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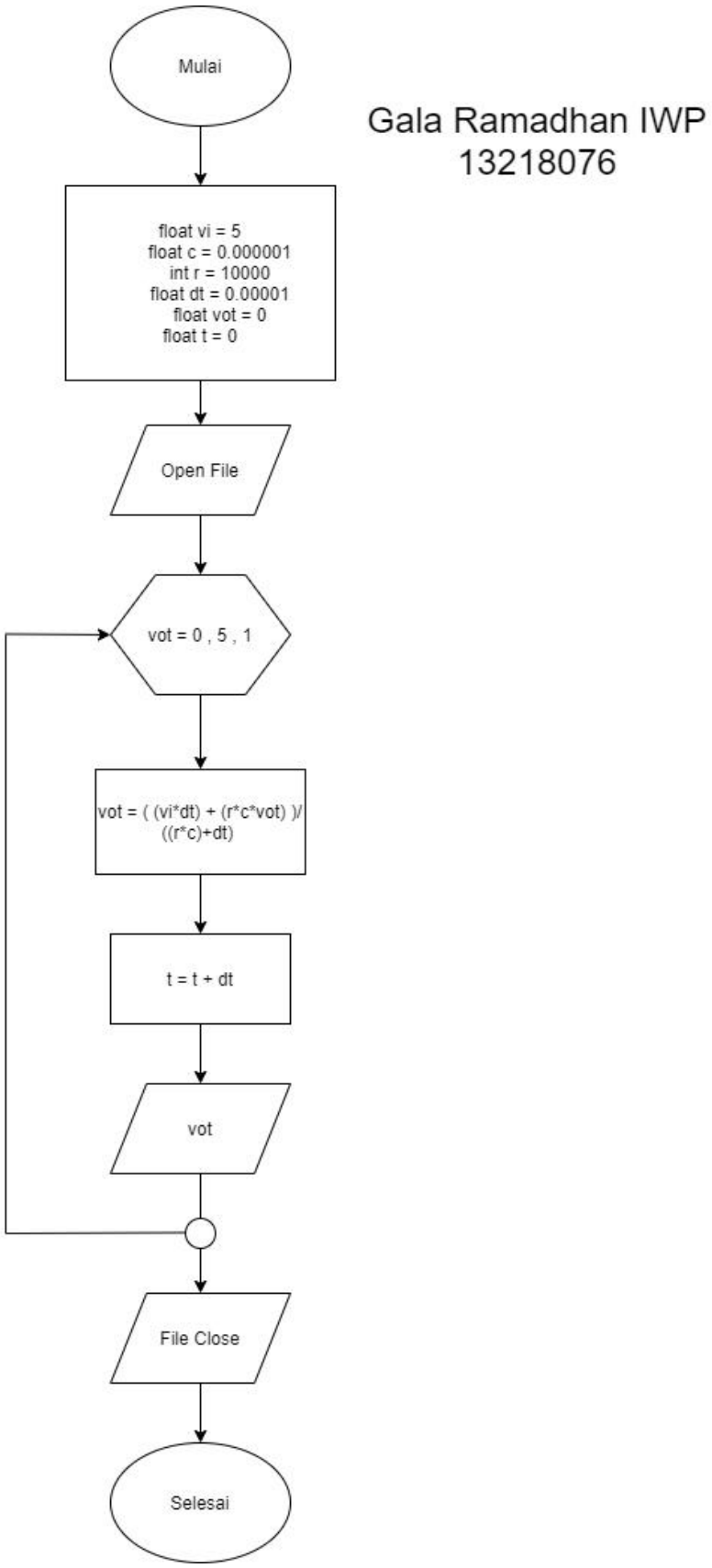
Flowchart :



Penurunan Rumus :

$$\frac{Vi - Vc(t)}{R} = C\frac{dVc}{dt}$$

$$\frac{Vi}{R} - \frac{Vc(t)}{R} = C\frac{dVc}{dt}$$

$$(Vi * dt) - (Vc(t) * dt) = RC(Vc(t) - Vc(t-1))$$

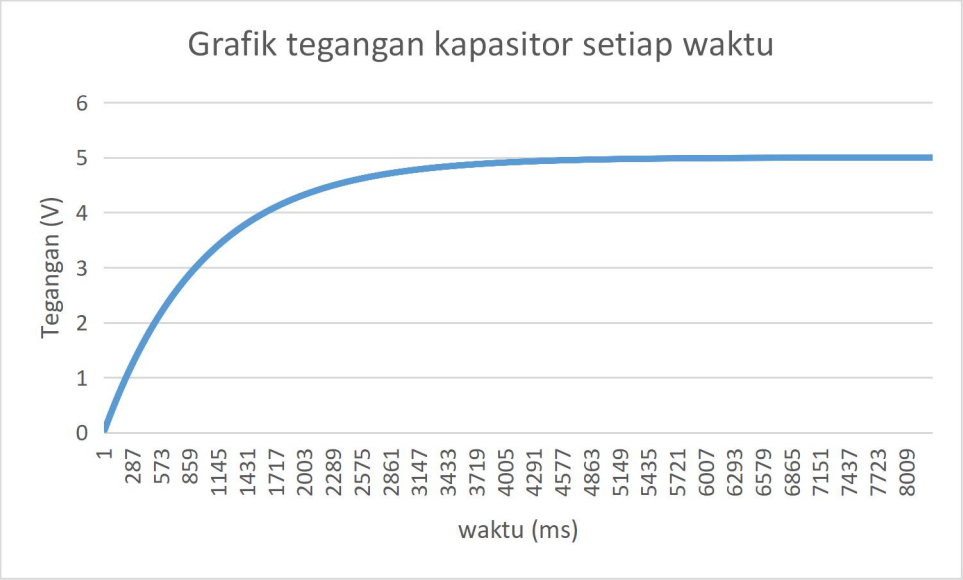
$$(Vi * dt) - (Vc(t) * dt) = (R * C * Vc(t)) - (R * C * Vc(t-1))$$

$$(Vc(t) * R * C) + (Vc(t) * dt) = (Vi * dt) + (R * C * Vc(t-1))$$

$$Vc(t)((R * C) - dt) = (Vi * dt) + (R * C * Vc(t-1))$$

$$Vc(t) = \frac{(Vi * dt) + (R * C * Vc(t-1))}{((R * C) - dt)}$$

Grafik yang diperoleh



Code :

```c
#include <stdio.h>

int main(){

    float vot, vi, dt;

    vi = 5;
    float c = 0.000001;
    int r = 10000;
    dt = 0.00001;
    vot = 0;

    printf("vot = %f\n", vot);

    FILE *fp;

    fp = fopen("rc.txt", "w+");
    float t = 0;
    while( vot<=5-0.001 ){
        vot = ( (vi*dt) + (r*c*vot) )/ ((r*c)+dt) ;

        t+=dt;

        printf("vot = %f\n", vot);
        fprintf(fp, "%f \t%f\n", vot, t);
        //fputs("%f", fp, vot);

    }
    fclose(fp);

}
```