**Assumption:**

1. All people are potential fitness and health adopters
2. When fitness level is reached then healthy persons would broadcast message as word of mouth to others.
3. 2 mode of invite, one with health club advertisement, second with consumer agent(healthy) broadcast as word of mouth
4. People always keep changing. They never stick on same routine, so as time persons health agents get converted to normal agents

**Variables and initial values**

Iteration interval 60 secs

Consumer agent broadcast message if it stay interval of 35 seconds as consumer.

Consumer stays 45 second then change to potential user.

**Ad effect calculated as plot of number of consumption agent to time**

**Word of mouth effect as plot of consumption agent to time**

|  |  |  |
| --- | --- | --- |
| Parameters | Default values | Justification |
| Xdim | random | Agent location in grid |
| Ydim | random | Agent location in grid |
| Color | Blue,red | Blue:Potential agents, Red :consumer agents |
| Potential person | 50 | Initial value of people in the system |
| Health club count | 3 | 3 health clubs in the system |
| Iteration | 60 sec |  |
| Consumer broadcast interval | 35 sec |  |
| Consumer deadline time | 45 sec |  |
| Minimum energy level | 1 |  |
| Maximum energy level | 6 |  |
| Energy increase rate | 1 |  |
| Energy decrement rate | 0.25 |  |
| Vision area | 4 grid cells | In cartesian product |

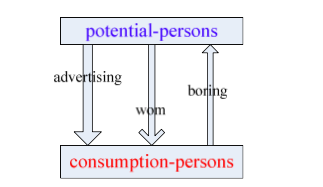
**Potential agents**

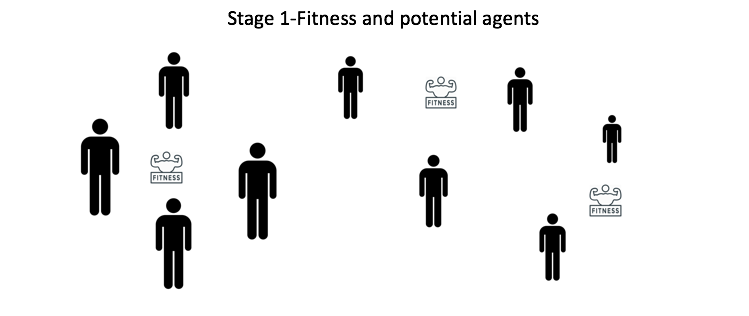
This represents the general people who have no regular routine of work outs. This people are represented by different energy levels inorder to represent the attitude of people to invite to stay fit. This is represented in 50 \* 50 grid. It is based on assumption mentioned above.

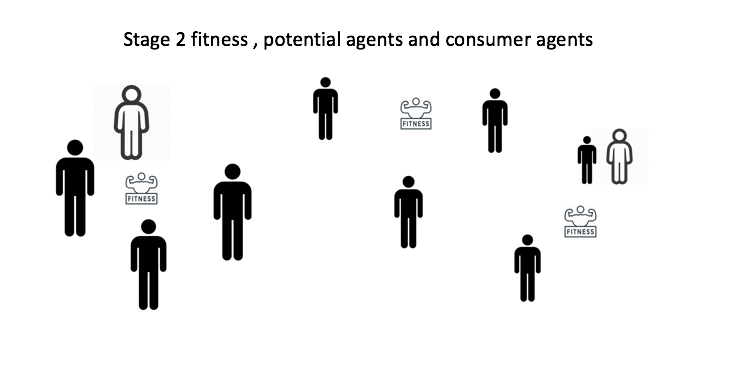
**Consumer Gents**

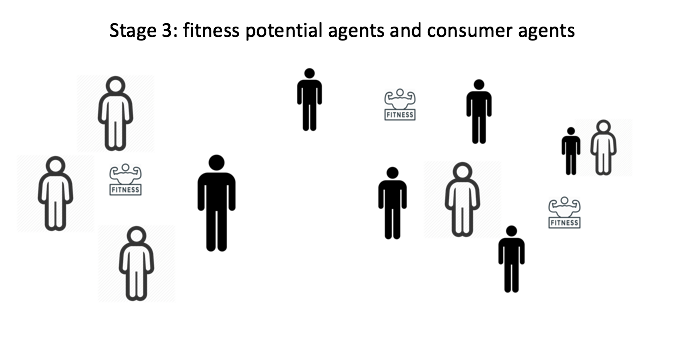
They are the people who got transformed from potential people on getting invite and people who have a good work out. Humans have a changing attitude to give up on fitness over time on a monotonuos routine. So if deadline time is reached they get converted to potential agents. These do have a chance to become potential agents if they get more motivation which is received as invite.

**Agent transformation rules**









**Death Rules**

If energy level of an agent falls below<1 , then agent(potential agent and consumer agent) is removed from the system

**Energy updation rule**

If (invite received==true)

Then

if(current energy<max(energy)

Then

Current energy=current energy +1

Else

Do nothing

Else

Current energy =current energy -0.25;

**Broad cast rules**

At the start of each iteration(60 sec)

Health club send invite to vision 4 neighbourhood in four directions

At the half of each iteration(30 sec)

Consumer agent sends invite to vision 3 neighbourhood in four directions.

**Move rule**

Consumer agent by the end of each iteration search for a location with energy level equivalent to or grater than its current energy level within its vision area. If any location found within the social reach then it will move to new location based on distance rule.

While traveling to the new position it need to loose the energy level equivalent to the distance rule.

