

## Language Choice:

PHP

## Problem Statement 1:

There are a number of servers running our application.

Given  $N$  servers, in 5 minutes interval, every minute, the load is checked and if load is less than 50%, the servers are either reduced to  $N/2$  else they are increased to  $2N + 1$

**Input :** No. of servers ( $N$ ), server load every minute

**Output :** The number of servers running at the end of 5 minutes

### Example:

#### Input:

2 (2 servers)

10 60 50 15 20 (On 1st minute - 10% load, on 2nd minute - 60% load & so on)

#### Output:

1 (After 5 minute, 1 server is running)

## Problem Statement 2:

Everyday, the restaurant has a limited number of breads, vadas and samosas. The restaurant needs to optimise orders in a way that they can generate maximum profit.

Vadapav needs two bread and a vada

Samosapav needs two bread and a samosa

#### Input:

First input is: no. of breads, no. of vadas and no. of samosas available in the restaurant

Second input is: Price of Vadapav & price of Samosapav set by the restaurant

#### Output:

Maximum profit possible

### Example:

#### Input:

9 2 3 (9 breads, 2 vada, 3 samosa)

10 15 (Rs.10 - Vadapav, Rs.15 - Samosapav)

#### Output:

55 (Maximum profit possible is Rs.55)