VIT AP UNIVERSITY, ANDHRA PRADESH

Lab Sheet 1 : Basic Graphics Primitives

Academic year: 2020-2021 **Branch :**CSE B.Tech

Semester: Fall **Date:17/11/20**

Faculty Name: **Prof.Mukti Kaushal Shah** **School:** SCOPE

Student name: M.Taran **Reg. no.: 19BCE7346**

1. Write a program to implement ***Bresenham's Line Drawing*** Algorithm in OpenGL/Python.

Input : (5,5) to (13,9).

Output:

```
int x1=5;
int y1=5;
int x2=13;
int y2=9;
int yd=y2-y1;
int xd=x2-x1;
int e=0;
int y=y1;
for (int x=x1; x<=x2; x++){
point(x,y);
if((2*(e+yd))<xd){
e+=yd;
}
else{
y++;
e+=(yd-xd);
}
}
```

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2. Write a program to ***draw a line using DDA line*** drawing Algorithm in OpenGL/Python

Input : (20,10) to (30,18).

Output:

```
int x0 = 20;
int y0 = 10;
int x1 = 30;
int y1 = 18;
size(200, 200);
int dx = x1 - x0;
int dy = y1 - y0;
int steps = abs(dx) > abs(dy) ? abs(dx) : abs(dy);
float xinc = dx / (float) steps;
float yinc = dy / (float) steps;
float x = x0;
float y = y0;
for (int i = 0;i <= steps; i++)
{
  point(x,y);
  x += xinc;
  y += yinc;
}
```

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3. Write a program to ***draw circle*** in OpenGL/Python.

Input: radius r=50 centered point (100,100)

Output:

```
def setup():
    size(400,200)
def draw():
    circle(100, 100, 50);
```