Wednesday, February 2, 2022
C# LINQ, GENERICS, COLLECTIONS with OOP's
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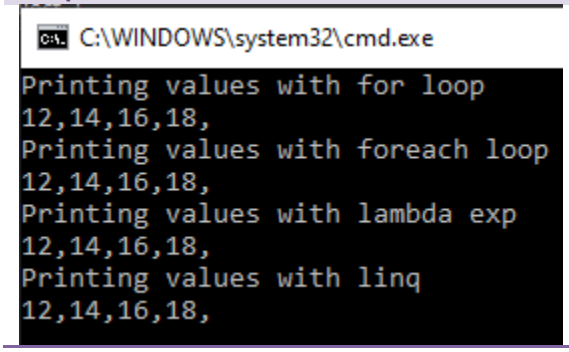
Q. Declare list and print even no's using for, foreach loops, lambda exp, and linq.

Code:

```
static void Main(string[] args)
        {

/*****************************************************************************
 * Author : Nalli_prudhvi                                                    *
 * Purpose: Declare list and print even no's using for, foreach loops, lambda exp,*
 *          and linq.                                                        *
 *****************************************************************************/
var my_list = new List<int>() {12,13,14,15,16,17,18,19};
            // print values with for loop.
            Console.WriteLine("Printing values with for loop");
            for (int i = 0; i < my_list.Count; i++)
            {
                if(my_list[i]%2==0)
                    Console.Write(my_list[i]+",");
            }
            Console.WriteLine();
            // print values with foreach loop.
            Console.WriteLine("Printing values with foreach loop");
            foreach(int i in my_list)
            {
                if(i%2==0)
                Console.Write(i+",");
            }
            Console.WriteLine();
            // print values with lambda exp.
            Console.WriteLine("Printing values with lambda exp");
            my_list.Where(e=>e%2==0).ToList().ForEach(e=>Console.Write(e+","));
            Console.WriteLine();
            // print values with linq.
            Console.WriteLine("Printing values with linq");
            var value = from d in my_list
                        where d%2==0
                        select d;
            value.ToList().ForEach(d => Console.Write(d+","));
        }
```

Output



Q. create class Employee with 3 var and create a list of Employees print values with for, foreach lambda exp, and linq.

Code

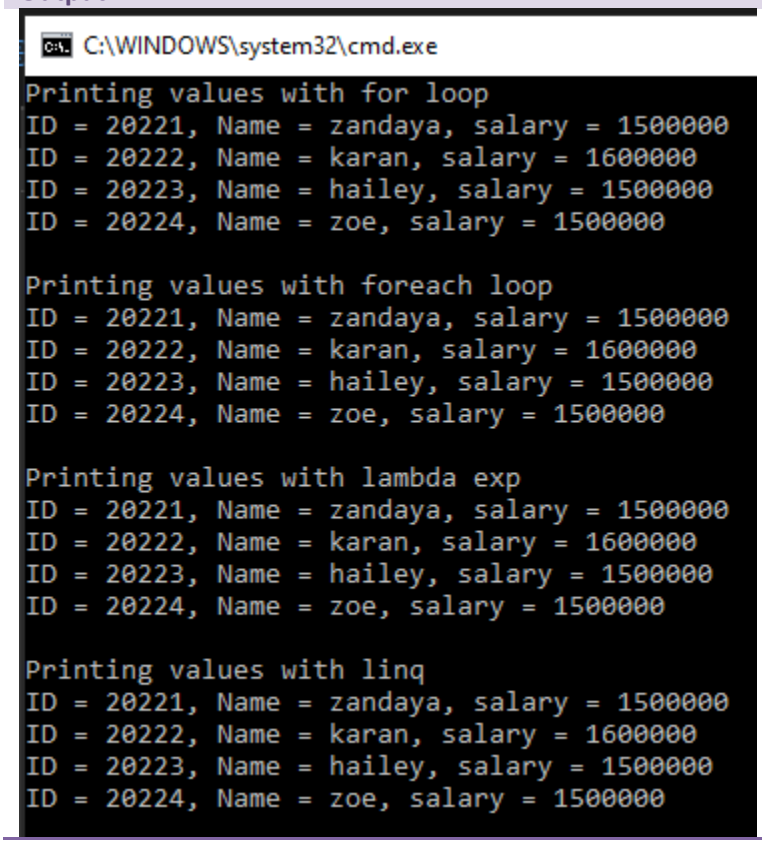
```
class Employee
    {
        public int id;
        public string name;
        public int salary;
    }
static void Main(string[] args)
        {

/*****************************************************************************
 * Author : Nalli_prudhvi                                                    *
 * Purpose: create class Employee with 3 var and create a list of Employees print *
 *         values with for, foreach lambda exp, and linq.                    *
 *****************************************************************************/
            List<Employee> employees = new List<Employee>() {
            new Employee{id = 20221,name="zandaya",salary=1500000},
            new Employee{id = 20222,name="karan",salary=1600000},
            new Employee{id = 20223,name="hailey",salary=1500000},
            new Employee{id = 20224,name="zoe",salary=1500000}};
            // print values with for loop.
            Console.WriteLine("Printing values with for loop");
            for (int i = 0; i < employees.Count; i++)
            {
                Console.WriteLine($"ID = {employees[i].id}, Name =
{employees[i].name}, salary = {employees[i].salary} ");
            }
            Console.WriteLine();
            // print values with foreach loop.
            Console.WriteLine("Printing values with foreach loop");
            foreach (var d in employees)
            {
                Console.WriteLine($"ID = {d.id}, Name = {d.name}, salary =
{d.salary} ");
            }
            Console.WriteLine();
            // print values with lambda exp.
            Console.WriteLine("Printing values with lambda exp");
            employees.ForEach(e => Console.WriteLine($"ID = {e.id}, Name = {e.name},
salary = {e.salary} "));
            Console.WriteLine();
            // print values with linq.
            Console.WriteLine("Printing values with linq");
            var value = from R in employees
                        select R;
            value.ToList().ForEach(g => Console.WriteLine($"ID = {g.id}, Name =
{g.name}, salary = {g.salary}"));

            Console.Read();

        }
```

Output


C:\WINDOWS\system32\cmd.exe
Printing values with for loop
ID = 20221, Name = zandaya, salary = 1500000
ID = 20222, Name = karan, salary = 1600000
ID = 20223, Name = hailey, salary = 1500000
ID = 20224, Name = zoe, salary = 1500000
Printing values with foreach loop
ID = 20221, Name = zandaya, salary = 1500000
ID = 20222, Name = karan, salary = 1600000
ID = 20223, Name = hailey, salary = 1500000
ID = 20224, Name = zoe, salary = 1500000
Printing values with lambda exp
ID = 20221, Name = zandaya, salary = 1500000
ID = 20222, Name = karan, salary = 1600000
ID = 20223, Name = hailey, salary = 1500000
ID = 20224, Name = zoe, salary = 1500000
Printing values with linq
ID = 20221, Name = zandaya, salary = 1500000
ID = 20222, Name = karan, salary = 1600000
ID = 20223, Name = hailey, salary = 1500000
ID = 20224, Name = zoe, salary = 1500000

Q. create a class product and add var and print the product name and brand whose product price more than 500.

Code

```
class Product
    {
        public string Product_name;
        public int Product_price;
        public string Product_Brand;
        public int Product_ID;
    }
    internal class Program
    {
        static void Main(string[] args)
        {

/*****************************************************************************
 * Author : Nalli_prudhvi                                                    *
 * Purpose: create a class product and add var and print the product name and *
 *         brand whose product price more than 500.                          *
 *****************************************************************************/

            {

                List<Product> products = new List<Product>()
                {
                new Product{Product_name =
"shoes",Product_price=3000,Product_Brand="Nike",Product_ID=20221},
                new Product{Product_name =
"bag",Product_price=400,Product_Brand="Wild_craft", Product_ID=20222},
                new Product{Product_name =
"speaker",Product_price=1000,Product_Brand="Boat", Product_ID=20223},
                new Product{Product_name =
"choclate",Product_price=300,Product_Brand="cadbury", Product_ID=20224}
                };
                // print values with for loop.
                Console.WriteLine("Printing values with for loop");
                for (int i = 0; i < products.Count; i++)
                {
                    if(products[i].Product_price>500)
                    {
                        Console.WriteLine($"Product_Brand =
{products[i].Product_Brand}, Product_name = {products[i].Product_name} ");
                    }
                }
                Console.WriteLine();
                // print values with foreach loop.
                Console.WriteLine("Printing values with foreach loop");
                foreach (var d in products)
                {
                    if(d.Product_price>500)
                    {
                        Console.WriteLine($"Product_Brand = {d.Product_Brand},
Product_name = {d.Product_name} ");
                    }
                }
                Console.WriteLine();
                // print values with lambda exp.
```

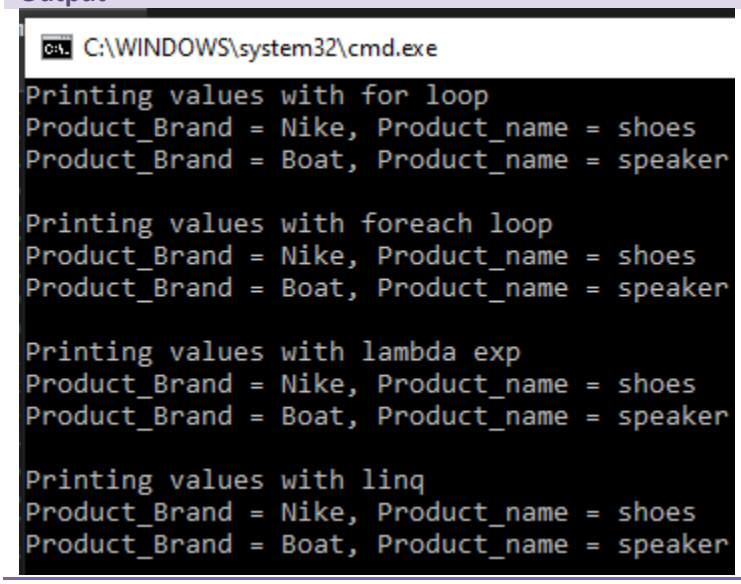
```
                Console.WriteLine("Printing values with lambda exp");
                products.Where(d => d.Product_price > 500).ToList().ForEach(y =>
Console.WriteLine($"Product_Brand = {y.Product_Brand}, Product_name =
{y.Product_name}"));
                Console.WriteLine();
                // print values with linq.
                Console.WriteLine("Printing values with linq");
                var value = from R in products
                            where R.Product_price > 500
                            select R;
                value.ToList().ForEach(g => Console.WriteLine($"Product_Brand =
{g.Product_Brand}, Product_name = {g.Product_name}"));

                Console.Read();

            }

        }
    }
```

Output



Q create a class department and add var and print the Id and name of Department whose emp_count more than 500.

Code

```
class Department
    {
        public int id;
        public string name;
        public int emp_count;
    }
    internal class Program
    {
        static void Main(string[] args)
        {
/*****************************************************************************
 * Author : Nalli_prudhvi                                                    *
 * Purpose: create a class department and add var and print the Id and name of    *
 *       department whose emp_count more than 500                            *
 *****************************************************************************/


            List<Department> Deptemp = new List<Department>()
                {
                new Department{id=20221,name="HR",emp_count=45},
                new Department{id=20222,name="PRODUCTION",emp_count=75},
                new Department{id=20223,name="R&D",emp_count=35},
                new Department{id=20224,name="DEVELOPMENT",emp_count=55}
                };
            // print values with for loop.
            Console.WriteLine("Printing values with for loop");
            for (int i = 0; i < Deptemp.Count; i++)
            {
                if (Deptemp[i].emp_count > 50)
                {
                    Console.WriteLine($"dEPARTMENT_ID = {Deptemp[i].id},
DEPARTMET_NAME = {Deptemp[i].name} ");
                }
            }
            Console.WriteLine();
            // print values with foreach loop.
            Console.WriteLine("Printing values with foreach loop");
            foreach (var d in Deptemp)
            {
                if (d.emp_count > 50)
                {
                    Console.WriteLine($"DEPARTMENT_ID = {d.id}, DEPARTMET_NAME =
{d.name} ");
                }
            }
            Console.WriteLine();
            // print values with lambda exp.
            Console.WriteLine("Printing values with lambda exp");
            Deptemp.Where(A => A.emp_count > 50).ToList().ForEach(y =>
Console.WriteLine($"EPARTMENT_ID = {y.id}, DEPARTMET_NAME = {y.name}"));
            Console.WriteLine();
            // print values with linq.
            Console.WriteLine("Printing values with linq");
            var value = from R in Deptemp
```

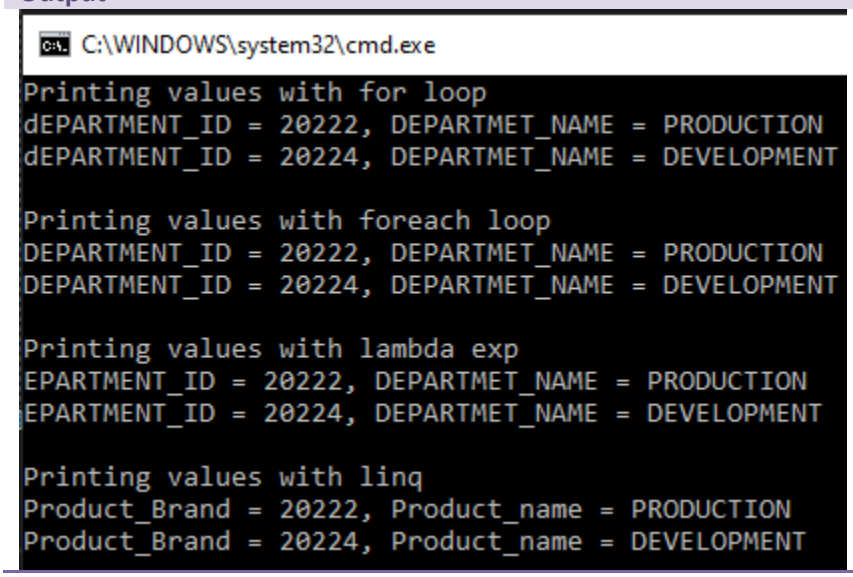
```
                        where R.emp_count > 50
                        select R;
            value.ToList().ForEach(g => Console.WriteLine($"Product_Brand = {g.id},
Product_name = {g.name}"));

            Console.Read();

        }


    }
```

Output



Q. create a own class and variables and itialize with some value

Code

```
class BankAcc
    {
        public string Acc_num;
        public string Acc_name;
        public decimal Acc_Balance;
    }
    internal class Program
    {
        static void Main(string[] args)
        {
/*********************************************************************************
 *                                                                               *
 * Author : Nalli_prudhvi                                                        *
 * Purpose: create a own class and variables and itialize with some value        *
 *                                                                               *
 *********************************************************************************/

            List<BankAcc> accounts = new List<BankAcc>()
                {
                new
BankAcc{Acc_num="123ASD456",Acc_name="GOKU",Acc_Balance=5500.00m},
                new
BankAcc{Acc_num="123ASD457",Acc_name="GOHAN",Acc_Balance=52500.00m},
                new
BankAcc{Acc_num="123ASD458",Acc_name="GOTEN",Acc_Balance=4500.00m},
                new
BankAcc{Acc_num="123ASD459",Acc_name="TRUNKS",Acc_Balance=2500.00m}
                };
            // print values with for loop.
            Console.WriteLine("Printing values with for loop");
            for (int i = 0; i < accounts.Count; i++)
            {
                if (accounts[i].Acc_Balance > 3000)
                {
                    Console.WriteLine($"Account_name = {accounts[i].Acc_name},
Account_number = {accounts[i].Acc_num} ");
                }
            }
            Console.WriteLine();
            // print values with foreach loop.
            Console.WriteLine("Printing values with foreach loop");
            foreach (var d in accounts)
            {
                if (d.Acc_Balance > 3000)
                {
                    Console.WriteLine($"Account_name = {d.Acc_name}, Account_number
= {d.Acc_num}");
                }
            }
            Console.WriteLine();
            // print values with lambda exp.
            Console.WriteLine("Printing values with lambda exp");
            accounts.Where(A => A.Acc_Balance > 3000).ToList().ForEach(y =>
Console.WriteLine($"Account_name = {y.Acc_name}, Account_number = {y.Acc_num}"));
            Console.WriteLine();
```

```
            // print values with linq.
            Console.WriteLine("Printing values with linq");
            var value = from R in accounts
                        where R.Acc_Balance > 3000
                        select R;
            value.ToList().ForEach(g => Console.WriteLine($"Account_name =
{g.Acc_name}, Account_number = {g.Acc_num}"));

            Console.Read();


        }
    }
```

Output