

Draw a Log Trace for all cases without duration

Method:

1. Import the excel data file into matlab. Specifically, import the "Study ID" column as Matrix and import the "occurrence" column as Cell Array.
2. Count the total number of different Study ID as "a".
3. Record the amount of occurrences in each Study as array "o".
4. Choose the biggest number in "o" as "b".
5. Make a array to record all different occurrences, each occurrence corresponds to different number beginning from integer number "1".
6. Create an all-zeros matrix M(a x b).
7. Rewrite the elements in the matrix. Each row represents one study, each element represents an occurrence and rewrite the number of occurrence into each row orderly.
8. Take subarray in each row which contains no 0 element to expand to length of b using imresize() and round() method and replace the original row array with the new array.
6. Use imagesc(M) to plot the picture.
7. Use colormap() and lcolorbar() to indicate the color of each object.

Pseudo-code:

```
a= number of studies;
b= number of the occurrences in the longest study;
M= all zero matrix with a rows and b columns;
Onum(i)= number of occurrences in ith study;
Odifferent(i)= array of different occurrences in all cases corresponding to number i;
Oall= array of all occurrences orderly from the first study to the last study;
j= 0;
For i from 1 to a {
    For l form 1 to Onum(i) {
        j++;
        For k from 1 to length(Odifferent) {
            If Odifferent(k)= Oall(j)
                Then M(i,l)= k, Break;
        }
    }
}
For i from 1 to a {
    Mrow= subMatrix of M whose row is from i to i, column is from 1 to Onum(i);
    Mrow= round(imresize the row length of Mrow to length b);
    the ith row of M=Mrow;
}
Plot the matrix into different colors, different number in the matrix corresponds to one color.
```

Draw histograms of order for each activity

Pseudo-code:

```
-----  
ColorNum=the index of the activity  
l=1;  
For i from 1 to a {  
    For j from 1 to b {  
        If M(l,j)=ColorNum  
        Then H(l)=j; l=l+1;  
    }  
}  
hist(H);  
-----
```

Distribution of Activities using boxplot

Pseudo-code:

```
-----  
ColorNum=the index of the activity  
l=1;  
For ColorNum from 1 to length of Ocolor {  
    For i from 1 to a {  
        For j from 1 to b {  
            If M(l,j)=ColorNum  
            Then H(l)=j; l=l+1;  
        }  
    }  
    Hnum(ColorNum)=l-1;  
}  
begin=1;  
For i from 1 to length of Ocolor {  
    T=bplot(H(1:1,begin:Hnum(i)),i,'outliers');  
    begin=Hnum(i)+1;  
    hold on;  
}  
-----
```