Design Overview for "Ha Noi in the air" program

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Summary of Program

Based on the famous war in my country where my compatriots fought bravely for 12 days and nights to stop the B52 plane from destroying Hanoi.

The rules are very easy. The player has to destroy the plane as much as possible before running out of time or ammo. The game will challenge the player with two modes "Easy" and "Hard", and a highscore chart that save high score from the player will help them challenge their friends too.

A sketch of sample output:

Required Data Types

Describe each of the records and enumerations you will create using the following table (one per record).

Record 1: Plane

Field Name	Type	Notes
:x	Float	x-position of plane
:y	Float	y-position of plane
:image	Gosu::Image	Image of plane
:vel_x	Float	Distance plane need to move in x to reach new position with same velocity
:vel_y	Float	Distance plane need to move in y to reach new position with same velocity
:angle	Float	Angle of the plane image
:changing	Boolean	Decide which plane will change direction
:count	Interger	Countdown until the plane change direction
:direction	Float	Direction of plane moving

Record 2: Highscore

Field Name	Type	Notes
:name	String	Players's name
:score	Interger	Players's score

Enumeration 1: ZOrder

Value	Notes
BACKGROUND	z=0
PLANE	z=1
BOOM	z=2
GUN	z=3
WORD	z=4
BULLET	z=5
INSTRUCTION	z=6
SHOOT	z=7

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Overview of Program Structure

List the main functions/procedures you are going to need to create this program. For each function/procedure provide its name and a brief description of what it will do.

Don't spend too long on this at this stage. Focus on the main things you think you are likely to need and you can build on this as your program develops.

Include a structure chart (once you have your proposal approved by your tutor)

Functions that draw object in screen:
1. Draw_plane
- Draw planes so player can shoot them
2. draw_shootpoint (shoot_point)
- Draw a shootpoint following the mouse so players can easily shoot planes.
3. draw_gun gun
- Draw a gun
4. draw_menu
- Writing all indexes on the screen which is necessary.
5. draw_instruction
- Draw an instruction screen
6. draw_highscore
- Display highscore
7. draw_status
- Draw player status (player's name, player's score, time left)
8. Draw_bullet
- Draw the ammo left

Game play functions:
1. mouse_over_plane (plane)
- Allow player to destroy planes when move their mouse to the planes and click.
2. remove_plane
- Removing the planes which are out of screen.
3. remove_crash_plane
- Removing the planes which are destroyed.
4. generate_plane
- Generating plane.
5. button_down(id)
- Helping players use their keyboard.
6. move (plane, speed)
- Move plane from right to left.
7. save_highscore
- Save player's high sccore.
8. BubbleSort
- Help program to update the Highscore chart.

Structure chart: