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Distributed Computing
Experiment No. 1

AIM: Write a program to demonstrate Load Balancing / Task Assignment Schemes using static load balancer.

Code:

```
import java.util.Scanner;
import java.awt.*;

class LoadBalancer
{
	static void printLoad(int servers,int Processes)
	{
		int each=Processes/servers;
		int extra=Processes%servers;
		int total=0;
		for(int i=0;i<servers;i++)
		{
			if(extra-->0)
				total=each+1;
			else
				total=each;
			System.out.println("Servers "+(char)('A'+i)+ " has  "+total+ "Processes");
		}
	}
	public static void main(String args[])
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter the number of servers and Processes: ");
		int servers=sc.nextInt();
		int Processes=sc.nextInt();
		while(true)
		{
			printLoad(servers,Processes);
			System.out.print("\n 1. Add Servers \n 2. Remove Servers\n 3. Add
Processes \n 4. Remove Processes \n 5. Exit \n");
			switch(sc.nextInt())
			{
				case 1: System.out.println("How many more Servers?: ");
					servers+=sc.nextInt();
					break;
				case 2: System.out.println("How many Servers to remove? : ");
					servers-=sc.nextInt();
					break;
				case 3: System.out.println("How many more Processes?: ");
```

```
                                    Processes+=sc.nextInt();
                                    break;
                            case 4: System.out.println("How many Processes to remove ?: ");
                                    Processes-=sc.nextInt();
                                    break;
                            case 5: return;
                        }
                    }
                }
}
```

Output:

```
oem@oem-HP-ProDesk-400-G7-Microtower-PC:~/Documents/Megha Soni$ java LoadBalancer
Enter the number of servers and Processes:
9
12
Servers A has  2Processes
Servers B has  2Processes
Servers C has  2Processes
Servers D has  1Processes
Servers E has  1Processes
Servers F has  1Processes
Servers G has  1Processes
Servers H has  1Processes
Servers I has  1Processes
```

```
 1. Add Servers
 2. Remove Servers
 3. Add Processes
 4. Remove Processes
 5. Exit
1
How many more Servers?:
5
Servers A has  1Processes
Servers B has  1Processes
Servers C has  1Processes
Servers D has  1Processes
Servers E has  1Processes
Servers F has  1Processes
Servers G has  1Processes
Servers H has  1Processes
Servers I has  1Processes
Servers J has  1Processes
Servers K has  1Processes
Servers L has  1Processes
Servers M has  0Processes
Servers N has  0Processes
```

```
 1. Add Servers
 2. Remove Servers
 3. Add Processes
 4. Remove Processes
 5. Exit
3
How many more Processes?:
16
Servers A has  2Processes
Servers B has  2Processes
Servers C has  2Processes
Servers D has  2Processes
Servers E has  2Processes
Servers F has  2Processes
Servers G has  2Processes
Servers H has  2Processes
Servers I has  2Processes
Servers J has  2Processes
Servers K has  2Processes
Servers L has  2Processes
Servers M has  2Processes
Servers N has  2Processes
```

```
 1. Add Servers
 2. Remove Servers
 3. Add Processes
 4. Remove Processes
 5. Exit
2
How many Servers to remove? :
6
Servers A has  4Processes
Servers B has  4Processes
Servers C has  4Processes
Servers D has  4Processes
Servers E has  3Processes
Servers F has  3Processes
Servers G has  3Processes
Servers H has  3Processes
```

```
 1. Add Servers
 2. Remove Servers
 3. Add Processes
 4. Remove Processes
 5. Exit
4
How many Processes to remove ?:
8
Servers A has  3Processes
Servers B has  3Processes
Servers C has  3Processes
Servers D has  3Processes
Servers E has  2Processes
Servers F has  2Processes
Servers G has  2Processes
Servers H has  2Processes

 1. Add Servers
 2. Remove Servers
 3. Add Processes
 4. Remove Processes
 5. Exit
5
oem@oem-HP-ProDesk-400-G7-Microtower-PC:~/Documents/Megha Soni$
```