

1. Draw a flow chart to illustrate how to apply binary search to find a root of a one-dimensional function.
2. Write a Matlab function to implement your flow chart.

3. Let s and t respectively denote a string of four distinct digits. Let N_b denote the number of digits in s appearing at wrong positions in t and N_a denote the number of digits in s appearing at right positions in t .

- Draw a flow chart to determine N_a and N_b for given s and t .

- Let t denote a target and s denote a guess by the user. Draw a while-loop flow chart to get the guess and hint N_a and N_b iteratively until the target is hit.

- Write Matlab codes to implement your flow chart.

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1 - % generate four distinct digits
2 - tt = randperm(10)-1;
3 - t=tt(1:4);
4 - t
5 - % input a string of four digits
6 - s=input('keyin s = ', 's');
7 - % comparison
8 - t(1)==s(1)-'0'
9 - % hint
10 - na=1;nb=1;
11 - fprintf('%d a %d b\n',na,nb);
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