

## ■ Game Feature:

We aim to create a 2D running game application, where runner will face obstacles; for instance, cactus in a desert. Runner is required to jump while cactus continuously comes towards the runner.

- a. Game will be started as soon as the project is debugged and compiled. Then, runner will be opting to jump while it will be confronted with cactus.
- b. If the collision between runner & cactus is observed, then the game will be end.
- c. Each successful attempt of overcoming the obstacle, runner will gain one point.
- d. After each 10 points, the speed of the movement of cactus will be increased.
- e. The game will be running at an infinite loop, and the iteration will be stopped as soon as the collision is detected.

## ■ Mathematical Explanation/ Logical Observation:

We will be assuming runner as well as cactus (obstacle) a rectangle box, and calculations will follow by in the similar way:

```
while (x_iObject <= x_fObstacle && x_fObject >= x_iObstacle)
{
    if (y_iObject > y_fObstacle)
        continue;
    else
        // collision
}
```

## ■ Movement of Components of Environment:

- a. Runner's movement will be along Y Axis where x ordinate's value will remain constant.
- b. Cactus's movement will be along X Axis where y ordinate's value will remain constant.
- c. At the beginning, we will be focusing to implement our project only for a static background.