Bahria University,

Karachi Campus

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LAB EXPERIMENT NO.

**06**

LIST OF TASKS

|  |  |
| --- | --- |
| TASK NO | OBJECTIVE |
|  | **Recursion** |
| 1 | 1. Write a code which prints the following series:   2 4 8 - - - - n |
| 2 | Write a program which calculates the square of a number using odd number series implemented with the help of recursion concept |
| 3 | Write a program which takes input of an integer number and returns the sum of all numbers. i.e., if input is 3453 then the output should be 15 (3+4+5+3). |
| 4 | Write a program to calculate H.C.F of two numbers, using recursion |
| 5 | Implement file code |

Submitted On:

 7 November 2022

(Date: DD/MM/YY)

**Task 1:** Write a code which prints the following series:

2 4 8 - - - - n

**INPUT:**

public int power(int n)

{

if (n == 0)

{

return 1;

}

int value;

value = 2 \* power(n - 1);

Console.Write(value + "\t");

return value;

}

static void **Main**(string[] args)

{

Program p = new Program();

p.power(5);

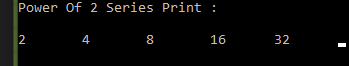
Console.ReadLine();

}

}

}

**OUTPUT:**

****

**Task 2:** Write a program which calculates the square of a number using odd number series implemented with the help of recursion concept

**INPUT:**

public double square(int n)

{

if (n <= 0)

{

return 1;

}

double value = Math.Pow(n, 2);

square(n - 2);

Console.WriteLine("Number :[{0} and squre is {1}]",n,value);

return value;

}

static void Main(string[] args)

{

Program p = new Program();

Console.WriteLine("\nsquare of a number using odd number series :\n");

p.square(7);

Console.ReadLine();

}

}

}

**OUTPUT:**

**Text

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**Task 3:** Write a program which takes input of an integer number and returns the sum of all numbers. i.e., if input is 3453 then the output should be 15 (3+4+5+3).

**INPUT:**

public int Sum(int number)

{

int sum=0, reminder;

while (number>0)

{

reminder = number % 10;

sum = sum + reminder;

number = number / 10;

}

Console.WriteLine("Sum of Digits :{0}",sum);

return sum;

}

static void Main(string[] args)

{

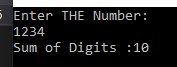
Program p = new Program();

Console.WriteLine("Enter THE Number:");

int number = int.Parse(Console.ReadLine());

p.Sum(number);

**OUTPUT:**

****

**Task 4:** Write a program to calculate H.C.F of two numbers, using recursion. **INPUT:**

static int hcf(int x, int y)

{

if (y == 0)

return x;

return hcf(y, x % y);

}

static void Main(string[] args)

{

Program p = new Program();

Console.WriteLine("Enter THE First Number:");

int x = int.Parse(Console.ReadLine());

Console.WriteLine("Enter THE second Number:");

int y = int.Parse(Console.ReadLine());

p.HCF(x,y);

Console.WriteLine("HCF of " + x + " and " + y + " is: " + hcf(x, y));

**OUTPUT:**

**Text

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**Task 5:** Implement file code.

**INPUT:**

class Program

{

private static Dictionary<string, string> errors = new Dictionary<string, string>();

public static List<FileInfo> result = new List<FileInfo>();

public static void SearchForFiles(string path)

{

DirectoryInfo dirinfo = new DirectoryInfo(path);

try

{

foreach (var fileName in dirinfo.GetFiles())

{

result.Add(fileName);

}

foreach (string directory in Directory.GetDirectories(path))

{

SearchForFiles(directory);

}

}

catch (System.Exception ex)

{

errors.Add(path, ex.Message);

}

}

static void Main(string[] args)

{

string path = @"F:\THIRD SEMESTER\cald lecture";

SearchForFiles(path);

foreach (var item in result)

{

Console.WriteLine(item);

}

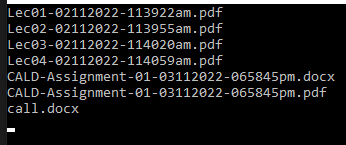
Console.ReadLine();

}

}

}

**OUTPUT:**

****