Technical University of Moldova

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PPE Laboratory 4

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Title:

Windows Timer. Animation.

Contents:

- Windows timer

Mandatory Objectives:

- Create an animation based on Windows timer which involves at least 5 different drawn objects

Objectives With points:

- Increase and decrease animation speed using mouse wheel;
- Solve flickering problem;
- Add animated objects which interact with each other:
  - Few balls which have different velocity and moving angles. In order to get max points, add balls with mouse, make balls to change color on interaction and any other things that will show your engineering spiri;
  - Any other interesting and reach in animation application;
- Animate a Nyan Cat that leaves a rainbow tail;

Tasks:

- Created an animation using Windows timer;
- (2 pt) Added option to change animation speed with mouse wheel;
- (2 pt) Solved flickering problem by using double buffering. Created another compatible dc to draw objects inside it and at the end copied that dc into our main dc. This makes window update only once and prevents from flickering.
- (6 pt) Added possibility to add objects with different properties (moving angle, velocity, color, radius) using mouse clicks. Also, every object interacts with

each other, there are collisions. Objects mutate a bit their color if there is a collision with another object and equalized the speed of each other.

Short Description:

Objects (balls) are animated inside the window. Changing window size doesn't affect objects, they will always be inside the window and have same moving angle until there is a wall in front of them.

- User can click on an area to create an object with random moving angle, velocity, radius and color;
- It is possible to slow down / speed up the animation speed by scrolling up / down;
- Hotkey Alt-Q: terminates the application.

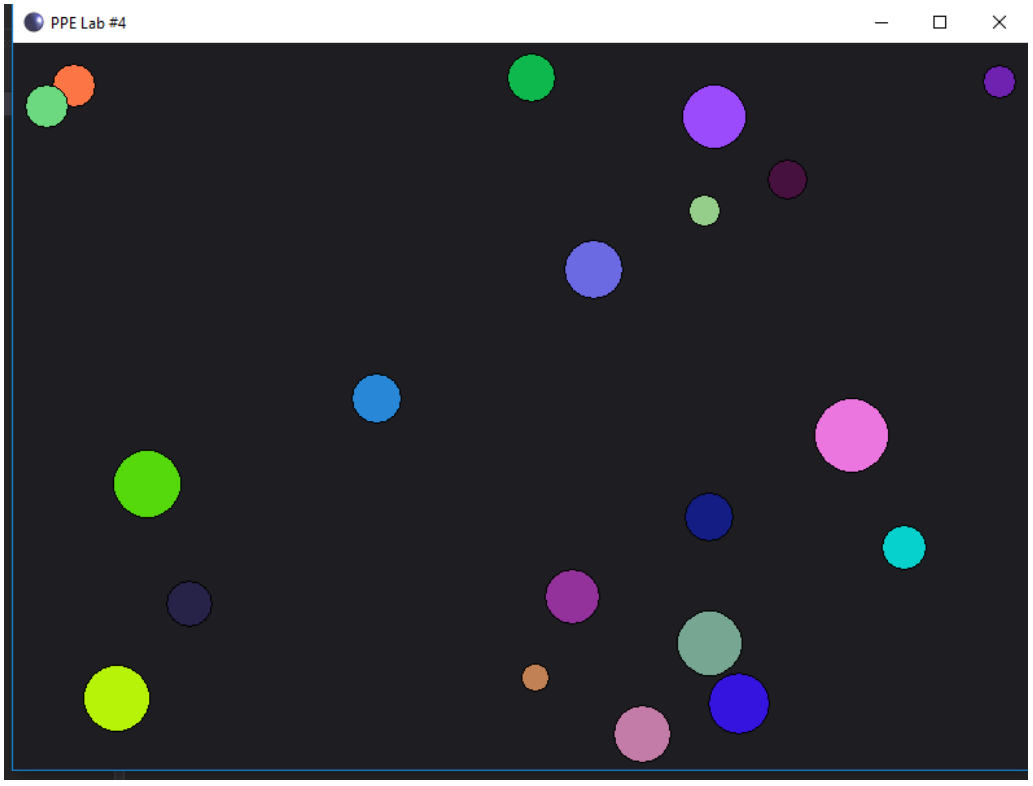

Figure 1: The Windows application

Conclusion

During This lab work i Understand how to add animation in Windows Api. The hardest part was to fix the flickering problem and make realistic behavior of balls during their collision.

References

[1] Section I, Chapter 8, Programming Windows by Charlez Petzold