Lampiran 1 *M-file* 1 `data_generate`

```
function [S,I]=data_generate(S0,I0,beta,gama,T)
S=zeros(T+1,1);I=zeros(T+1,1);
S(1)=S0;I(1)=I0;N=S0+I0;
for t = 1:T
    S(t+1)=S(t)-beta*S(t)*I(t)/N+(gama*I(t));
    I(t+1)=I(t)+beta*S(t)*I(t)/N-(gama*I(t));
end
```

Lampiran 2 *M-file* 2 `likenew`

```
function [x,langkah]=likenew(x0,tol)
x=x0;langkah=0;
[z,j]=funnewton(x0);
fp = z;
while norm(fp)>tol;
    langkah=langkah+1;
    [z,j]=funnewton(x0);
    fp=z;
    jp=j;
    x=x0-inv(jp)*fp;
x0=x;
end
function [z,j]=funnewton(x)
S0=85;I0=15;beta=0.028;gama=0.032;T=200;
[S,I,s1,i1]=data_generate(S0,I0,beta,gama,T);
z=zeros(2,1);
s=S;i=I;N=S0+I0;
z(1)=((T+1)/x(1))-(1/N)*sum((i.*s)./(1-
((x(1).*i.*s./N)+(x(2).*i))));
z(2)=((T+1)/x(2))-sum(i./(1-((x(1).*i.*s./N)+(x(2).*i))));

j=zeros(2,2);
j(1,1)=-(T+1)/(x(1)^2)-(1/(N^2))*sum(((i.*s).^2)./((1-
((x(1).*i.*s./N)+(x(2).*i))).^2));
j(1,2)=-1/100*sum(((i.^2).*s)./((1-
((x(1).*i.*s./N)+(x(2).*i))).^2));
j(2,1)=-1/100*sum(((i.^2).*s)./((1-
((x(1).*i.*s./N)+(x(2).*i))).^2));
j(2,2)=-(T+1)/(x(2)^2)-sum(((i.^2)./(1-
((x(1).*i.*s./N)+(x(2).*i))).^2));
```