Assignment-6 (B1)

Problem definition -

Write a C++ Program for line drawing using DDA Bresenham with patterns such as solid, dotted, dashed, dot-dash & thick

Objectives :

To draw different kinds of lines using basic line drawing algorithms.

Outcomes :

Understanding of how different kinds of lines are drawn in images.

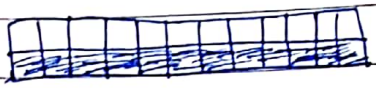
H/w & s/w packages :

- 64 bit os
- Qt creator

Theory - Lines can be classified into the following 5 categories -

i) Solid
ii) Dotted
iii) Dashed
iv) Dash-Dot
v) Thick

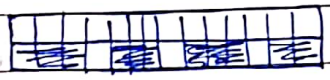
i) Solid lines are the simplest lines we observe everything. They have no special features in them.

 ← solid line

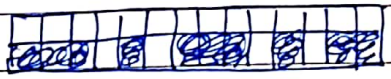
ii) Dotted lines are not continuous lines, but are composed of dots. This can be achieved by skipping every other pixel.

 ← dotted line.

iii) Dash lines are also non-continuous lines But unlike dotted lines, they are composed of small lines spaced with each other. This can be achieved by skipping every n^{th} pixel

 ← dashed line

iv) Dash-dot lines are a combination of dashed and dotted lines consisting of alternate dashes & dots

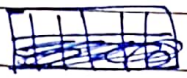
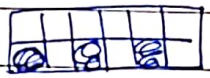
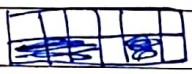
 ← dash-dot line.

v) Thick lines are continuous lines that are broader than solid lines. It can be thought of as Multiple solid lines together.

 ← thick lines

Thick lines can be drawn by generating a rectangle around the line & filling them

Test cases:

Input	expected o/p	Actual o/p	result
Solid ~~leng~~ line length = 6			Pass
Dotted line length : 6			pass
Dashed line length : 7			pass
dash-dot line length = 6			pass
Thick line length 4			pass

Conclusion :

Thus we were able to generate lines using basic Manipulation to our line drawing algorithms.