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LAMPIRAN

1. Skrip Fungsi Objektif

```
function cost = PID_opt(PIDK)

assignin ('base','PIDK',PIDK);

sim('GA_Shunt.slx'); %disesuaikan dengan model yang akan
dioptimalkan

cost = Ob_Fun(length(Ob_Fun))

end
```

2. Skrip Optimasi Algoritma Genetika

```
%Tuning parameter PID dengan Algoritma Genetika
%Inisialisasi parameter GA

no_var = 3;
lb = [0 0 0];
ub = [200 50 50];

%GA Options
ga_opt =
gaoptimset('Display','off','Generations',30,'PopulationSize',
50,'SelectionFcn',@selectionstochunif,'CrossoverFcn',@crossov
erscattered,'MutationFcn', {@mutationuniform,
0.01},'PlotFcns',@gaplotbestf);

fn = @(PIDK) PID_opt(PIDK) %disesuaikan dengan model yang
dioptimalkan
Command
```

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```
[PIDK,best] =
ga((obj_fn),no_var,[],[],[],[],lb,ub,[],ga_opt);
```

3. Skrip Parameter Motor DC Penguatan Magnet

```
clear
clc

% Parameter Motor DC Penguatan Magnet
Va = 12;
K  = 0.2;
ra = 2;
%Tl = 0.003;
Tl = 0;
J  = 1.2;
B  = 0.2;
La = 0.5;
PIDK = [1 1 1];
```

4. Skrip Parameter Motor DC Penguatan Terpisah

```
clear
clc

% Parameter Motor DC Penguatan Terpisah
La = 0.01
Lf = 0.167
12
24
0.004
```

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```
ra = 0.013

rf = 1.43

Tl= 0

J  = 0.21

B  = 1.074*10^(-6)

PIDK = [1 1 1]
```

5. Skrip Parameter Motor DC Penguatan Shunt

```
clear
clc

% Parameter Motor DC Penguatan Shunt
La = 0.12
Lf = 12
Vi = 24
K  = 1.8
ra = 0.6
rf = 600
Tl = 0
B  = 0.1
J  = 0.3
PIDK = [1 1 1]
```

6. Skrip Parameter Motor DC Penguatan Seri

```
clear
clc

rameter Motor DC Penguatan Seri
 0.0014
 1
```

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```
Vf = 100
Va = 100
K  = 0.329
ra = 0.01485
rf = 0.07485
Tl = 0
J  = 0.5
B  = 0.1
PIDK = [1 1 1]
```

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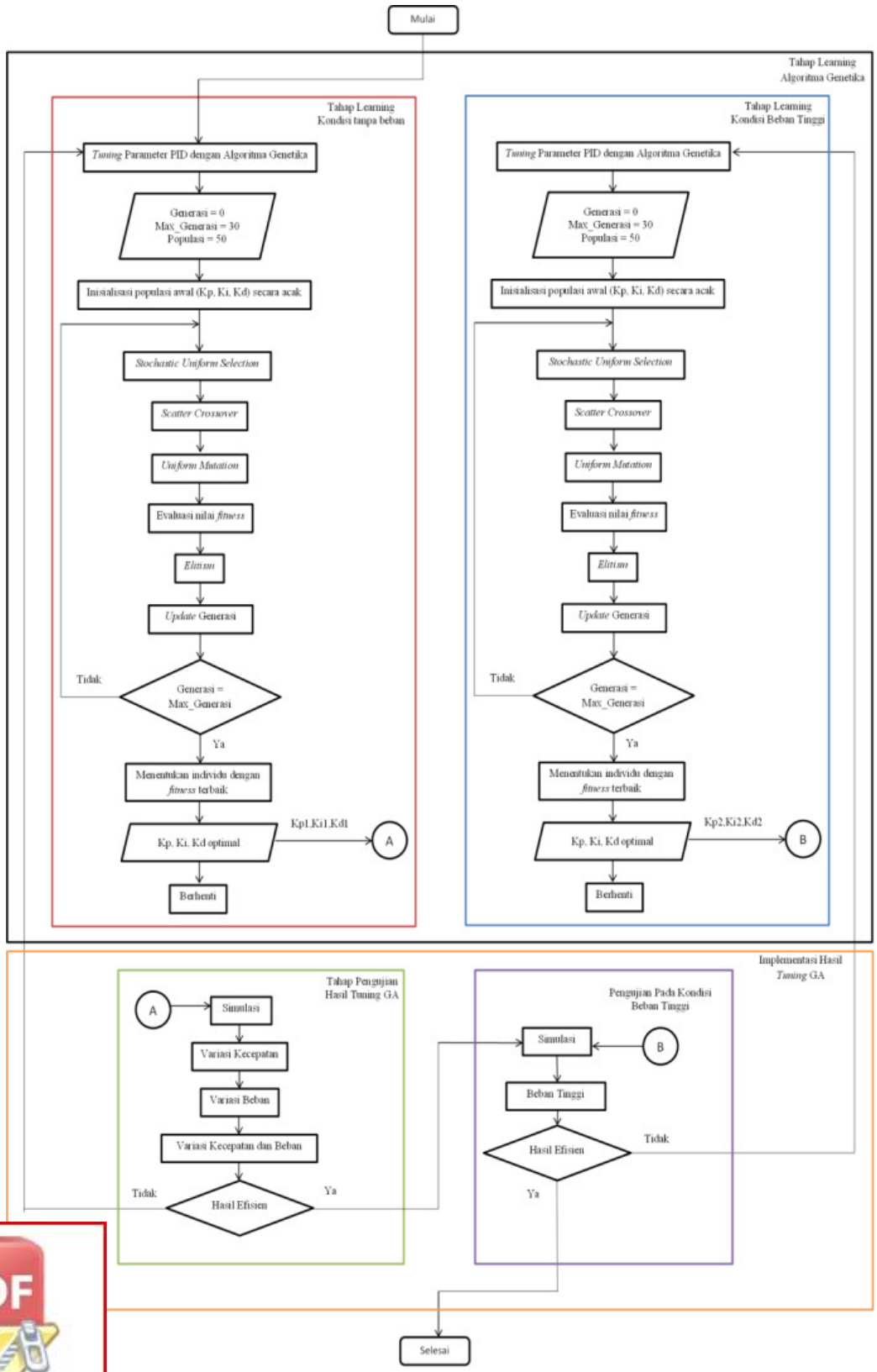
7. Diagram Alir Implementasi Algoritma Genetika



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