

## REPORT

Game : Guardian

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This is in addition to the read-me file. The read-me gives you what the game is about and its salient features.

Here are some of the ideas we used, what “new” things we implemented, the logic behind the game,etc

### Ideation/Logic in the program

- We have a shooter object which is allowed to move left and right. ( on key press).
- Again on key press it can release bullets. ( used **poling** for these)
- The demons are created randomly( the **randomization** involved the mix of system time, and some number-theoretic approach to generate a different sequence each time ( a concept similar to what we learnt in generating good **hash functions**). So this involved a concept from our Algorithms course.
- Maintained arrays for the position of the demons and bullets on screen and did a manual direct check each time to see if they ever collided. If yes, we increased points and removed both of them from the screen.
- If the demon collided with the shooter we just called a function to quit the game and move to a page to enter scores.
- If the demon just reached the base and didn't collide with the shooter we decreased life.
- The power bar generation involved colouring and maintaining a loop. We slowed its motion as the number of times it was filled kept increasing.
- The god power drawing involved the usage of **reading files**. The files contained the bit-vectors about the details of the shape of the specific god-power.
- Further, we added **sound** when bullet was released, when there is collision,etc
- We maintained **separate pages** for the different screens and moved across them.
- Writing high scores onto a file.

### The new things we learnt

- To maintain separate pages and to navigate across them.
- To access system time and to generate random numbers using some number-theory.
- Reading from files(shapes) and writing onto files ( high score)
- Generating sound.
- The concept of poling.
- And mainly, the art of integrating code across files, as in, integrating code written by three people into 1.

- ➔ To learn to manage ( time and work) a huge project, and documenting the stuff which needed to be done,splitting the work etc

### **What more could have been done?**

- ➔ We could made the demons also shoot bullets and let you avoid them.
- ➔ If you cross a certain point threshold, we can make a sort of “protection” for the shooter to avoid the demon's bullets.
- ➔ Making new levels more challenging by things like certain demons have to be shot at more than once to kill.
- ➔ A final level with a final demon to beat, on doing so which you win the game and can make wish to god ! ( well not telling we can grant them though :D)

But, the lack of time was a major reason in preventing us from doing most of this and other innovations, but we hope the game in its present stage is good and satisfies you, and provides you with a good gaming experience.