COMP3111 T-22 Activity 2 – Source Code

To view all the raw files:

https://github.com/Zhang-JK/COMP3111-T22/tree/master/doc

Table of Contents

People:

ZHANG Jiekai (jzhanger@connect.ust.hk), Assigned Task: #1 #4

CHENG Yiren (yrcheng.dylan@gmail.com), Assigned Task: #3 #6

LIANG Houdong (hliangam@connect.ust.hk), Assigned Task: #2 #5

GitHub Repo:

https://github.com/Zhang-JK/COMP3111-T22
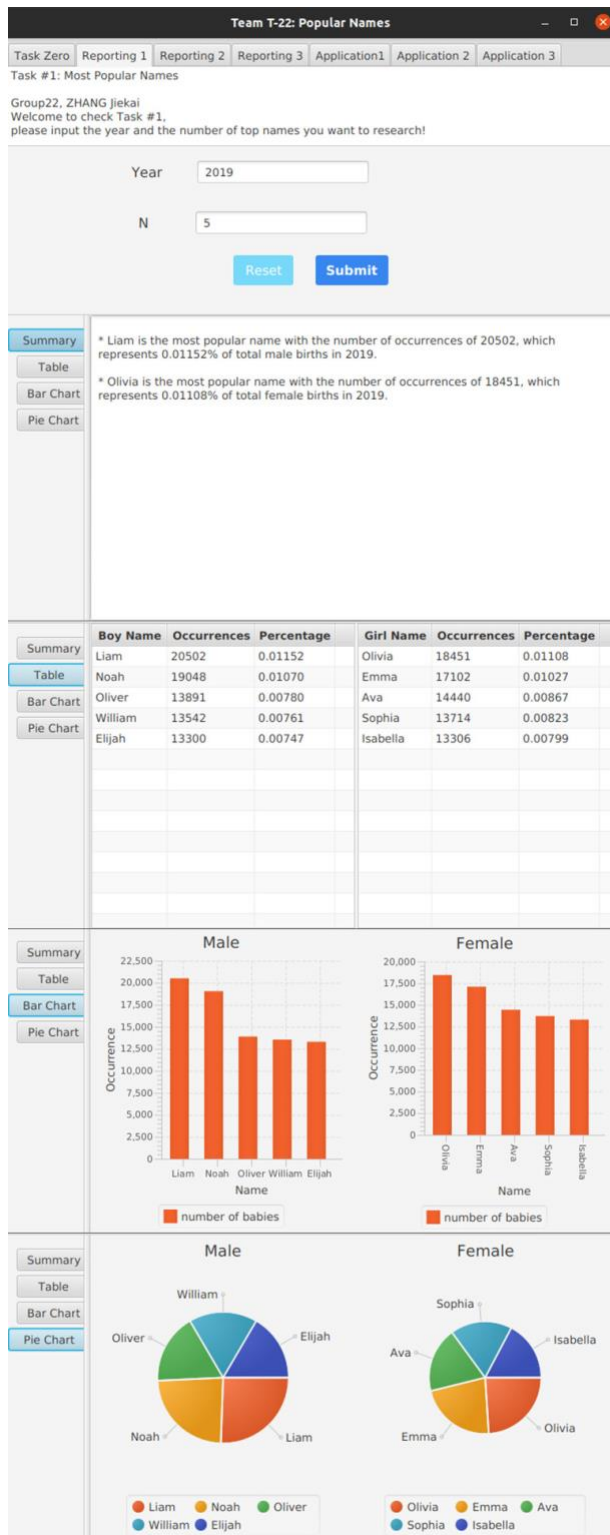
ZHANG Jiekai's branch: JK_dev
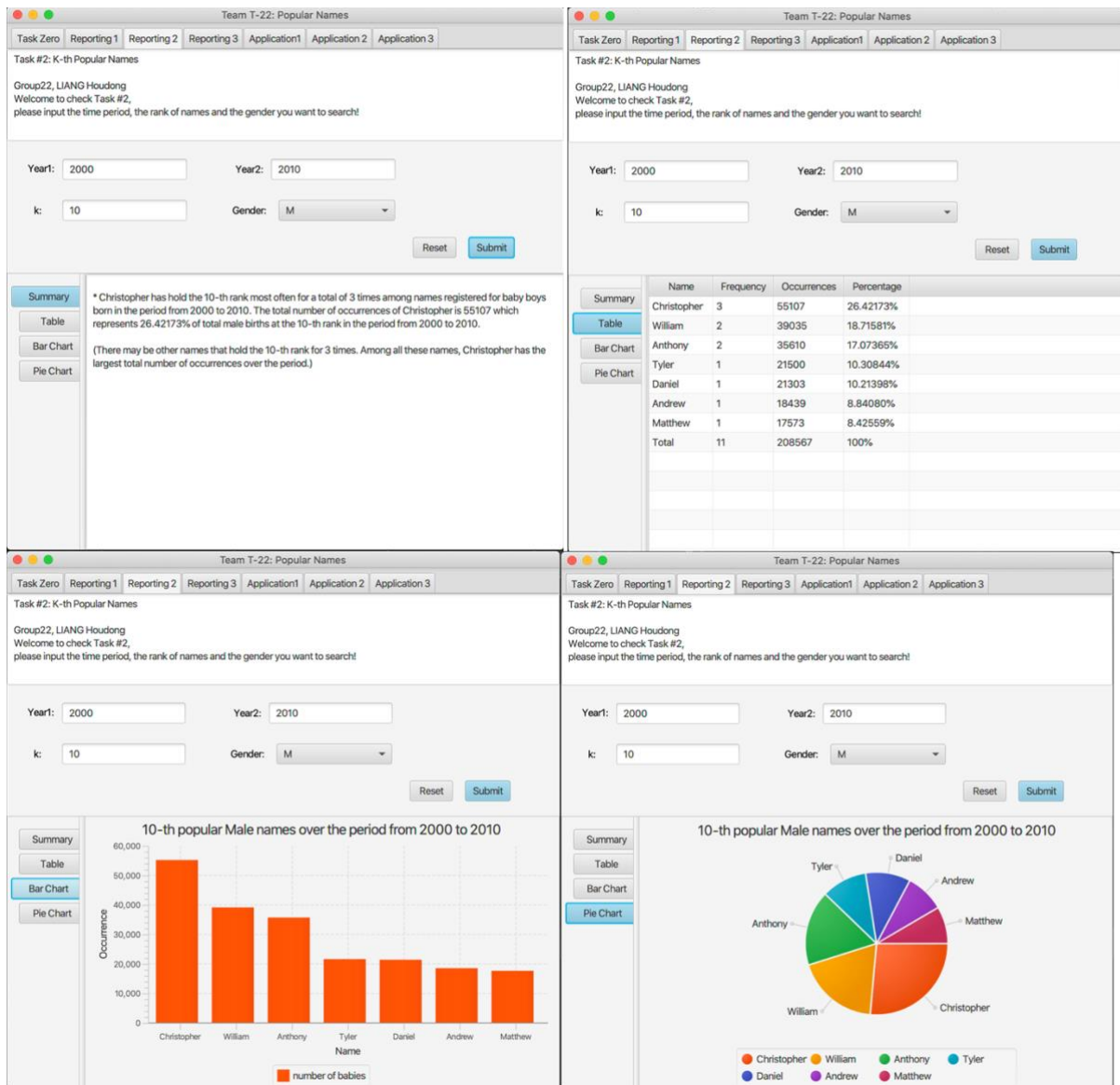
CHENG Yiren's branch: dylan_branch

LIANG Houdong's branch: dong_

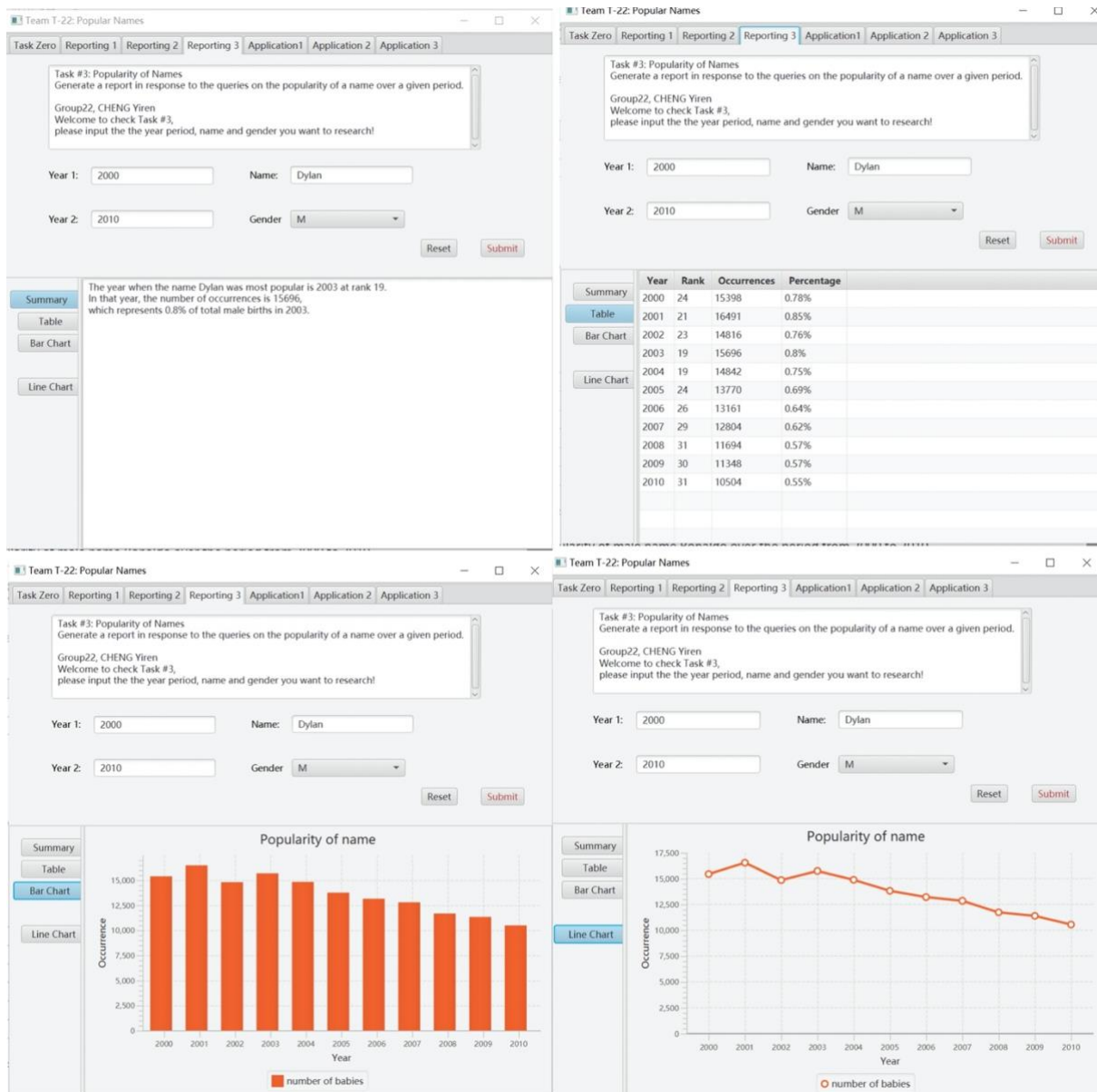# Screenshots of the execution of the application showing sample inputs and outputs (Data-Reporting Task)

Task1:

Task2

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #2: K-th Popular Names

Group22, LIANG Houdong
Welcome to check Task #2,
please input the time period, the rank of names and the gender you want to search!

Year1: 2000   Year2: 2010

k: 10   Gender: M

Reset   Submit

Summary | Table | Bar Chart | Pie Chart

* Christopher has hold the 10-th rank most often for a total of 3 times among names registered for baby boys born in the period from 2000 to 2010. The total number of occurrences of Christopher is 55107 which represents 26.42173% of total male births at the 10-th rank in the period from 2000 to 2010.

(There may be other names that hold the 10-th rank for 3 times. Among all these names, Christopher has the largest total number of occurrences over the period.)

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #2: K-th Popular Names

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please input the time period, the rank of names and the gender you want to search!

Year1: 2000   Year2: 2010

k: 10   Gender: M

Reset   Submit

Summary | Table | Bar Chart | Pie Chart

Name	Frequency	Occurrences	Percentage
Christopher	3	55107	26.42173%
William	2	39035	18.71581%
Anthony	2	35610	17.07365%
Tyler	1	21500	10.30844%
Daniel	1	21303	10.21398%
Andrew	1	18439	8.84080%
Matthew	1	17573	8.42559%
Total	11	208567	100%

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #2: K-th Popular Names

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please input the time period, the rank of names and the gender you want to search!

Year1: 2000   Year2: 2010

k: 10   Gender: M

Reset   Submit

Summary | Table | Bar Chart | Pie Chart

10-th popular Male names over the period from 2000 to 2010

number of babies

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #2: K-th Popular Names

Group22, LIANG Houdong
Welcome to check Task #2,
please input the time period, the rank of names and the gender you want to search!

Year1: 2000   Year2: 2010

k: 10   Gender: M

Reset   Submit

Summary | Table | Bar Chart | Pie Chart

10-th popular Male names over the period from 2000 to 2010

● Christopher ● William ● Anthony ● Tyler
● Daniel ● Andrew ● Matthew

Task3

Screenshots of the execution of the application showing sample inputs and outputs (Evidence-Based Recommendation Task)

Task4
Algorithm T4X1

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #4: Recommendation on Names for Newborn Babies

Group22, ZHANG Jiekai
Welcome to check Task #4,
please input the following infomation and we will recommand a name for both boy and girl based on that.

| Dad's name | test | Dad's birth year | 2019 |
| Mom's name | test | Mom's birth year | 1984 |

Algorithm: T4X1

Reset | Submit

Summary

* The Recommend Name for Boy is Liam.

* The Recommend Name for Girl is Jennifer.

How it works?
We used our data base to find a popular name at the year of parents' birth.
- Boy's name is from the most popular boy name at dad's year of birth.
- Girl's name is from the most popular girl name at mom's year of birth.
 (You can also view other recommended names and their relationship on Chart pages)

Hope you enjoy it and why not try once more with another algorithm ;)

Table

Boy Name	Occurrences	Percentage		Girl Name	Occurrences	Percentage
Liam	20502	0.01152		Jennifer	50559	0.03004
Noah	19048	0.01070		Jessica	45849	0.02724
Oliver	13891	0.00780		Ashley	38758	0.02303
William	13542	0.00761		Amanda	33905	0.02015
Elijah	13300	0.00747		Sarah	25874	0.01537
James	13087	0.00735		Stephanie	23018	0.01368
Benjamin	12942	0.00727		Nicole	22264	0.01323
Lucas	12412	0.00697		Melissa	21886	0.01300

Bar Chart

Pie Chart

Algorithm T4X2

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #4: Recommendation on Names for Newborn Babies

Group22, ZHANG Jiekai
Welcome to check Task #4,
please input the following infomation and we will recommand a name for both boy and girl based on that.

Dad's name [sam]   Dad's birth year [2019]

Mom's name [girl]   Mom's birth year [1984]

Algorithm [T4X2 ▼]   Type of name [Popular ▼]   Reset   **Submit**

Summary | Table | Bar Chart | Pie Chart

* The Recommend Name for Boy is Sterling.

* The Recommend Name for Girl is Gladys.

How it works?
We find a name that begin and end with the first letter of parents' name.
For popular, we will select the top names.
And for unique we will select a not common name.
- Boy's name is selected from dad's birth year.
   It begins with dad name's first letter and ends with mom name's first letter.
- Girl's name is selected from mom's birth year.
   It begins with mom name's first letter and ends with dad name's first letter.
- If the name do not exists
   We will only select the name begin with the first letter in parents' name.
   (You can also view other recommended names and their relationship on Chart pages)
   (They will tell you how popular or unique the name is.)

Hope you enjoy it and why not try once more with another algorithm ;)

Boy Name	Occurrences	Percentage		Girl Name	Occurrences	Percentage
Sterling	746	0.00042		Gladys	227	0.00013
Stirling	17	0.00001		Genesis	61	0.00004
Sang	7	0.00000		Gladis	23	0.00001
Suyog	7	0.00000		Glynnis	10	0.00001
Starling	5	0.00000		Glennis	9	0.00001
				Glenys	5	0.00000

Boy's names — Girl's names (Bar Chart)
Occurrence / Name — 2019 — 1984

Boy's names — Girl's names (Pie Chart)
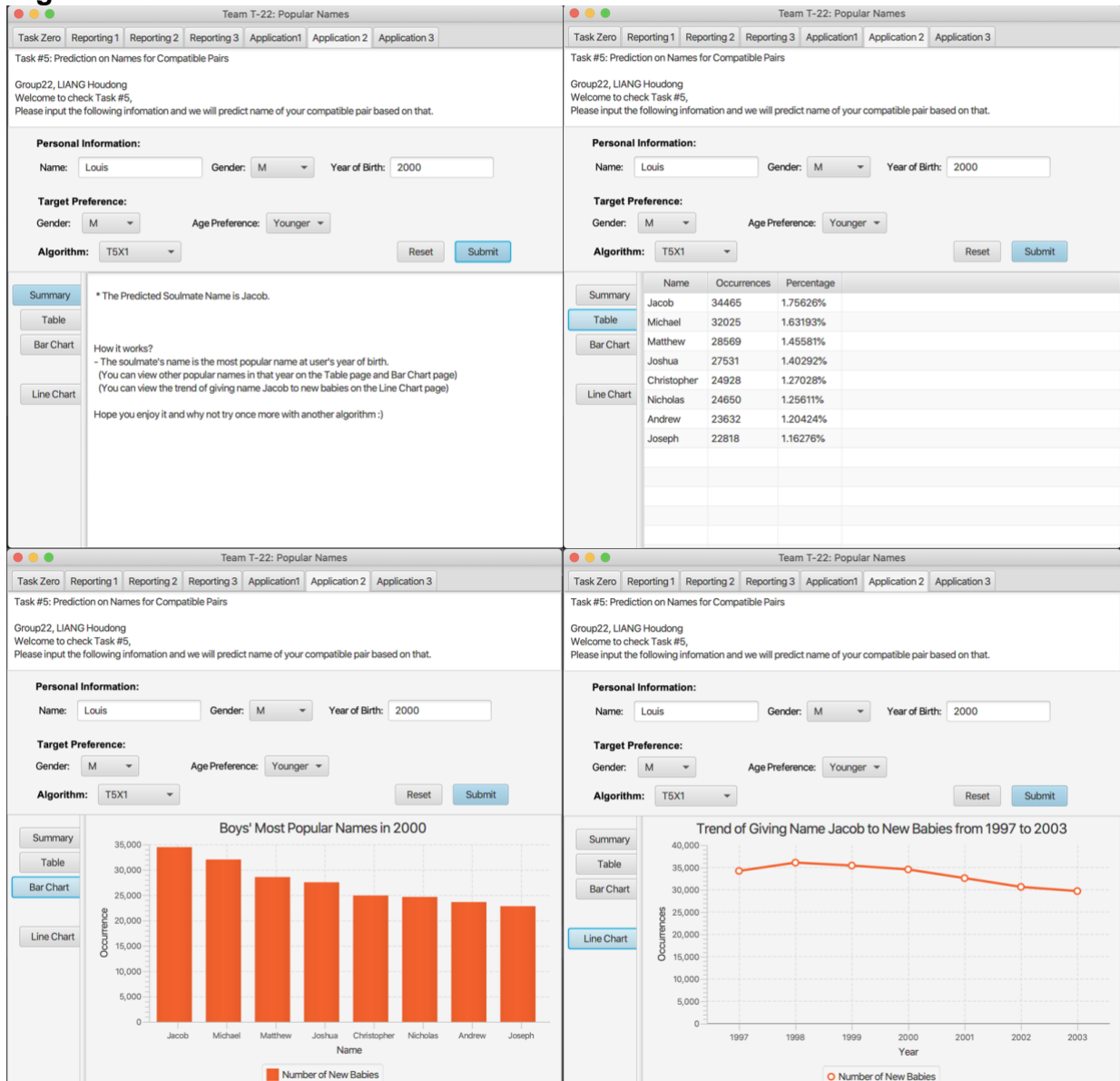Sterling, Stirling / Gladys, Genesis, Gladis, Glynnis, Glenys

Sterling ● Stirling ● Sang ● Suyog ● Starling
Gladys ● Genesis ● Gladis ● Glynnis ● Glennis ● Glenys

Task5
Algorithm T5X1

Window 1 (top-left)

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Younger

Algorithm: T5X1   Reset   Submit

Summary
Table
Bar Chart
Line Chart

* The Predicted Soulmate Name is Jacob.

How it works?
- The soulmate's name is the most popular name at user's year of birth.
   (You can view other popular names in that year on the Table page and Bar Chart page)
   (You can view the trend of giving name Jacob to new babies on the Line Chart page)

Hope you enjoy it and why not try once more with another algorithm :)

Window 2 (top-right)

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
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Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Younger

Algorithm: T5X1   Reset   Submit

Summary
Table
Bar Chart
Line Chart

Name	Occurrences	Percentage
Jacob	34465	1.75626%
Michael	32025	1.63193%
Matthew	28569	1.45581%
Joshua	27531	1.40292%
Christopher	24928	1.27028%
Nicholas	24650	1.25611%
Andrew	23632	1.20424%
Joseph	22818	1.16276%

Window 3 (bottom-left)

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Younger

Algorithm: T5X1   Reset   Submit

Summary
Table
Bar Chart
Line Chart

Boys' Most Popular Names in 2000

Number of New Babies

Window 4 (bottom-right)

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Younger

Algorithm: T5X1   Reset   Submit

Summary
Table
Bar Chart
Line Chart

Trend of Giving Name Jacob to New Babies from 1997 to 2003

Number of New Babies

Algorithm T5X2

Window 1 (Summary):

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Older

Algorithm: T5X2   *The algorithm takes about 30s, please wait patiently*   Reset   Submit

Summary | Table | Bar Chart

* The Predicted Soulmate Name is Jimmy.
The Compatible score of Jimmy is 85.75000(out of 100).

How it works?
- We calculate compatible score between user's name and other names. The predicted soulmate name is the name that gets the highest compatible score.

-- How is the compatible score computed?
Compatible score = (length score) * (average popularity score during period P)

Length score: if two names have a smaller length difference, then the length score is higher
    length score = 1   if length difference = 0
    length score = 0.7 if length difference = 1
    length score = 0.5 if length difference = 2
    length score = 0.2 if length difference = 3
    length score = 0.0 if length difference > 3

Popularity score: if two names have a smaller rank difference, which means they are similarly popular, then

Window 2 (Table):

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Older

Algorithm: T5X2   *The algorithm takes about 30s, please wait patiently*   Reset   Submit

Summary | Table | Bar Chart

Name	Compatible Score	Length Score	Average Popularity Score
Jimmy	85.75000	1.0	85.75000
Albert	57.98864	0.7	82.84091
Larry	57.04545	1.0	57.04545
Ricky	55.75000	1.0	55.75000
Colby	50.38636	1.0	50.38636
Danny	49.79545	1.0	49.79545
Julio	48.11364	1.0	48.11364
Randy	43.75000	1.0	43.75000
Jaime	41.09091	1.0	41.09091
Marc	39.05682	0.7	55.79545

Window 3 (Bar Chart):

Team T-22: Popular Names

Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3

Task #5: Prediction on Names for Compatible Pairs

Group22, LIANG Houdong
Welcome to check Task #5,
Please input the following infomation and we will predict name of your compatible pair based on that.

Personal Information:

Name: Louis   Gender: M   Year of Birth: 2000

Target Preference:

Gender: M   Age Preference: Older

Algorithm: T5X2   *The algorithm takes about 30s, please wait patiently*   Reset   Submit

Summary | Table | Bar Chart

Compatible Scores for Different Names
(Bar chart: Compatible Score vs Name — Jimmy, Albert, Larry, Ricky, Colby, Danny, Julio, Randy, Jaime, Marc)
Legend: Score

Task6
Algorithm T6X1 and T6X2

Team 1-22: Popular Names — □ X

| Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3 |

Task #6: Prediction on Scores for Compatible Pairs
Develop and implement an online service using empirical data to help make informed decisions on predicting scores for compatible pairs.

Personal Information

Name: Dylan   Year of birth: 1999   Gender: M ▼

Target Information

Name: Sarah   Gender: F ▼   Age Preference: Younger ▼

Algorithm T6X1 ▼

Reset   Submit

Summary

You two's compatible pair score is 100%.

How it works?
We make prediction based on the name length.
- If you tow's name length are the same, you get full score.
- Otherwise it's zero.

Hope you enjoy this game!

Team 1-22: Popular Names — □ X

| Task Zero | Reporting 1 | Reporting 2 | Reporting 3 | Application1 | Application 2 | Application 3 |

Task #6: Prediction on Scores for Compatible Pairs
Develop and implement an online service using empirical data to help make informed decisions on predicting scores for compatible pairs.

Personal Information

Name: Dylan   Year of birth: 1999   Gender: M ▼

Target Information

Name: Sarah   Gender: F ▼   Age Preference: Younger ▼

Algorithm T6X2 ▼

Reset   Submit

Summary

The compatible score is 100%

How it works?
- If the target name is the top 100 popular name in at least one year of the year which
is earlier or later than the user's year of birth (based on user's age preference),you get full score.
- Otherwise you get zero.

Hope you enjoy this game!

Report on the unit testing for the implemented tasks

Package comp3111.popnames

all > comp3111.popnames

| 36 | 0 | 0 | 2m18.02s | | 100% |
| tests | failures | ignored | duration | | successful |

Classes

Class	Tests	Failures	Ignored	Duration	Success rate
AnalyzeNamesTest	5	0	0	0.067s	100%
FileReaderTest	16	0	0	0.238s	100%
JavaFXTest	2	0	0	1.303s	100%
Task1andTask4Test	5	0	0	18.696s	100%
Task2andTask5Test	4	0	0	1m43.90s	100%
Task3AndTask6Test	4	0	0	13.819s	100%

HTML File: https://github.com/Zhang-JK/COMP3111-T22/tree/master/doc/reports/tests/test

Report on the coverage test

PopNames3111

Sessions

PopNames3111

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
comp3111.popnames		77%		60%	174	330	275	1,160	22	117	1	9
comp3111.popnames.core		93%		88%	15	108	15	236	3	45	0	6
Total	1,348 of 6,928	80%	184 of 552	66%	189	438	290	1,396	25	162	1	15

Created with JaCoCo 0.8.6.202009150832

Note: The total branch coverage is 66%.
(comp3111.popname.core package is our own defined inner package)

HTML File: https://github.com/Zhang-JK/COMP3111-T22/tree/master/doc/jacocoHTML

Documentation on the implemented tasks using JavaDoc

HTML File: https://github.com/Zhang-JK/COMP3111-T22/tree/master/doc/javadoc