Project Title: Paratroopers

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Introduction:

Paratroopers is a 2-D graphically oriented game. It uses EzWindows to run its application. The game is a copy of the actual one with a few of redefined basic rules according to the requirements.

Functionality:

The game is developed on C++ programming language and EzWindows as graphical interface. The game runs in a simple window. Main function consists of two functions.

* Startwindow
* Game

First one uses mouseclickcallback and picture erase and draw functions are used to start the game on a different background picture.

Whole of the second function is in an infinite primary loop which breaks when game ends. Second function's definition consists of several different functions calling which includes function for:

* *Moving of helicopters:* increasing the x coordinates of helicopter by a small factor every time the loop executes and meanwhile dropping the soldiers at the places chosen by rand function.
  + - *Dropping of paratroopers on random positions:* increasing y coordinate by small factor every time loop executes and keeping track of last twenty paratroopers dropped using arrays by defining all the possible states of paratroopers by global variable
    - *Setting angle of canon:* detecting the mouse click and using it to change direction by drawing a line on an angle theta with axis of x using renderline
    - *Shooting the bullet:* detecting the mouse click to call the bulletvelocity function and moving it along extension of the drawn line and tracking the database of last twenty bullets fired
    - *Determining the score:* determining the collision in the neighbourhood of paratrooper and increasing score every time on collision.

All this is done using some of libraries of C++ and EzWindows such as cmaths,rect.h,ctime,etc.

Game plan:

The game starts with an introduction picture in EzWindows showing the game details and telling about the controls. This window reacts on the mouse click or key press and opens a second picture containing an open space and a canon at the centre bottom. After the setup helicopters come one by one from the specific heights and drop down a fixed number of paratroopers throughout their way on screen at random positions. Canon has ability to change direction and fire bullets. Canon is required to protect itself from the paratroopers. Each time a bullet hits the paratrooper, he dies and score increases. Score is displayed on the top right corner. If he doesn't die, he lands and walk towards the canon. After a certain number of paratroopers reach the canon they blow it up and game ends.

Rules:

1. Canon cannot have translatory motion. It changes its direction only with angle varies between minus pi to pi.
2. Bullet cannot hit the helicopters.
3. Bullet cannot hit the paratrooper once it has reached the ground.
4. With each successful hit score increases in the multiples of ten.
5. When a maximum of five paratroopers reach the canon, game ends.

User View:

User just needs to click the starting window to start the game. Once the game is started he has the only control over the direction of canon and firing by clicking on appropriate tab on the screen. All other things will happen autonomously. Score will be displayed during the program. Game ends when 5 soldiers manage to reach the canon. High score is displayed at the end.

Reference:

Programming in C++:

Third Edition Resources Jim Cohoon and Jack Davidson