**Optmization Technique assignment**

**Bounding phase Algorithm**

**Done by :**

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clc;

clear;

close all;

x(1)=input('enter initial point x0');

d=input('enter increment parameter');

if((fun(x(1)-d)>fun(x(1)))&&(fun(x(1))>fun(x(1)+d)))

disp('search towards right direction ');

k=1;

x(k+1)=x(k)+(2^(k-1))\*d;

while(fun(x(k+1)))<(fun(x(k)))

k=k+1;

x(k+1)=x(k)+(2^(k-1))\*d;

end

disp(' minimum lies in interval :')

disp(x(k-1));

disp(x(k+1));

end

if((fun(x(1)-d)<fun(x(1)))&&(fun(x(1))<fun(x(1)+d)))

disp(' search towards left direction ');

k=1;

x(k+1)=x(k)-(2^(k-1))\*d;

while(fun(x(k+1))<fun(x(k)))

k=k+1;

x(k+1)=x(k)-(2^(k-1))\*d;

end

disp( ' minimum lies in interval :');

disp(x(k+1));

disp(x(k-1));

end

if((fun(x(1)-d)>fun(x(1)))&&(fun(x(1))<fun(x(1)+d)))

disp('minimum lies in interval :')

disp(x(1)-d);

disp(x(1)+d);

end