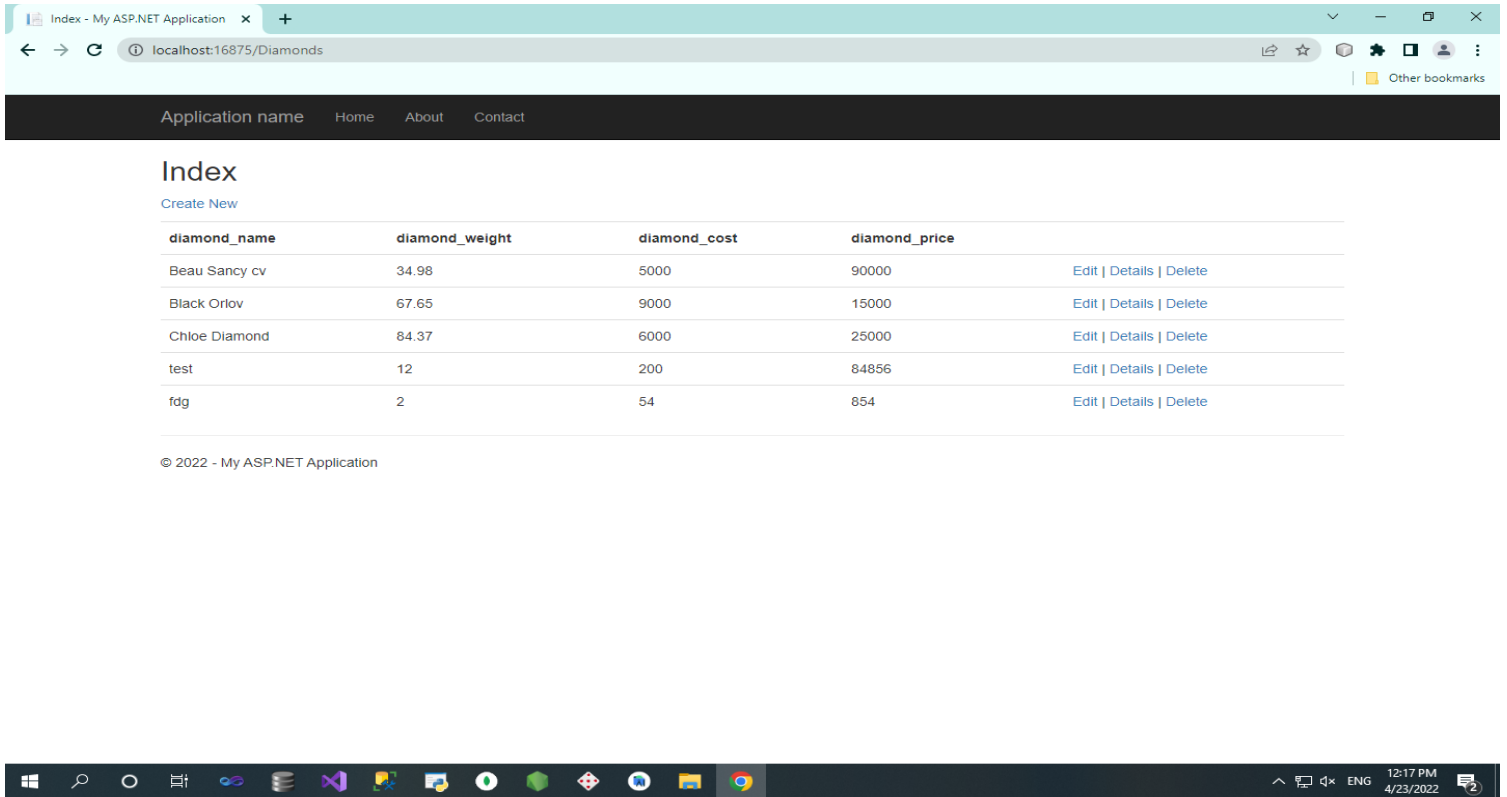
Details

Diamond

diamond_name	Rav rq
diamond_weight	32.22
diamond_cost	1200
diamond_price	40000

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