PROBLEM:

All calculations are done on hypothetical basis.

There is a city, considering total area of 50 sqkm.  
The governor has been lately observing a rapid growth of crimes in his city and is unable to stop them.  
In order to help him he asked his competent task force to devise a plan in which he can deploy certain personnel to look after the crimes and stop them.  
So the task force came up with a solution.

SOLUTION:

For a more concentrated analysis of the problem the decided the following measures.

* The entire city of area 50 sqkm has been divided into grids.

Grid: refers to a certain area of the city.

50 SQKM

5sqkm

0,10

0,1

50 SQKM

0 1 2 3 4 5 6 7 8 9

10,0

10,10

0 1 2 3 4 5 6 7 8 9

As shown in the above diagram the city was divided into 50 areas, each of 5 sqkm.

Technical Aspect:

The task force applied simple knowledge of Data structures at the backend of devising this grid.

Particularly the entire grid is contained in a 2D-Array and hence each grid is labeled with a co-ordinate to help them locate a specific area easily.

* Now the task force appointed each area a representative which will collect a certain data which will be:

Crime reported in one day.

How many included armed robberies.

How many cases in which the victim was left in intense condition.

Technical Aspect:

The 2D-Array is like a composite data set in which these crime stats will be stored.

* The task force collected this data for consecutive 10 days.

They simultaneously updated the previous data of the day and included the recent stats.

* On the eleventh day the task force marked the areas red those in which the highest crimes were observed.

Technical Aspect:

The task force initialized a variable

Int red zone;

Which they set the value to 1 if the certain grid of array co-ordinate (area) was in serious need of deployment personnel to look after and solve the crime cases and punished the convicts.

Else set the value 0 to those areas/grids/co-ordinates in which as such no immediate effect was to be observed.

* The diagram below shows hypothetical conditions in which certain areas were highlighted red depicting immediate effect required.

To solve this two deployments of some personnels will be deployed.