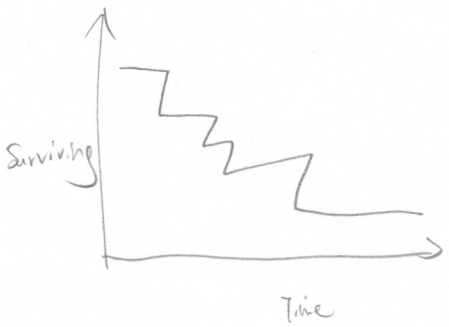
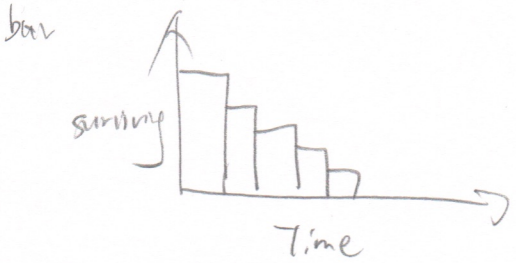
Ideas

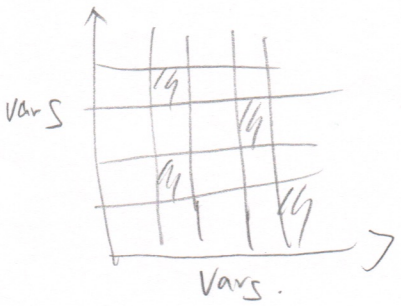
① Survival analysis





② Correlation between variables

heat map



③ view distribution of individual variable

Age

filter by group

treatment

etc.

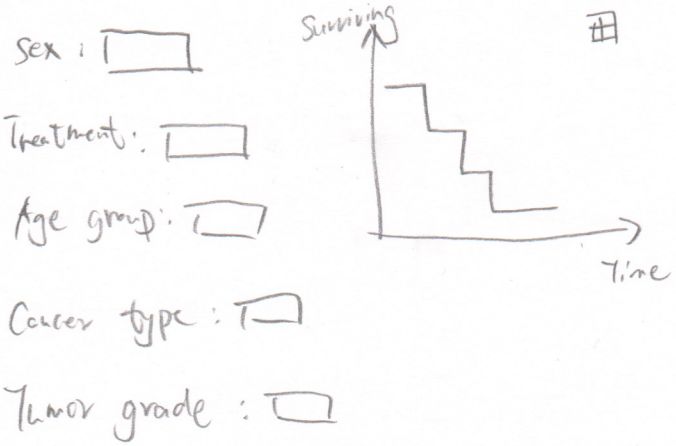
use checkbox

dropdown

multiple selection

Layout

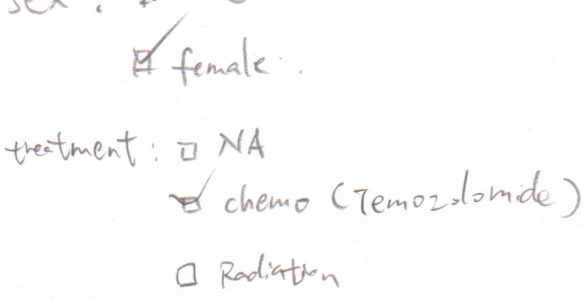
Design I



Task: survival analysis which can be filtered by sex, treatment, age group, cancer type and tumor grade.

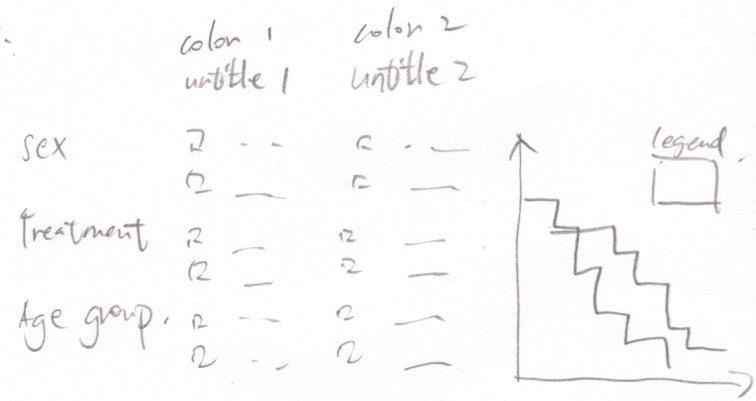
operations: ① choose from checkboxes to filter information of interest

eg.



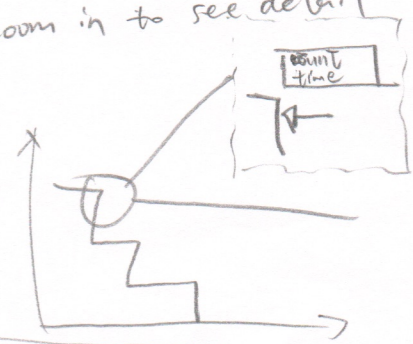
② overlay another surviving analysis plot by clicking +

eg.



① mouse over to see detail info.

② zoom in to see detail



+: ① compare different survival analysis models easily

② filter information of interest easily

-: ① no raw information displayed, potentially distributions of variables.

Design II

layout:

variable: [ ]

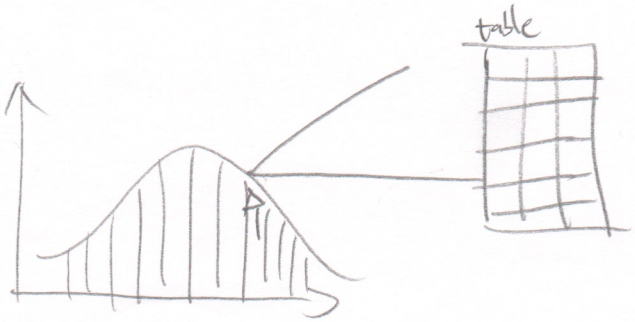
Task: to see the distribution of each variable at a time

operation: ① click on the distribution to see all information linked to that point

eg.

Age	patient ID	Sex	...
30			
30			
30			
.			
.			
.			

② select variable of interest



+: ① view variables' distribution.

② extract detailed information from distribution

- ① no analysis involved.

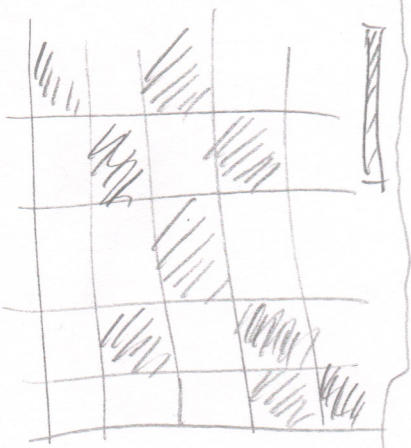
② no filtering of information

③ no comparision of information

Design III

Layout:

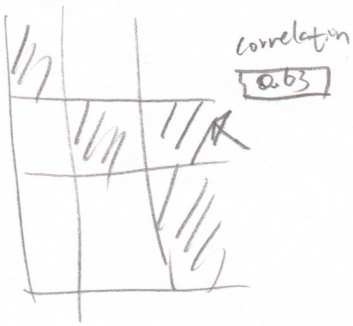
variables: ☑ sex
☐ treatment
☐ cancer type
☐ age
☐ mutation count
⋮



Task: Heatmap of correlations between variables

operations: ① check boxes to select variables of interest

variables: ☑ sex
☑ treatment
☐ ⋮
☐ ⋮
☐ ⋮
⋮



① mouse over to see correlation between two variables

\+ : ① view correlations between any two variables

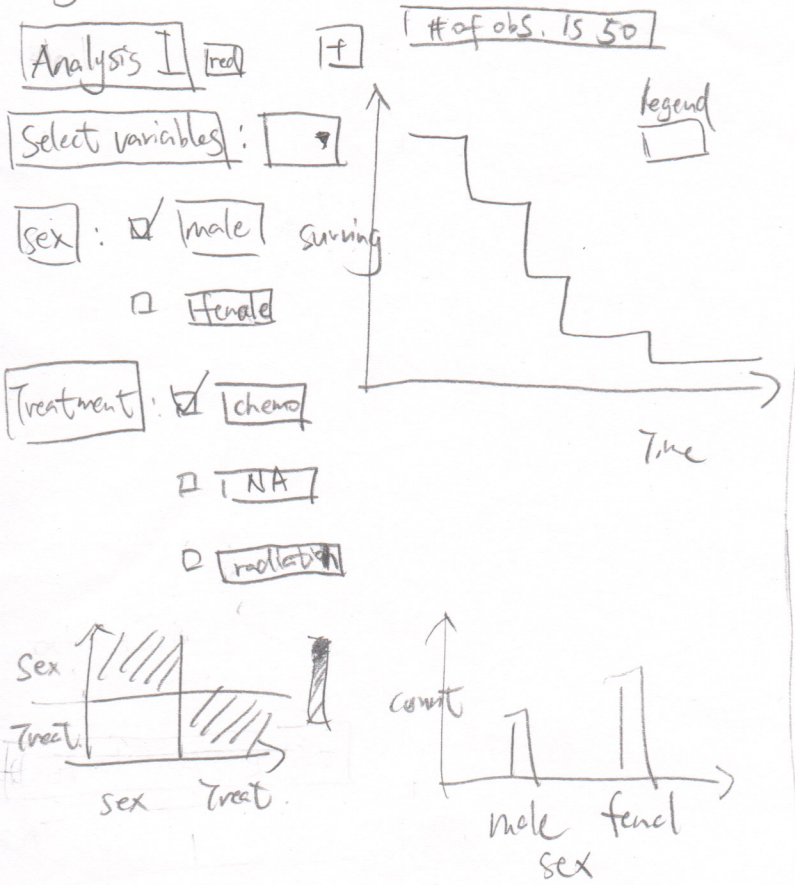
② select variables of interest.

\- : ① no analysis

② no subgroup information

Realization

Layout:



Task: ① survival analysis and compare.

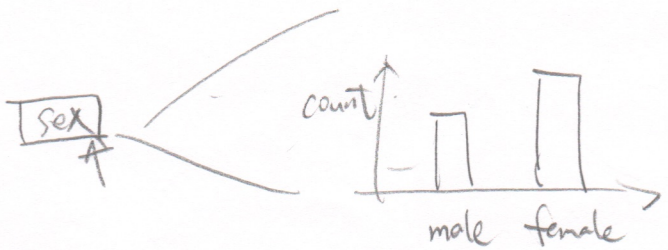
② variable distributions

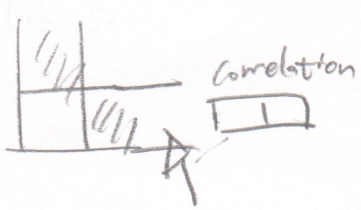
③ heatmap of correlations.

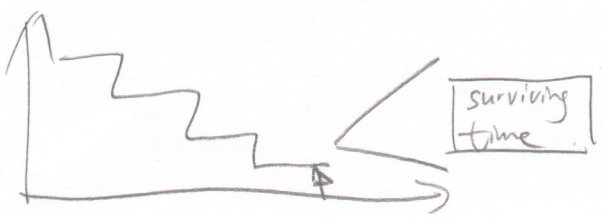
operations: In ①, + can add a analysis, choose filtering variables and select subgroup of interest.

In ②, click sex to view individual variable distributions

In ③, correlation heatmap automatic shown after variables chosen in an individual analysis







Detail:

① software: R

packages: "survival", "shiny", "plotly" ...

② Data to be tested: HW2 data

③ Estimated time to build: 50 hours

④ Implement → Evaluation → Validate

Design

⑤ Task in more details, choose audience/users