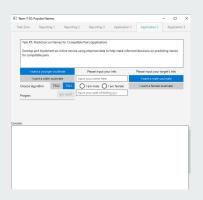
# Comp 3111 project



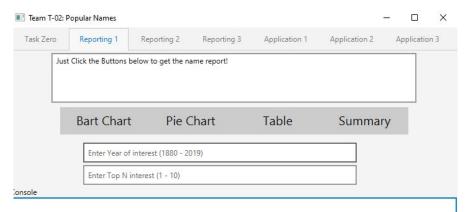
Group members: Liu Pak Wai, Lui ka lung, Yeung Ho Yu

# Added features

- UI theme changed
- warning noise for error alert
- some sound effect
- progress bar and input lock

# TASK 1 showcase

#### Task 1 interface



- Four buttons larger size than the task zero.
- text field with labels remindind user to write valid input
- Put the button on the top, input right below it
- Make sure user knows what can be generated

# Task 1 Data Reporting

- Task 1 reports the Top N popular both males and females names in sepecific year.
- Top N input by user between 1 10 inclusive
- year input by user between 1880 2019 inclusive
- There are total 4 buttons generate result on bar chart, tables, pie chart, summary in console.

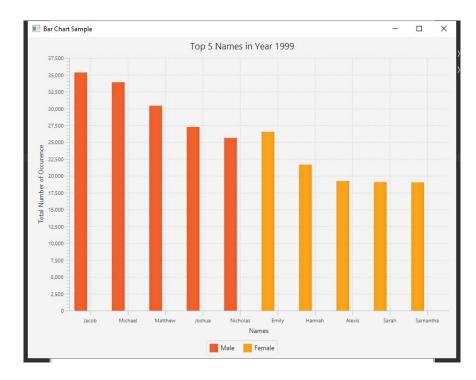
#### Task 1 Bar chart

- Sound effect, there is a whistler sound reminding user that Bart chart is generated.
- There are two required input first box needs to fill year of interest between 1880 2019
- Second one is the Top N requires 1 10,

Bart Chart	Pie Chart	Table	Summary
Enter Year of inter	rest (1880 - 2019)		

# **Task 1 Barchart Output**

- input valid year, topN. for example: 1999, 5
- Male shown on the left orange
- Female shown on the right in yellow
- Y shows the total occurences
- X is the names ]
- Sound effect out~ once press button
- Make users easier to see the result

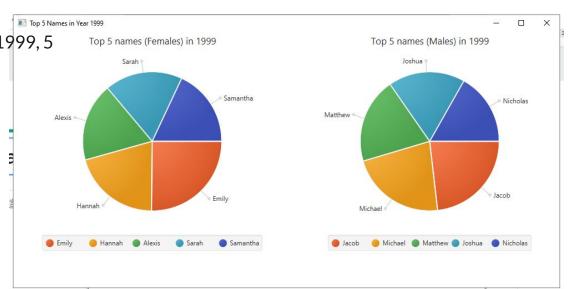


# Task 1 Pie chart output

- input valid year, topN. for example: 1999, 5

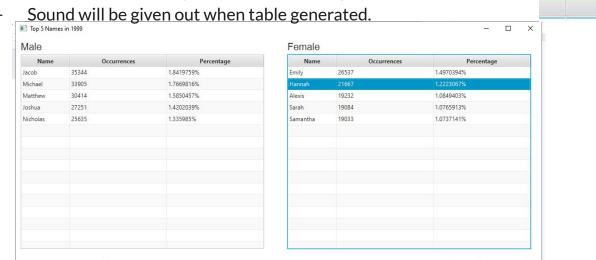
- Female on the left

- Male on the right
- title with the year, Top N
- name shows different color
- Sound effect out~ once press button
- Make users easier to see the result



# Task 1 table

- Male table on the left, Female tableson the right
- table shows the names, occurence, percentage
- sorted in decsending order
- you may manually adjust the order clicking the buttons header



Percentage

# Task 1 summary

- input valid input, (year only)
- Clicking Summary button
- sound effect
- giving the most popular names that is on specific year
- Result shown on the console

1999	
5	

#### Console

Summary of Results in the year 1999:

- --- Jacob (Male) is the most popular name with the number of occurences of 35344,which represents 1.84% of total Male in year 1999
- --- Emily (Female) is the most popular name with the number of occurences of 26537, which represents 1.50% of total Female in year 1999

# Task 1 Alert : invalid input

- for year and the input N we expect users enter valid input digital number within range
- Year 1880 2019
- N1-10
- if enters non numerical value into the "year" field, following message will be given out.
- if enters non numerical value into the "N" field, all buttons except summary will give alert
- PS: summary do not need top N as input



# Task 1 Alert: invalid input 0 digit

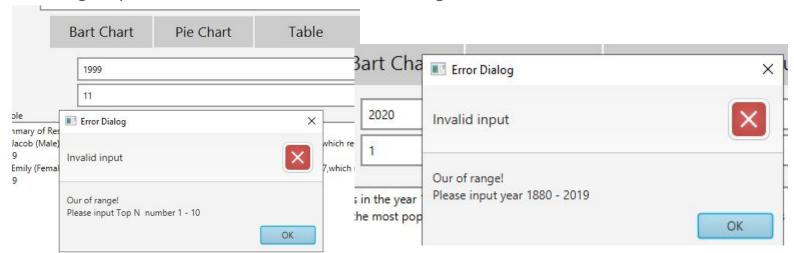
- input number with first digit = 0 is not allowed eg. 01,02..
- following out put with alert IMAGE and SOUND will be given



e) is the most popular name with the number of occurences of 26537, which represents 1.509

# Task 1 : Alert out of range

- Input N > 10, input N < 0. year > 2019, year < 1880.
- following out put with alert IMAGE and SOUND will be given



# Task 1: Alert empty input

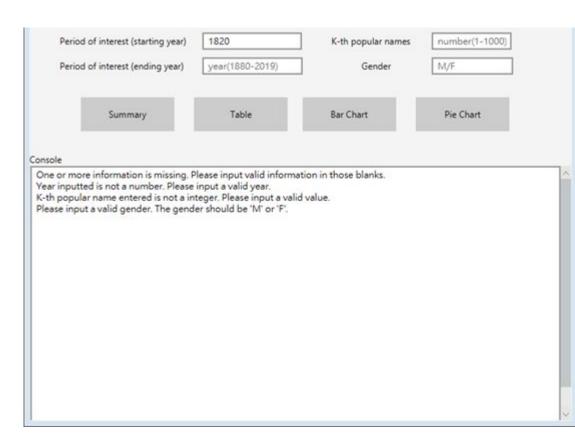


# TASK 2 showcase

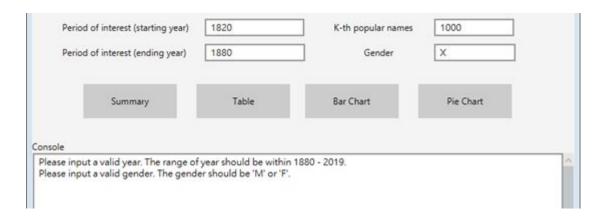
#### Task2 error alert

When user type in a invalid input,

console will prompt up messages to alert the user.



#### Task2 error alert



The error message will be adjusted if

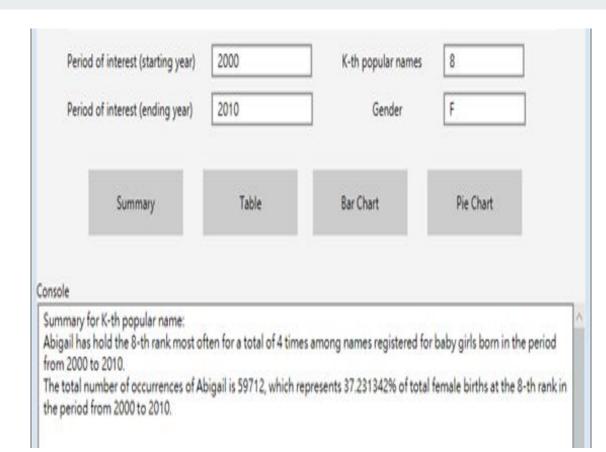
the user enters their information afterwards.

# Task2 summary result

When user enter correct information,

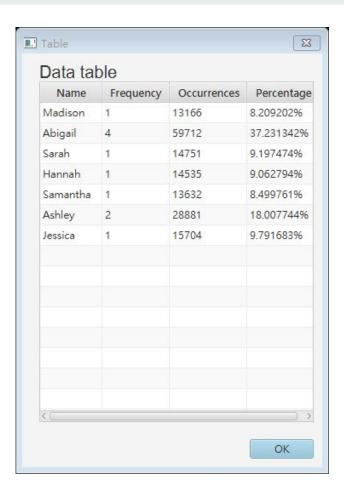
a summary prompt will be shown in the console.

Name, Number of times appeared, total number and the percentage will be shown for K-th popular names.



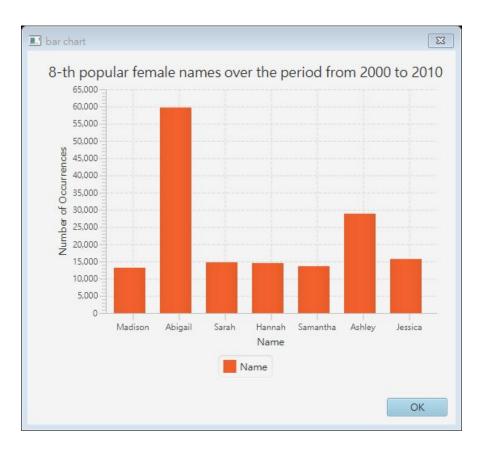
### Task2 table

Data table will be shown if the user selects "table" button. Name, Frequency, Occurrences and Percentage will be shown in the output.



#### Task2 bar chart

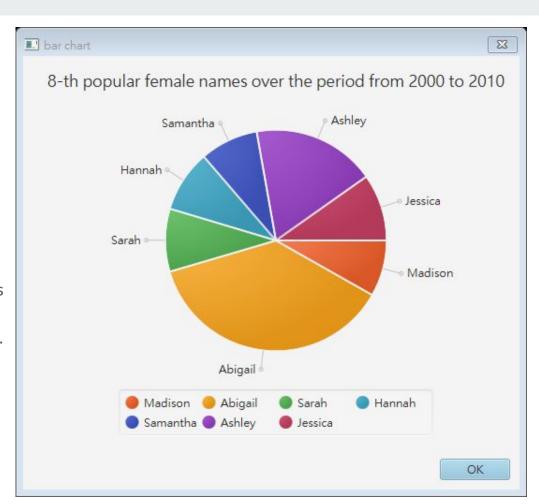
A bar chart will be generated if the user clicks "Bar Chart" button. The bar chart is showing the result of names which have been ranked at specific rank from a period of time and associated with a bar representing the total number of occurrences during that period of time.



# Task2 pie chart

A pie chart will be generated when user clicks

the "Pie Chart" button. The pie chart is showing the result of names which have been ranked at specific rank from a period of time and is shown as a sector in pie chart representing the total number of occurrences during that period of time.



# Task2 normal

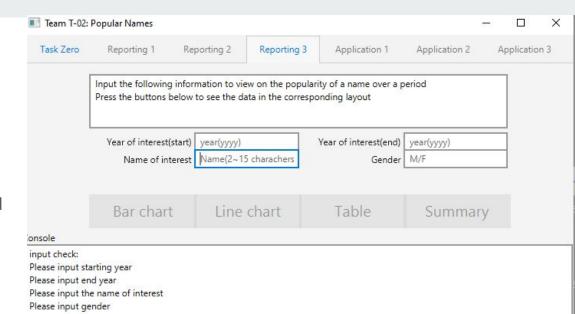
# Task2 normal

# TASK 3 showcase

The button will lock if the input is invalid

This check for empty input

console will tell user the input is empty



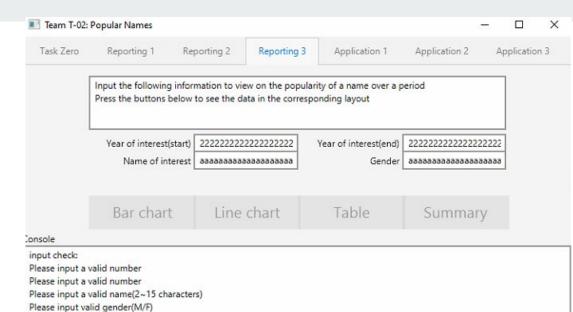
The button will lock if the input is invalid

This check for overflow

console will tell user the input is invalid

- if the number is over 4 digit
- if name is out of range(2-15)

this also checks if gender is M/F or not

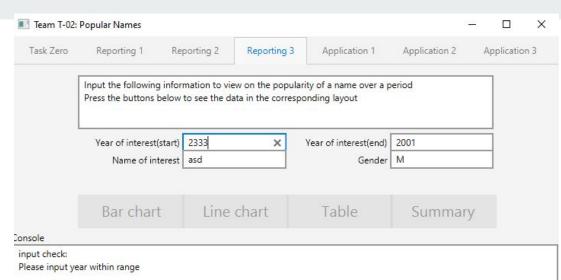


The button will lock if the input is invalid

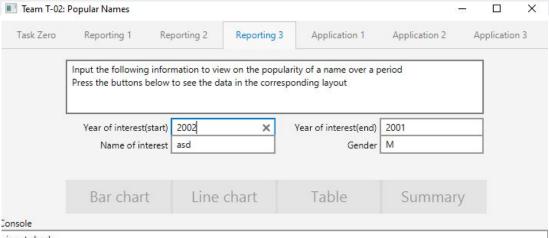
This check for year range

console will tell user the input out of range

range(e.g.1880-2019)



The button will lock if the input is invalid This check for the period(start>end) console will tell user the input is invalid

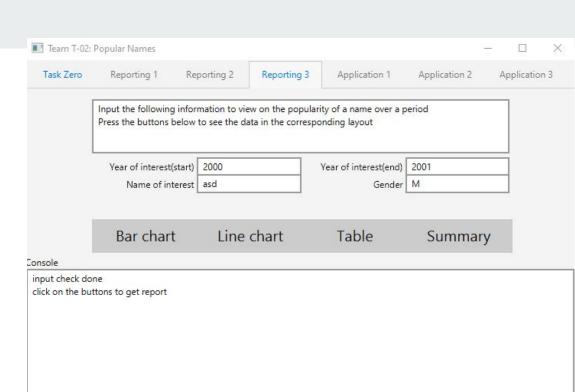


input check:

2002>2001 error:start year is greater than end year

# Task 3 unlock

once the input format is correct
the button will unlock
but name may not exist in the data
the button will still unlock

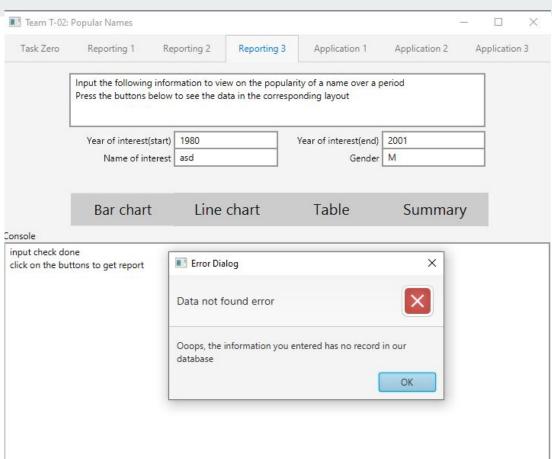


# Task 3 data not found

After the buttons is unlocked

if the user clicked on any of the 4 buttons
this popup will be shown

if the name does not exist or not found



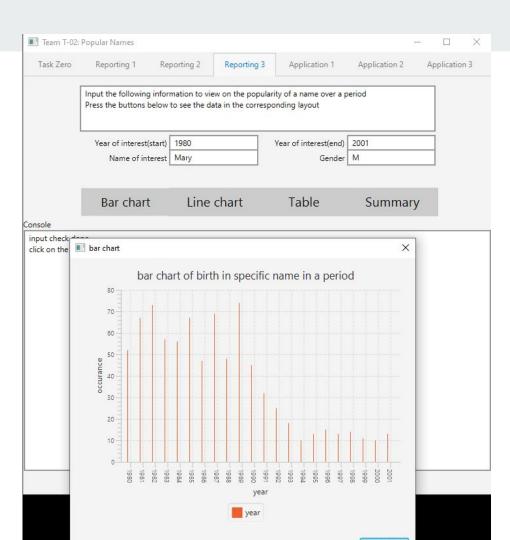
# Task3 show bar chart

after all the input checking

by clicking the bar chart button

a popup will be shown

containing the bar chart with the data of interest



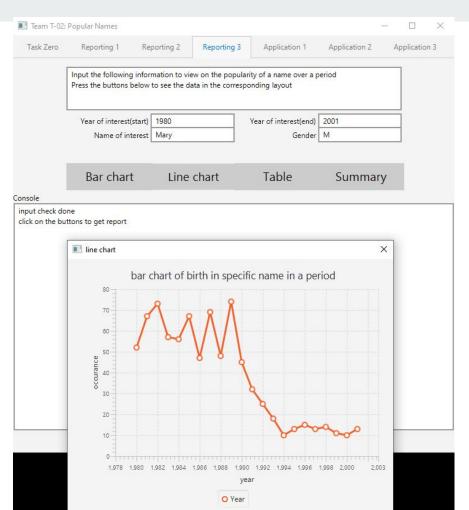
# Task3 show line chart

after all the input checking

by clicking the linechart button

a popup will be shown

containing the line chart with the data of interest



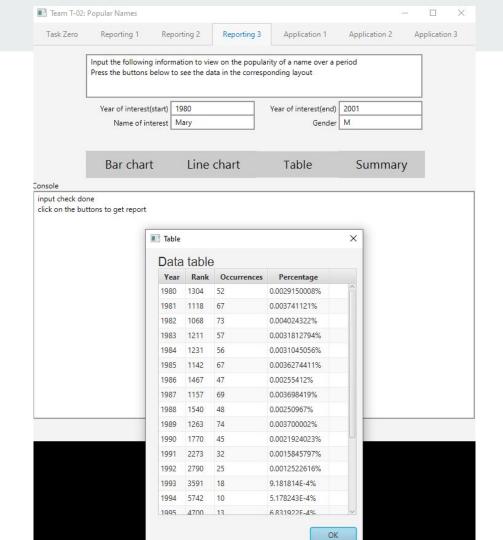
### Task3 show table

after all the input checking

by clicking the table button

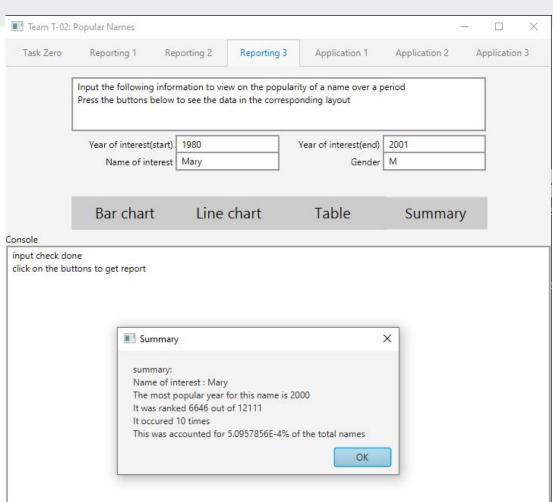
a popup will be shown

containing the table with the data of interest



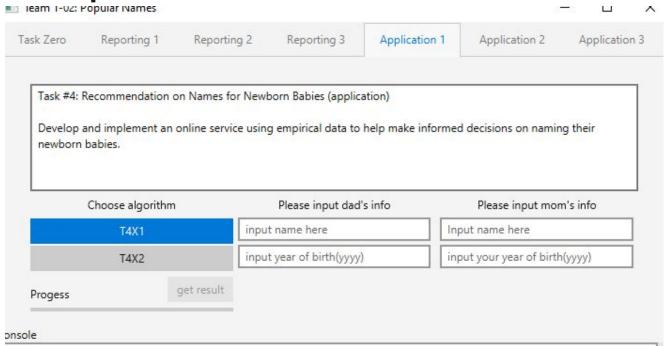
# Task3 show summary

after all the input checking
by clicking the summary button
a popup will be shown
containing the summary



# **TASK 4 showcase**

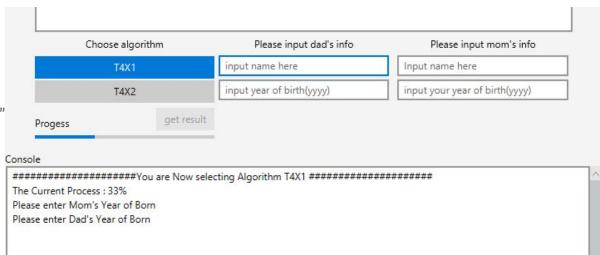
# **Task 4 User interface**



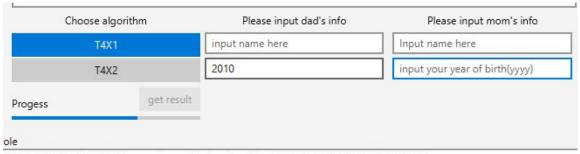
#### **Task 4: Name recommendation**

- T4X1 we need the input of mom year of born and dad year of born.
- T4X2 we need the input of both mom and dad's name, year.
- need to select the algorithm and input the corresponding data
- if there are empty input and the input are required, the button will be disabled.
- there are progress bar and progress shown on the console

- T4X1 selected
- progress 33%
- Console show
- "Please enter Mom year"
- "Please enter Dad year"



- T4X1 selected
- progress 66%
- Console show
- "Please enter Mom year"
- Since we enter dad info already

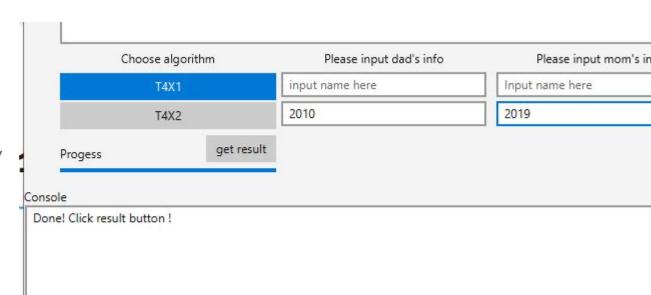


: Current Process : 66%

ase enter Mom's Year of Born

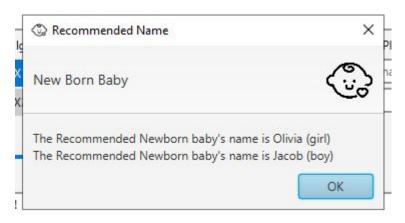
Done! Click result button! shown

- button get result is enable
- progress bar 100%
- message shown on console
- Iphone unlock sound display



#### Task 4 T4X1 OUTPUT

- invalid input of year(1880 2019)
- show windows of recommended name
- Male: most popular name on dad's year
- Female: most popular name on mom year
- SOUND effect display when it pop out
- icon of baby's face is shown
- click ok to exit ~



#### Task 4 T4X2 introduction

- Input we need to have "mom year of born", "dad year of born", "dad name", "mom name"
- We randomly extract the english character from dad name or mom name
- Total number extracted will be equal or less than min length of mom name and dad name
- We take average between mom year of born and dad year of born
- We take random seed as sum of mom's name length and dad's name length
- We go to the dataset of the year we calculated, get a list of name
- the total number of the name list is determined by the min length of parent's name
- So Top N of names will be extracted from the dataset, and calculate the score

#### Task T4X2 : Score calculation

- Since we randomly extract the english characters of parent's name.
- even if user enter name with lower case letter in first character, it automatically change
- We put the english character into hash map
- We extract the a list of name from the year of average of (MomYOB)(DadYOB)
- We compare the extracted English character from parent in hashmap and name list.
- once there are matched character between name list and hash, point ++;
- Finally, we use point / length of child name, calculate the score
- Once all of them are zero or the same, we will rank based on the popularity of the name

#### Task 4: T4X2 algorithm example

- we enter Paul and Cindy.
- 2019, 2018
- name list will be selected in (2019 +2018)/2 = 2018.5 = 2018

Choose algorithm		Please input dad's info	Please input mom's info
T4X1		Paul	Kelvin
T4X2		2019	2018
rogess	get result		

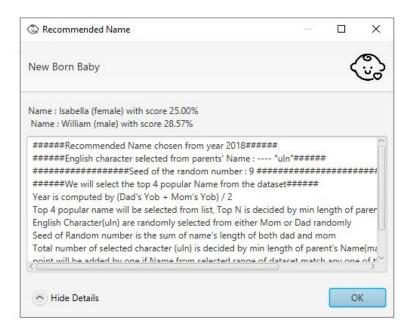
#### Task 4: T4X2 algorithm example

- We selected name Isabella (female)
- We selected name William (male)
- Sound effect displays
- icon shown
- Show Details options ~ [explain]



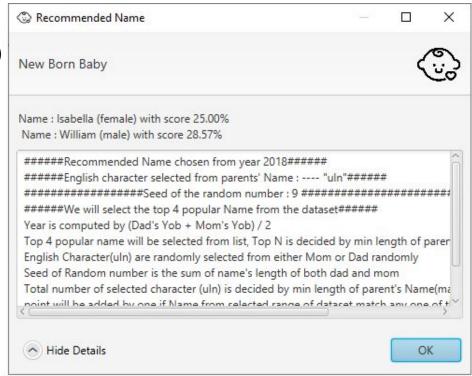
#### Task 4: T4X2 Show details

- expand the detains
- show the details of year and characters
- number of popular name shown
- Seed of Random number
- "uln" is extracted from parent's name
- 2018 is the year
- Top 4(min of parent's name Cindy =4)



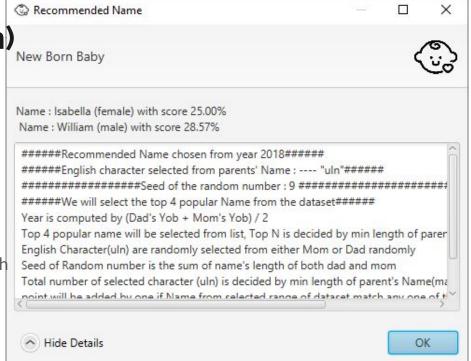
#### Task 4 T4x2 explain (Isabella)

- "u" from Paul
- "I" from Paul
- "n" from Cindy
- "isabella" length = 8
- matched character = 2 (I)
- score = 2/8 \* 100 = 25%



#### Task 4 T4x2 explain (William)

- "u" from Paul
- "I" from Paul
- "n" from Cindy
- "isabella" length = 7
- matched character = 2 (I)
- score = 2/7 \* 100 = 28.57%
- you can see same matching but shorter length
- get highter score

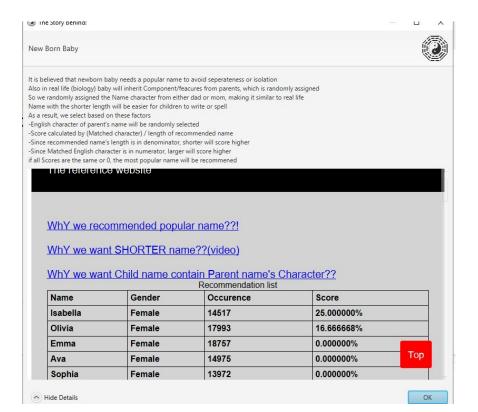


#### **Task 4 T4x2**

- After clicking OK before
- we show the second pop
- there is a "gossip array""八卦" icon
- Explaination will shown on this
- Click show details show a web page.



- there are hyper link
- tables show a list of recommended name
- right hand side corner [TOP] clickable
- once click it it will go to top of website.
- [TOP] will push you to the top of website



- name
- gender
- occurence
- score
- rank decending
- Top clickable

Name	Gender	Occurence	Score
Isabella	Female	14517	25.000000%
Olivia	Female	17993	16.666668%
Emma	Female	18757	0.000000%
Ava	Female	14975	0.000000%
Sophia	Female	13972	0.000000%
William	Male	14590	28.571430%
Oliver	Male	13461	16.666668%
Liam	Male	19915	0.000000%
Noah	Male	18350	0.000000%
James	Male	13589	0.00000%

Top

- Links are clickable
- you can go to this web
- embedded in the windows
- reference explanation

WhY we recommended popular name??!

WhY we want SHORTER name??(video)

WhY we want Child name contain Parent name's Character??

- Click the first hyper link
- Article embedded

as a result, we select based on these factors

English character of parent's name will be randomly selected

Score calculated by (Matched character) / length of recommended name

Since recommended name's length is in denominator, shorter will score higher

Since Matched English character is in numerator, larger will score higher

fall Scores are the same or 0, the most popular name will be recommened

HUFFPOST

AdChoices

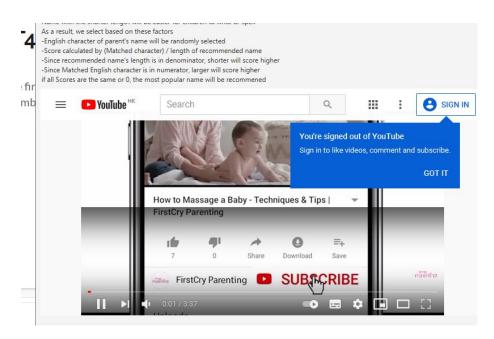
#### Bria John, The Huffington Post Canada

03/29/2016 11:30am EDT | Updated March 30, 2016

What do you do when you want to name your child Olivia but it's the second most popular name in Canada for girls? You name your child Aliviyah instead. Or try Leeam, Liaam, Liahm or Liamm instead of Liam, the number one boys name. Anything unique to set your child apart. But a study suggests this trend could have a negative effect on kids.

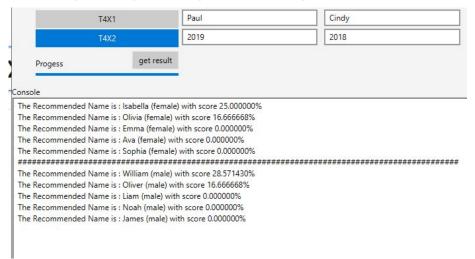
Generally, baby name trends follow big cultural happenings. The

- hyperlink to video
- show reason why we select shorter name

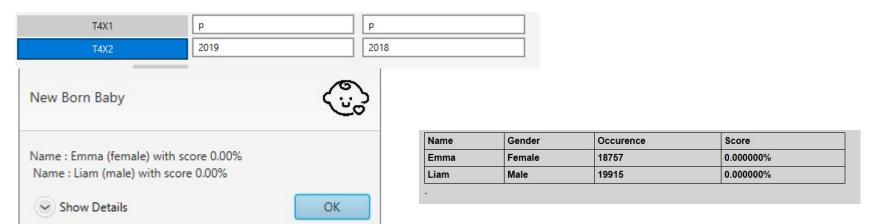




- ranked name will shown on console



- What if the score zero or the same as the other score ????
- We give recommendation according to the popularity
- Performs like T4X1, but year is different. (MomYOB + DadYOB) /2

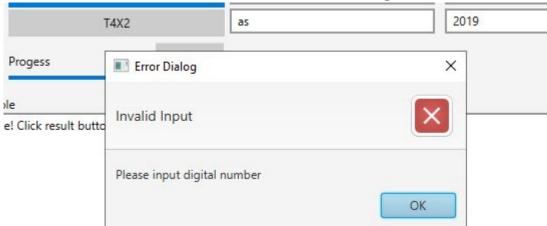


#### Task 4 T4X2 RULE EXPALIN

- it makes sense that if we input in random massive english character which is not name we will give score more likely to zero, and make recommendation according to year of born as information.
- Score = point / name length, so the recommended length shorter is an advantage
- point = matched hash map english character from parent's feature, match more higher
- Same score, will base on popularity to do ranking, make popular one an advantage
- Random selection of parent's name component using seed (mom name length +dad name length)
- always give the same result even it is random.
- Randomness is because baby features actually are quite random
- get name component because we want baby has inherit something from parent's name
- get average of the year is because we want gender equality, both parent has right decide name
- Shorter and popular, we want baby makes friend with other easily by easy name and not weird name

#### Task 4 invalid input

- we do not accept non numerical value in the year of born
- it shows error dialog with default sound effect with icon cross.
- Click ok to exit, means user has to read the message.



#### Task 4 name input

- no restriction length
- But it will take long time if you enter long name
- if you randomly input a long English string it is ok but it is recommended to enter name

#### Hubert Blaine Wolfeschlegelsteinhausenbergerdorff Sr.

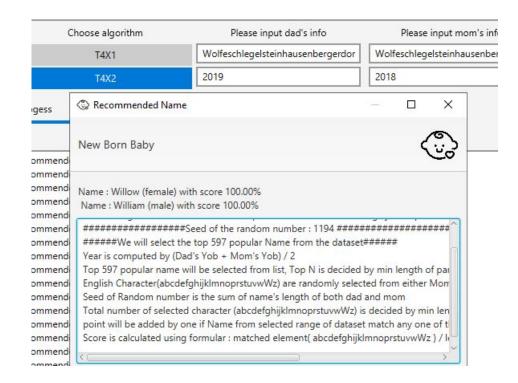
The longest personal name is 747 characters long, and belongs to Hubert Blaine Wolfeschlegelsteinhausenbergerdorff Sr. (b. 4 August 1914, Germany) who passed away on 24 October 1997, in Philidelphia, Pennsylvania USA, as verified on 1 January 2021. 2021≆1月1日

https://www.guinnessworldrecords.com > world-records

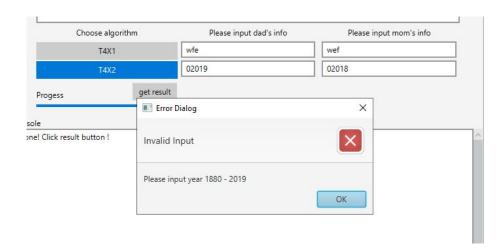


#### Task4 T4X2 limitation

- Longer name more likely to get 100%
- but we will exclude child name same as the parent name
- long name takse more time
- the example show 700 character

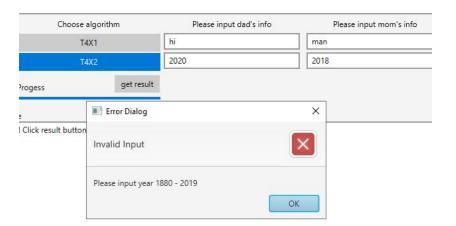


#### Task 4 invalid input zero digit



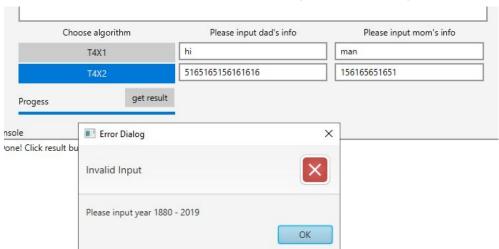
# Task 4 out of range

THE PROPERTY OF THE PARTY OF TH

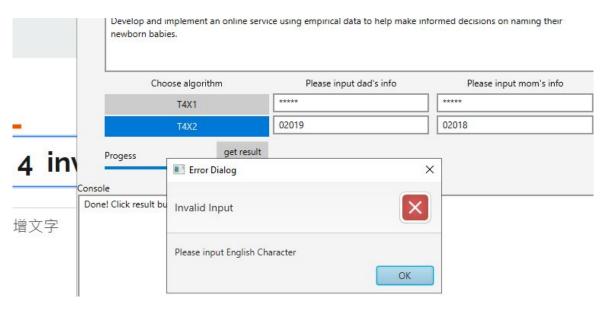


#### Task 4 overflow number prevention

- There are possible risk of error, if enter large number length



### Task 4 invalid input Non English character(Name)



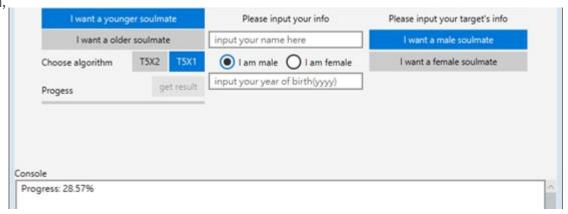
#### **Task 4 Conclusion**

- Parents always worry about naming of their child
- the system give the quality recommendation with clear explanation
- if you have any question feel free to email <a href="mailto:pwliuab@connect.ust.hk">pwliuab@connect.ust.hk</a>
- I will be happy to answer.

# TASK 5 showcase

#### Task 5

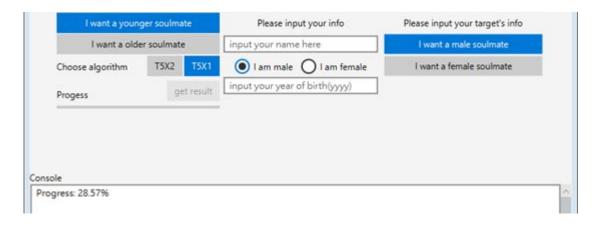
When user starts to fill in information, the console will show the progress of filled information.



#### Task 5

When the user not yet filled in all the

information, the "get result" button



will be locked. User hence cannot click the button until he/she filled in all the information and make the progress 100%.

# T5X1

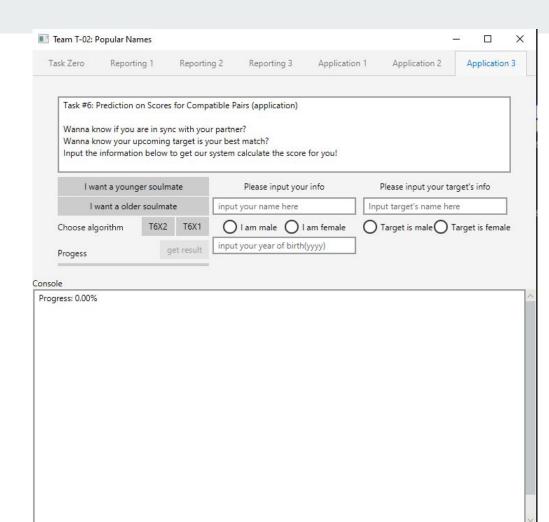
# TASK 6 showcase

# task6 safeguard Progress 0/7

The get result button will be locked if the input is empty

a progress bar and console output will hint the user what is the progress so far

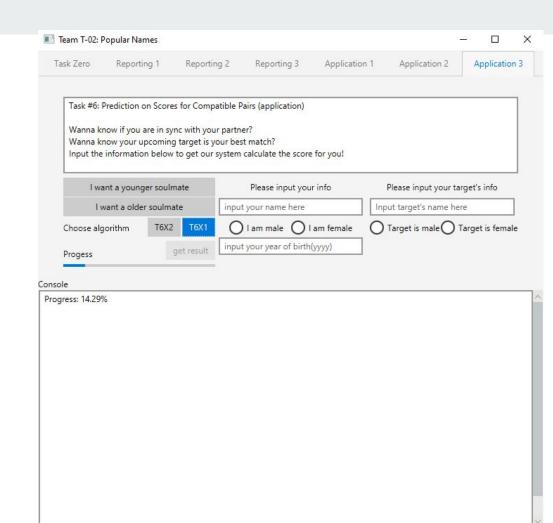
Input checking in not done in this stage



#### task6 safeguard Progress 1/7

The get result button will be locked if the input is empty

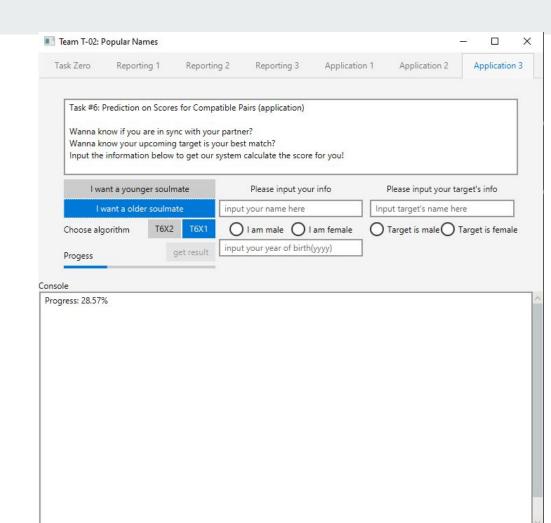
a progress bar and console output will hint the user what is the progress so far



## task6 safeguard Progress 2/7

The get result button will be locked if the input is empty

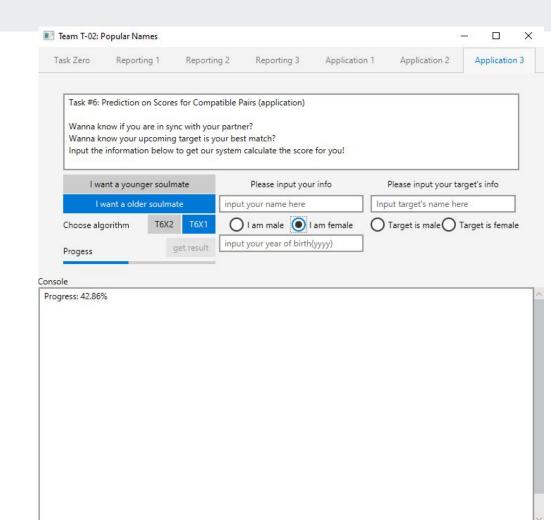
a progress bar and console output will hint the user what is the progress so far



#### task6 safeguard Progress 3/7

The get result button will be locked if the input is empty

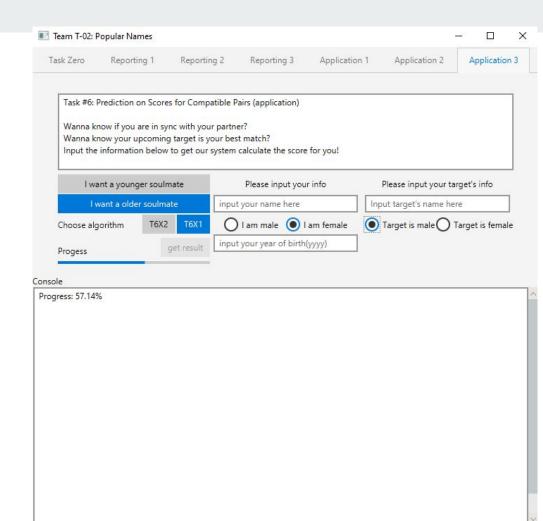
a progress bar and console output will hint the user what is the progress so far



#### task6 safeguard Progress 4/7

The get result button will be locked if the input is empty

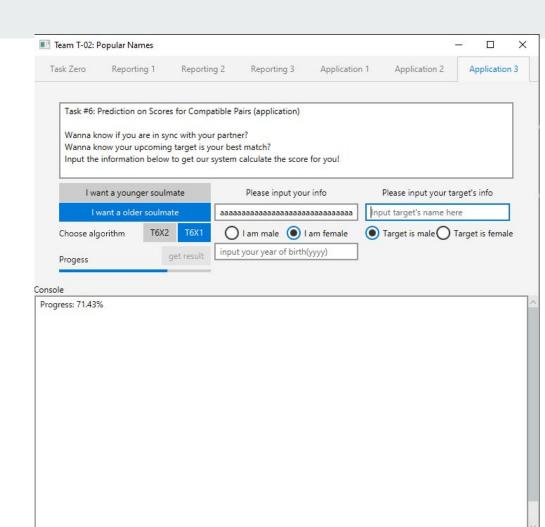
a progress bar and console output will hint the user what is the progress so far



#### task6 safeguard Progress 5/7

The get result button will be locked if the input is empty

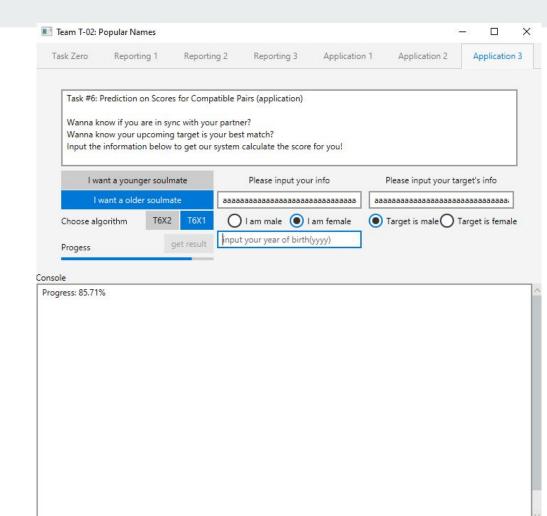
a progress bar and console output will hint the user what is the progress so far



### task6 safeguard Progress 6/7

The get result button will be locked if the input is empty

a progress bar and console output will hint the user what is the progress so far

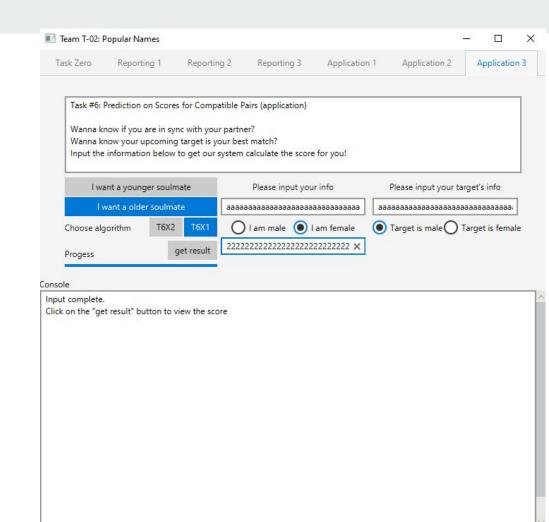


#### task6 safeguard Progress 7/7

Once all the data has been filled

The get result button will be unlocked

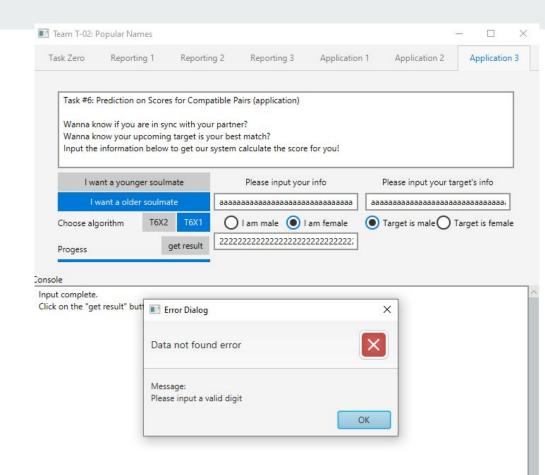
and the user can progress



# task6 input validation

after the user clicked on the get result button

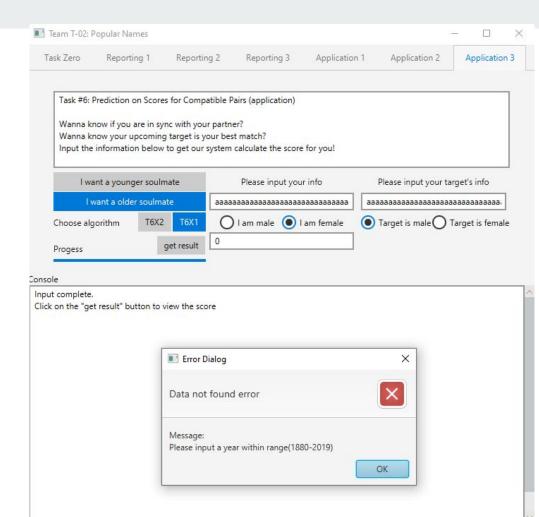
a alert will appear and signal the user to input valid digit



# task6 input validation

after the user clicked on the get result button

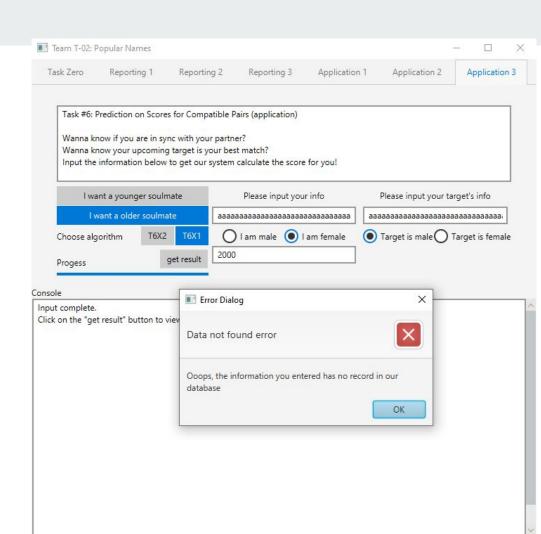
a alert will appear and signal the user to input year within range



# task6 input validation

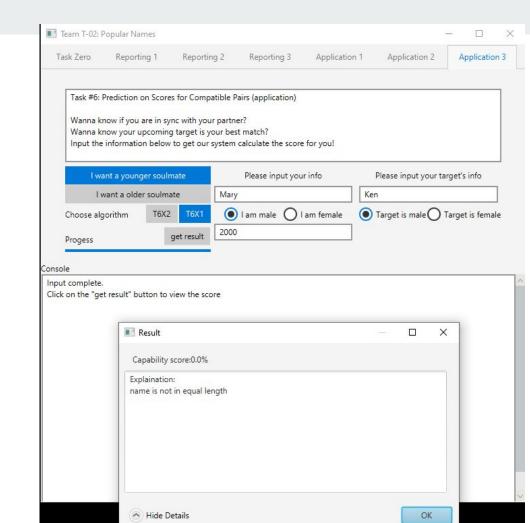
if any of the name does not exist in the record or is not valid

a alert will appear and signal the user to change the name



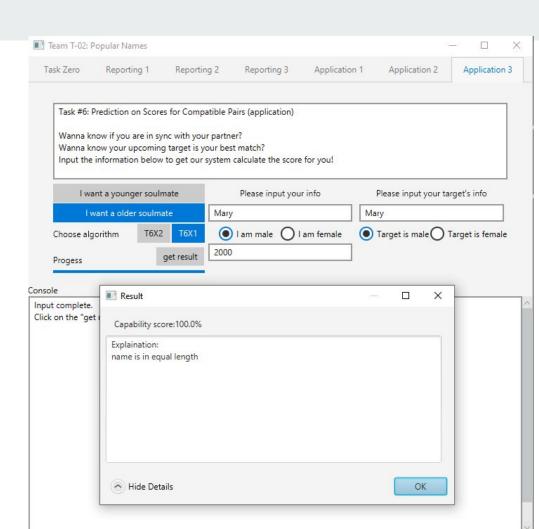
If the selected algorithm is T6X1

the result will show 100% if the name is in equal length; 0% otherwise



If the selected algorithm is T6X1

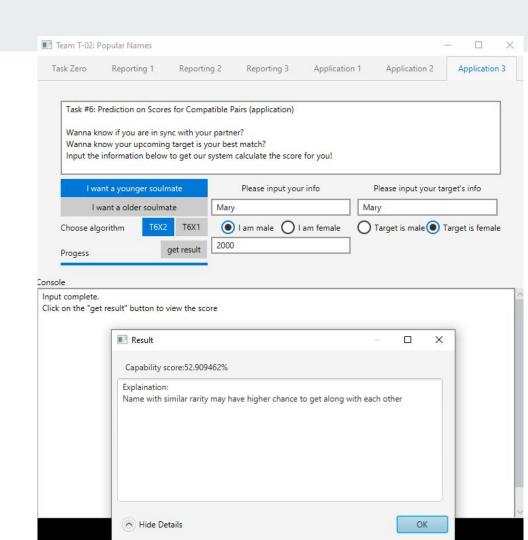
the result will show 100% if the name is in equal length; 0% otherwise



If the selected algorithm is T6X2

the score will be deducted if:

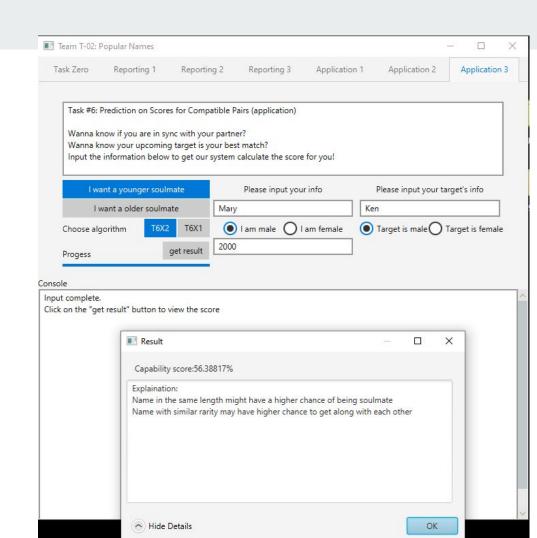
- -length is not the same
- -rarity is not the same



If the selected algorithm is T6X2

the score will be deducted if:

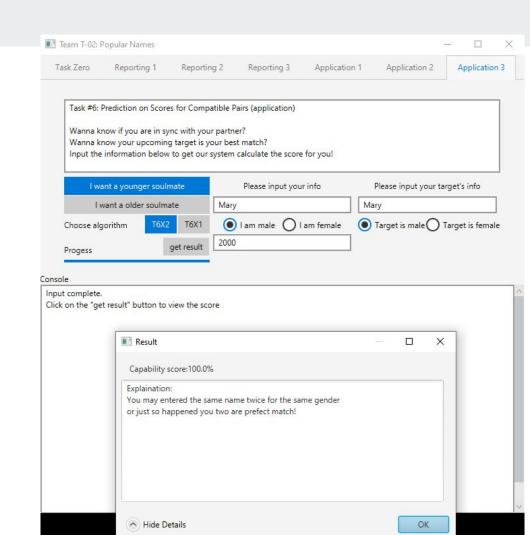
- -length is not the same
- -rarity is not the same



If the selected algorithm is T6X2

the score will be deducted if:

- -length is not the same
- -rarity is not the same



# COVERAGE REPORT <a href="https://drive.google.com/file/d">https://drive.google.com/file/d</a> /1kYpc9Dtc521Z4q6wDcXunqwL NOCx1VJe/view?usp=sharing

PopNames3111

#### PopNames3111

Element \$	Missed Instructions	Cov. \$	Missed Branches		Missed \$	Cxty =	Missed	Lines	Missed +	Methods	Missed *	Classes
comp3111.popnames		95%		88%	57	286	66	1,232	8	65	1	7
Total	242 of 5,466	95%	49 of 436	88%	57	286	66	1,232	8	65	1	7

#### comp3111.popnames

Element	Missed Instructions	Cov. \$	Missed Branches		Missed	Cxty	Missed	Lines +	Missed	Methods =	Missed	Classes
<b>⊙</b> Controller		92%		82%	76	261	131	1,275	2	39	0	1
<b>⊕</b> MyApplication		0%		n/a	3	3	13	13	3	3	1	1
		98%		93%	8	85	6	218	0	18	0	1
<b>⊙</b> Controller.Person		68%		n/a	3	7	6	14	3	7	0	1
		100%		n/a	0	5	0	10	0	5	0	1
G Controller.task2_table_data		100%		n/a	0	5	0	10	0	5	0	1
G Controller.new Comparator() {}		100%	1	100%	0	4	0	6	0	2	0	1
G Controller.new Comparator() {}		100%	1.	100%	0	4	0	6	0	2	0	1
Total	504 of 6,864	92%	84 of 580	85%	90	374	156	1,550	8	81	1	8

#### **TESTCASE SUMMARY**

https://drive.google.com/file/d/lkYpc9Dtc521Z4q6wDcXunqwLNOCx1VJe/view?usp=sharing

#### **Test Summary**

123 0 0 4m8.01s
tests failures ignored duration

Classes

100% successful

Packages

PackageTestsFailuresIgnoredDurationcomp3111.popnames123004m8.01s

### **JAVADOC**

\*private method not shown on javadoc will placed here <a href="https://drive.google.com/file/d/1RfELlo6yIbdagN-UIvoVTC">https://drive.google.com/file/d/1RfELlo6yIbdagN-UIvoVTC</a>
<a href="G4ai1VJZNX/view?usp-sharing">G4ai1VJZNX/view?usp-sharing</a>

```
312⊕
         private Button Task1PieButton;// for task 1
         private Button Task1TableButton; // for task 1
 314⊕
         private Button Task1Summarybutton; // for task 1
 316⊕
         private Button Task1BarButton; // for task 1
 318⊕
 319
         // generate Summary
 320
 3219
 322
          * This function generate a bar chart showing the most n popular name in a new
          * scene it will return alert if input is invalid
 323
 324
          * @throws IOException
 325
 326
         void Generate BarChart() throws IOException {
 329⊕
 450
         /**
 451⊖
 452
          * This function generate a Pie chart showing the most n popular name in a new
          * scene it will return alert if input is invalid
 453
 454
 456⊕
         void Generate PieChart() {
 578
 579
 580⊖
          * This function generate a Table showing the most n popular name in a new scene
 581
 582
          * it will return alert if input is invalid
 583
585⊕
         void Generate Table() {
 759
 7609
          * This function generate a summary showing the most n popular name on the
 761
          * console it will return alert if input is invalid
 762
 763
         void Generate Summary() {
 765⊕
 839
          * the inner class for table to use in task1
 841⊕
 846⊕
         public static class Person {
```

912

```
936⊖
         /**
          * This function is to safeguard the input for task3 all the button in task 3 is
 937
          * lock until the data is input fits the format there will be text showing on
 938
 939
          * the console showing user what has gone wrong / (e.g. end-year is smaller than
 940
          * start-year)
 941
          */
         void tsk3in() {
 943⊕
1034
1035⊖
          * This function will generate a bar chart showing the popularity of a name over
1036
1037
          * a period the result will be shown in a popup alert it will return alert if
          * input name is not found
1038
1039
          */
1041⊕
         void tsk3brcht() {// generate and popup barchart[]
1095
10969
         /**
1097
          * This function will generate a line chart showing the popularity of a name
          * over a period the result will be shown in a popup alert it will return alert
1098
1099
          * if input is invalid
1100
          */
         void tsk3lncht() {
1102⊕
1156
11579
          * This function will generate a summary showing the popularity of a name over a
1158
          * period the result will be shown in a popup alert it will return alert if
1159
1160
          * input name is not found
1161
1163⊕
          void tsk3summary() {
1207
1209⊕
          * this is a inner class to store the info for table to use.
1214⊕
         public static class tsk3entry {
1272
1273⊖
1274
          * This function will generate a table showing the popularity of a name over a
          * period the result will be shown in a popup alert it will return alert if
1275
1276
          * input name is not found
          */
1277
1280⊕
         void tsk3table() {
1347
```

935

```
1374
1375
          private boolean Play = true;
1376
1377⊖
          /**
1378
           * this function will generate the names for babies error alert will be raised
1379
           * if the input is invalid
1380
1381
           * if algorithm is T4X1 the name prediction will be shown on a information alarm
1382
1383
           * if algorithm is T4X2 the name with the highest match rate will be shown on an
1384
           * information alert an extra alert will popup showing the story behind with a
1385
           * table and hyperlink and a webpage will be adhere to the story showing the
1386
           * reference with a table / showing the rest of the prediction
1387
           */
41389⊕
          void task four getresult() {
1797
          /**
1798⊖
1799
           * This is the safeguard function for task 4 every action in the input for task4
1800
           * will call this function the button to get result will be lock until the input
1801
1802
           * field is filled it will only check if the input has filled so even if the
           * data is invalid the button will unlock
1803
1804
           * there is also a progress bar to indicate user the completeness the progress
1805
           * status in text will also be shown on the console area allowing the user to
1806
1807
           * know what input is missing
1808
1810⊕
          void tsk4check() {
1888
```

```
1918
1919
1920⊖
         /**
1921
           * This is the function used to generate names for compatible pairs Some input
1922
           * checking shall be done here
1923
           */
1924
1926⊕
         void task_five_getresult() {
1929
1930
1931⊖
         /**
1932
1933
           * This is the safeguard function for task 5 every action in the input will call
1934
           * this function
1935
1937⊕
         void tsk5check() {
1940
         //
1941
```

```
1707
1987⊕
         private ToggleButton T6X1;
1988
1990⊕
         private ToggleButton T6X2;
1991
1992⊖
         /**
1993
          * This function will calculate and show the score of capability of pairs it
          * will start off by doing a input validation and the function will return if
1994
1995
          * input is invalid and an alert will prompt the user the input has error
1996
1997
          * If the data is valid, the score will be calculated and show on an
          * alert(type:information) If the algorithm is T6X2, the explanation will adhere
1998
          * to the bottom to the alert
1999
2000
2001
2003⊕
         void task six getresult() {
2127
         /**
2128⊖
          * This is the safeguard function for task 6 every action in the input for task6
2129
2130
          * will call this function the button to get result will be lock until the input
2131
          * field is filled it will only check if the input has filled so even if the
          * data is invalid the button will unlock
2132
2133
2134
          * there is also a progress bar to indicate user the completeness the progress
2135
          * status will also be shown on the console area
2136
2138⊕
         void tsk6check() {
2187
2188 }
2190
```

## **EXTRA:COMMIT LOG**

#### **Commit log**

Commits on Apr 30, 2021 Merge pull request #24 from kalung2002/paul\_feature1 .... Verified pwliuab committed 2 days ago add bagua picture and make story for the algorithm pwliuab committed 2 days ago Merge pull request #23 from kalung2002/paul\_feature1 .... Verified pwliuab committed 2 days ago Task1test,adding sleep(100) prevent error pwliuab committed 2 days ago add the algorithm 2~T4x2 pwliuab committed 2 days ago

#### **Commit Log**

Commits on May 2, 2021 Update README.md ... 89ed9d9 Verified pwliuab committed 6 hours ago Merge pull request #30 from kalung2002/klluiaf\_feature\_dev ... Verified 2e6e9fa kalung2002 committed 17 hours ago fix typo <> kalung2002 committed 17 hours ago write all javadocs for existed method even if it is private kalung2002 committed 17 hours ago fixed some textboxes <> kalung2002 committed 17 hours ago Merge pull request #29 from kalung2002/klluiaf\_feature\_dev .... Verified de4f277 kalung2002 committed 21 hours ago write javadoc for analyzernames 2f99baa

kalung2002 committed 21 hours ago

master -