NANYANG TECHNOLOGICAL UNIVERSITY

MA1008: Intro to Computational Thinking

Ladder.py

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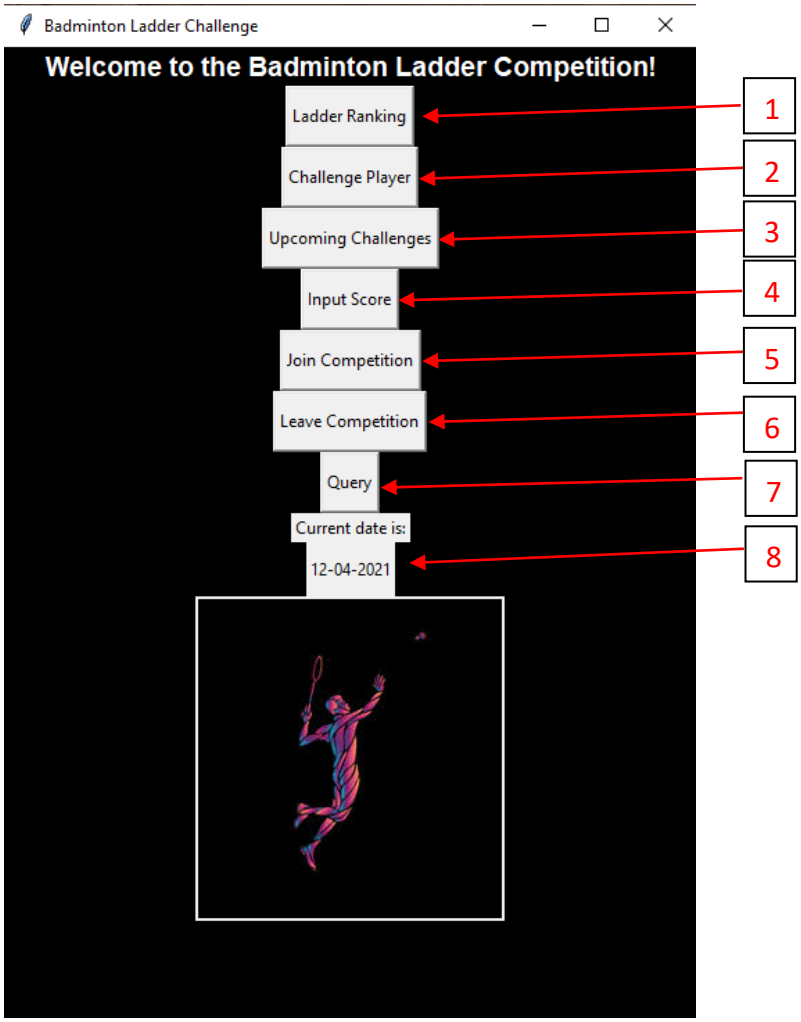
School of Mechanical and Aerospace Engineering

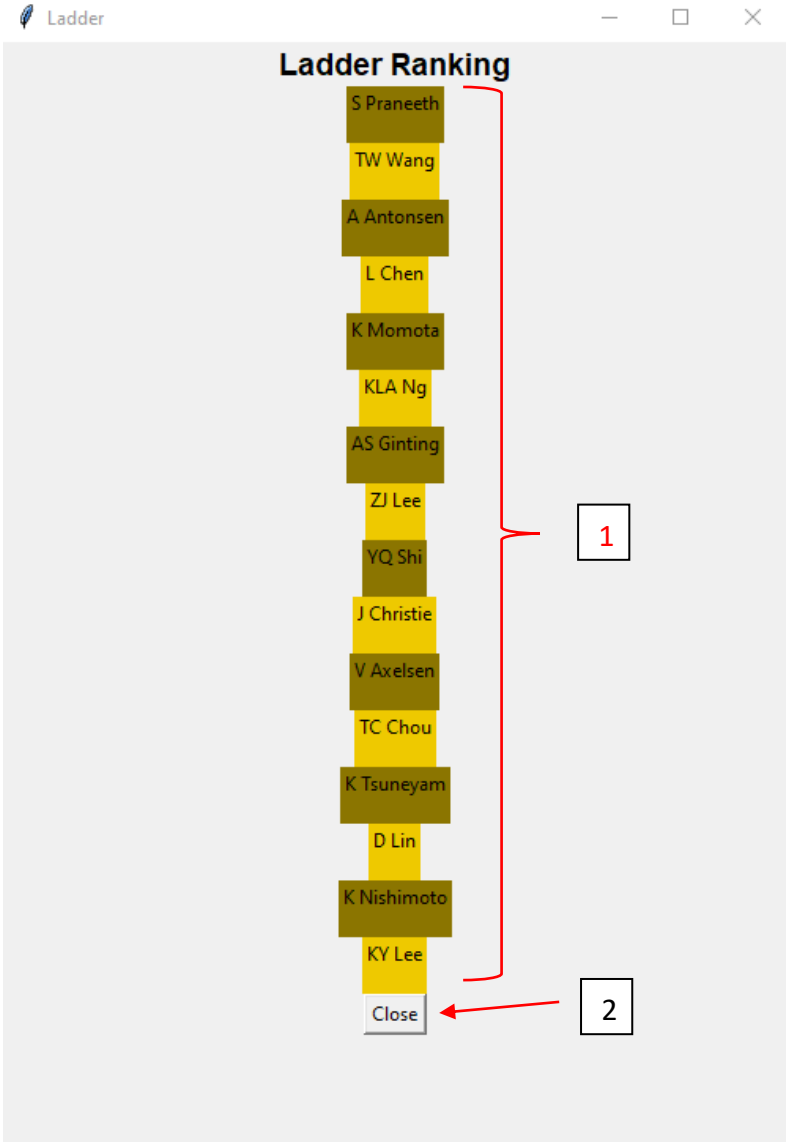
1. Python Programme Guide

1.1 Main Window



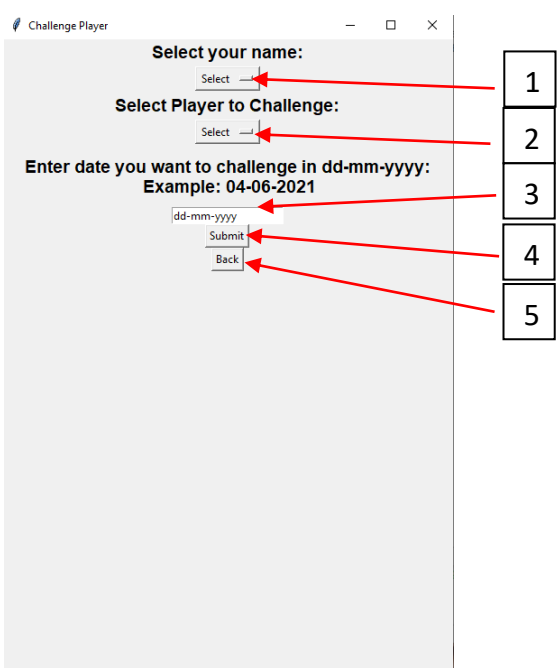
Label	Function
1	Click on the 'Ladder Ranking' button to view the updated ladder ranking at any point in time.
2	Click on the 'Challenge Player' button to challenge a player.
3	Click on the 'Upcoming Challenges' button to view the upcoming challenges of the tournament.
4	Click on the 'Input Score' button to input the latest scores or inform if the challenged player has backed out.
5	Click on the 'Join Competition' button to join a player to a competition and to add that name to the competition.
6	Click on the 'Leave Competition' button to leave the competition and remove that from the ladder.
7	Click on the 'Query' button to make and view all queries.
8	Widget that displays the current date for the user

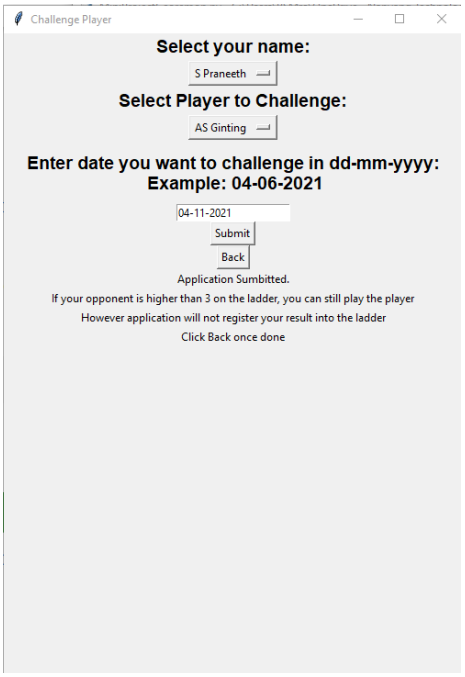
1.2 Ladder Ranking



Label	Function
1	Shows the current ladder
2	Click on ‘Close’ to go back to main page

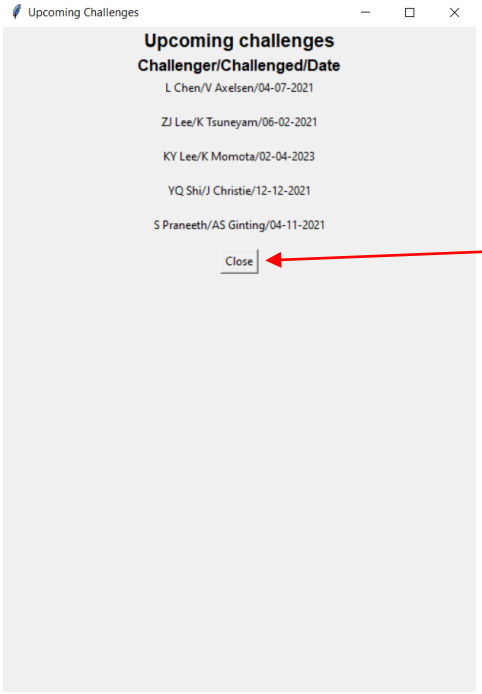
1.3 Challenge Player





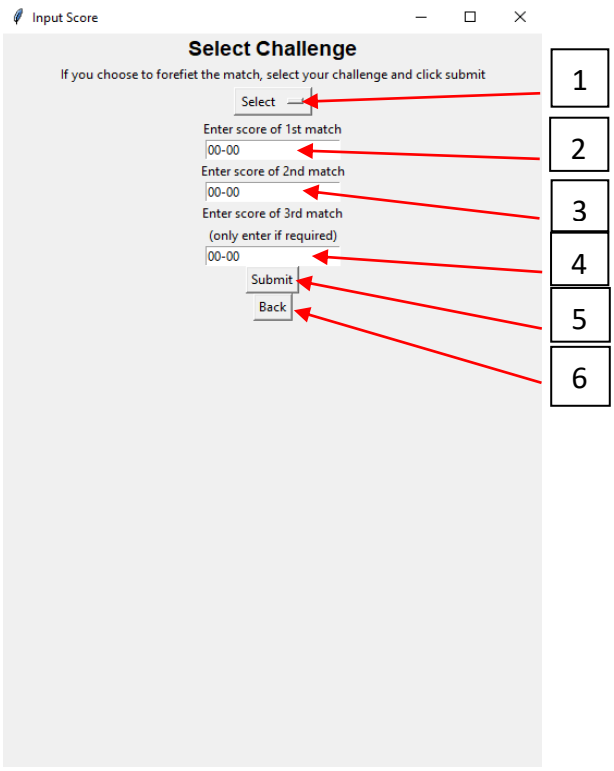
Label	Function
1	Click on the 'Select' button to select the player's name.
2	Click on the 'Select' button to select the player that he wishes to challenge.
3	Key in the date of the challenge in the format of dd-mm-yyyy
4	Submit the challenge. All data will be recorded. If the player chooses to challenge a player that is higher than 3 on the ladder, the match will still take place however the change in ladder position will not be recorded. A notification will pop to show the player this message.
5	Click on 'Back' to go back to the main page.

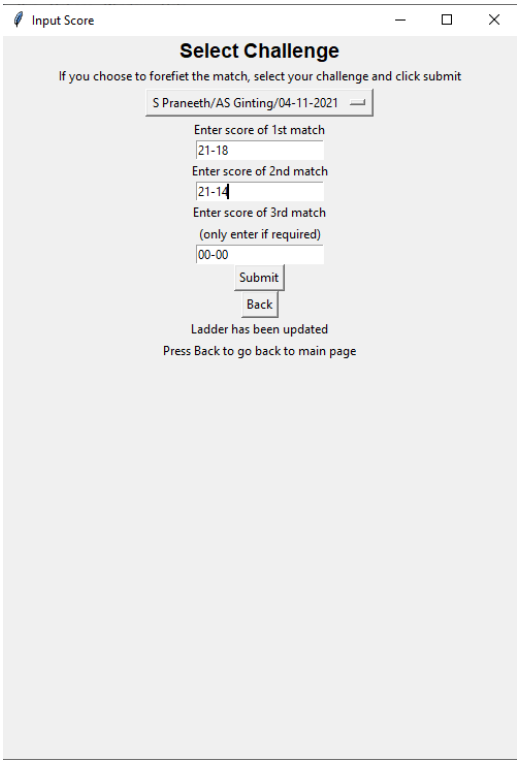
1.4 Upcoming Challenges



Label	Function
1	Click ‘Back‘ to go back to the main page

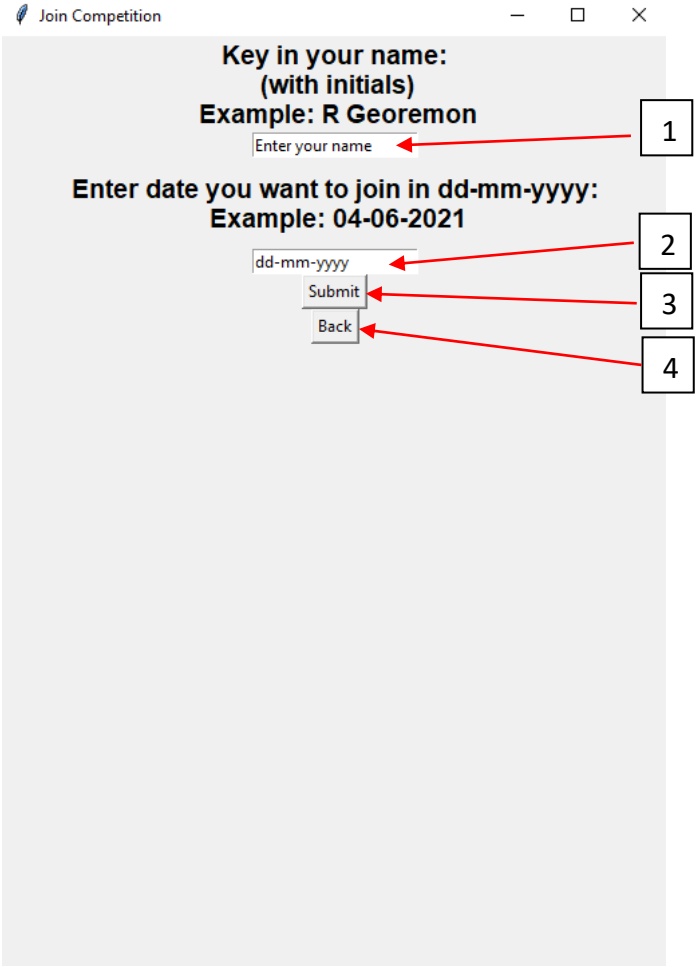
1.5 Input Score





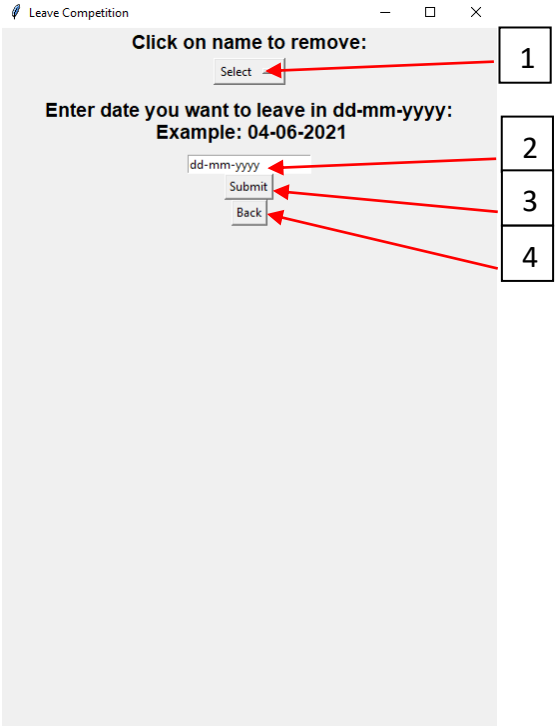
Label	Function
1	Click on the 'Select' button to select the challenge
2	Enter the result of the first match in the form 00-00
3	Enter the result of the second match in the form 00-00
4	Enter the result of the third match in the form 00-00 (if any)
5	Click submit to record the data. Should the challenged choose not to participate, the result score can be submitted without entering any of the score. The programme will automatically declare the challenger as the winner.
6	Click on 'Back' to go back to the main page.

1.6 Join Competition



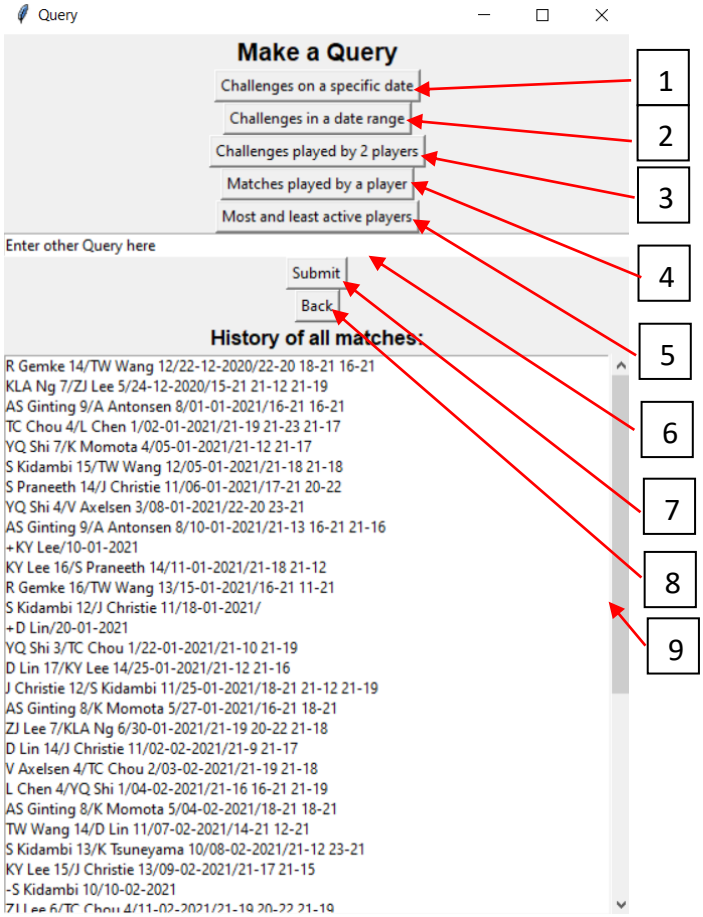
Label	Function
1	Enter new player's name
2	Enter date the player wants to join the competition
3	Click submit to record the data
4	Click on 'Back' to go back to the main page.

1.7 Leave Competition



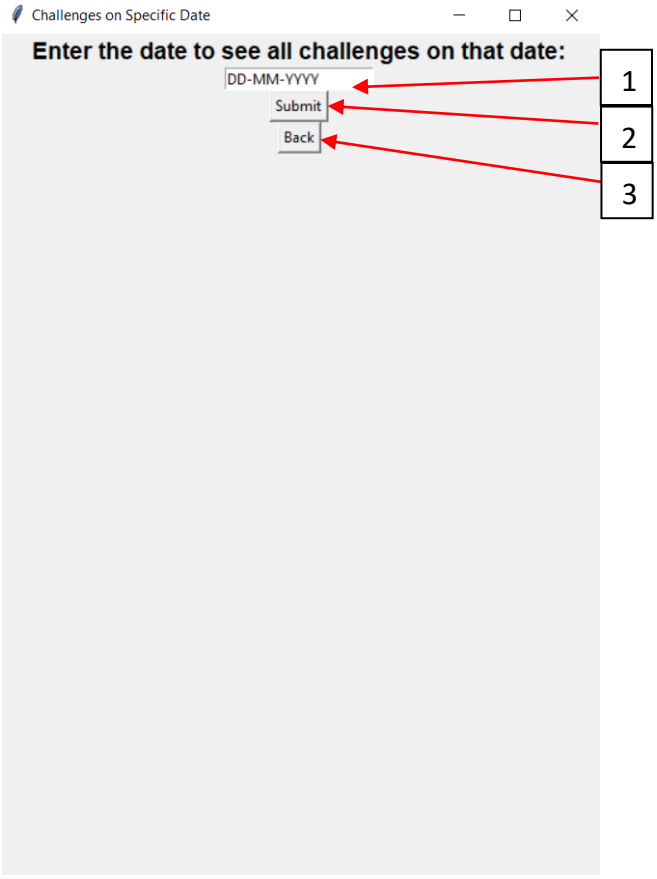
Label	Function
1	Select player's name to leave from the competition
2	Select date that the player wants to leave the competition
3	Click submit to record the data
4	Click on 'Back' to go back to the main page.

1.8 Query



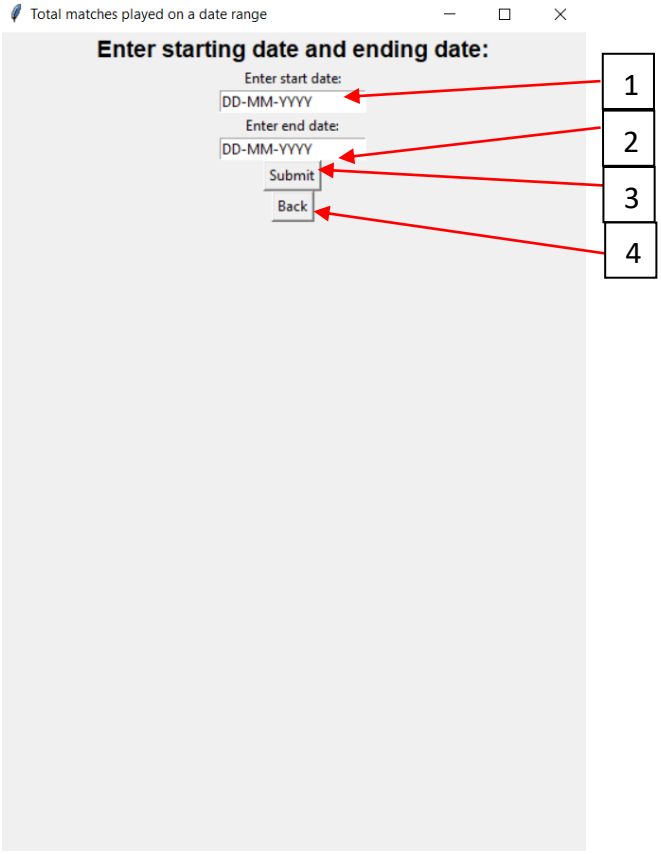
Label	Function
1	Query to view challenges on a specific date
2	Query to view challenges on a date range
3	Query to view all challenges played between 2 players
4	Query to view all challenges played by a single player
5	Query to show most and least active player
6	Submit queries to be reviewed manually
7	Submit manual query
8	Go back to main page
9	Scrollable bar to view history of the match

1.8.1 (Query) Challenges on a specific date



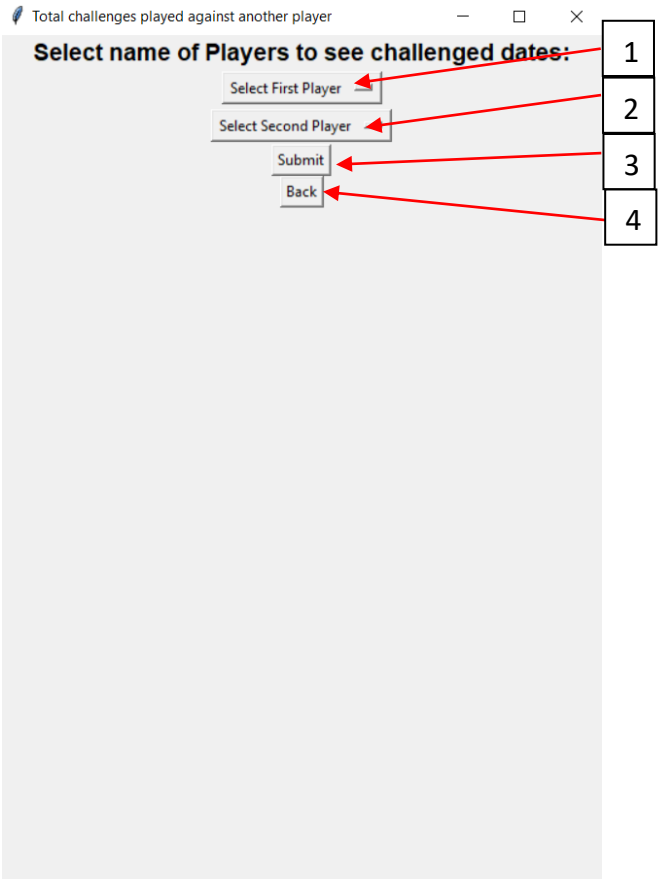
Label	Function
1	Enter the date
2	Click Submit to view history of that date
3	Click on ‘Back’ to go back to the main page.

1.8.2 (Query) Challenges on a range of dates



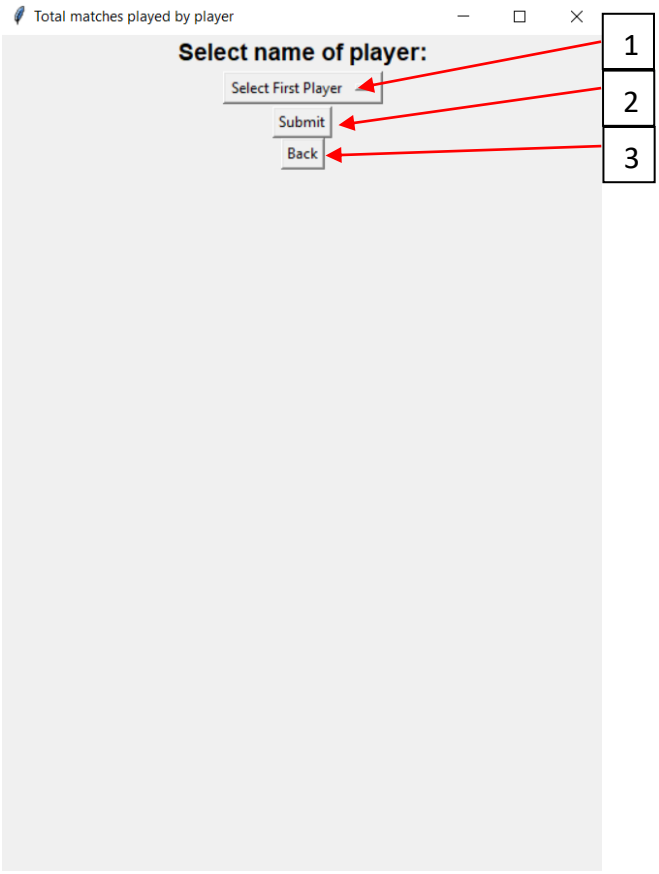
Label	Function
1	Enter the start date
2	Enter the end date
3	Click Submit to view history of that date
4	Click on ‘Back’ to go back to the main page.

1.8.3 (Query) Challenges played between 2 player



Label	Function
1	Enter name of first player
2	Enter name of second player
3	Click Submit to view history of those players
4	Click on ‘Back’ to go back to the main page.

1.8.4 (Query) Challenges played by a player



Label	Function
1	Select name of player
2	Click Submit to view history of those players
3	Click on ‘Back’ to go back to the main page.

1.8.5 (Query) Most and least active player

Label	Function
1	Click on ‘Back’ to go back to main page

2 Data on a sequence of runs

This programme comes with 2 data files to store the data. The first is the original data file that will store and execute the commands line by line whenever there is an addition, removal or updated score in a match. The other data file is called 'upcoming_challenges.txt'. This data file temporarily stores data of upcoming challenges. After a challenge is played or the score is updated, the line containing the data from the upcoming challenges will be removed and moved over to the main data file with the updated scores. This is to allow the programme run time to be shorter as it no longer has to read through one long file for data but instead know where to look for the data that it needs most at any time. This also allows the programme to be more organised. The following is how the data files looked after a series of runs. The data for the query that has been typed in will also be stored on a separate query file so that a person can tend to the query at a later time should their query not be answered on the queries page itself.

'data.txt':

```
R Gemke 14/TW Wang 12/22-12-2020/22-20 18-21 16-21
KLA Ng 7/ZJ Lee 5/24-12-2020/15-21 21-12 21-19
AS Ginting 9/A Antonsen 8/01-01-2021/16-21 16-21
TC Chou 4/L Chen 1/02-01-2021/21-19 21-23 21-17
YQ Shi 7/K Momota 4/05-01-2021/21-12 21-17
S Kidambi 15/TW Wang 12/05-01-2021/21-18 21-18
S Praneeth 14/J Christie 11/06-01-2021/17-21 20-22
YQ Shi 4/V Axelsen 3/08-01-2021/22-20 23-21
AS Ginting 9/A Antonsen 8/10-01-2021/21-13 16-21 21-16
+KY Lee/10-01-2021
KY Lee 16/S Praneeth 14/11-01-2021/21-18 21-12
R Gemke 16/TW Wang 13/15-01-2021/16-21 11-21
S Kidambi 12/J Christie 11/18-01-2021/
+D Lin/20-01-2021
YQ Shi 3/TC Chou 1/22-01-2021/21-10 21-19
D Lin 17/KY Lee 14/25-01-2021/21-12 21-16
J Christie 12/S Kidambi 11/25-01-2021/18-21 21-12 21-19
AS Ginting 8/K Momota 5/27-01-2021/16-21 18-21
ZJ Lee 7/KLA Ng 6/30-01-2021/21-19 20-22 21-18
D Lin 14/J Christie 11/02-02-2021/21-9 21-17
V Axelsen 4/TC Chou 2/03-02-2021/21-19 21-18
L Chen 4/YQ Shi 1/04-02-2021/21-16 16-21 21-19
AS Ginting 8/K Momota 5/04-02-2021/18-21 18-21
TW Wang 14/D Lin 11/07-02-2021/14-21 12-21
S Kidambi 13/K Tsuneyama 10/08-02-2021/21-12 23-21
KY Lee 15/J Christie 13/09-02-2021/21-17 21-15
-S Kidambi 10/10-02-2021
ZJ Lee 6/TC Chou 4/11-02-2021/21-19 20-22 21-19
YQ Shi 2/L Chen 1/12-02-2021/18-21 21-17 20-22
A Antonsen 9/KLA Ng 7/15-02-2021/12-21 22-20 22-20
K Momota 6/V Axelsen 3/16-02-2021/18-21 21-19 24-22
R Gemke 16/S Praneeth 15/18-02-2021/12-21 21-18 21-18
V Axelsen 4/K Momota 3/20-02-2021/21-19 21-17
D Lin 11/AS Ginting 9/21-02-2021/21-16 21-13
K Tsuneyama 11/KLA Ng 8/22-02-2021/18-21 21-18 16-21
ZJ Lee 5/YQ Shi 2/24-02-2021/21-16 25-23
K Momota 5/YQ Shi 3/25-02-2021/18-21 19-21
V Axelsen 4/L Chen 1/28-02-2021/21-19 21-23 22-20
K Tsuneyama 11/D Lin 9/01-03-2021/21-17 22-24 16-21
TC Chou 6/ZJ Lee 3/02-03-2021/21-19 21-16
KLA Ng 8/A Antonsen 7/04-03-2021/21-16 22-20
-R Gemke 15/06-03-2021
+K Nishimoto/09-03-2021
K Nishimoto 16/J Christie 13/12-03-2021/21-19 21-14

+R Georemon/04-06-2021
R Georemon/TW Wang/05-06-2021/22-20 22-20 00-00
-ZJ Lee/12-06-2021
K Nishimoto/K Tsuneyama/06-06-2021/00-00 00-00 00-00
AS Ginting/A Antonsen/07-06-2021/21-21 21-21 10-20
A Antonsen/K Momota/08-06-2021/20-12 21-12 00-00
R Georemon/K Nishimoto/09-06-2021/22-12 22-10 00-00
-R Georemon/10-06-2021
```

'upcoming_challenges.txt':

```
TW Wang/K Nishimoto/14-06-2021
S Praneeth/KY Lee/15-06-2021
KLA Ng/A Antonsen/16-06-2021
L Chen/V Axelsen/20-06-2021
```

'ladder.txt':

```
V Axelsen
L Chen
TC Chou
YQ Shi
A Antonsen
KLA Ng
K Momota
D Lin
AS Ginting
K Tsuneyama
KY Lee
J Christie
K Nishimoto
S Praneeth
TW Wang
```

3 Strengths and Limitation

3.1 Strengths

1. The programme is very easy to use as it uses basic buttons, text boxes and scroll fields.
2. Aesthetics with pictures, colours and symmetry.
3. Whenever a user performs an action, the programme will let them know if the action is successful and the next action to take.
4. It can fulfil the duty of issuing a challenge, recording the result onto the ladder, joining the ladder, withdrawing from the ladder and making a query.
5. The programme always checks multiple times before carrying out any action to ensure no error. For example, the programme will check if the challenger and challenged are maximum of 3 places apart before recording any score. If the player is not, it will still allow the match to take place but the score and change in ladder will not be recorded.
6. The programme can catch most errors even when logging data and amend the errors accordingly so that the code can run smoothly without any errors for the user.

3.2 Limitation

1. Even though the programme is able to catch most errors, it is not able to catch a few errors if the data is keyed in wrongly.
2. The programme can’t fulfill all queries even though most are fulfilled.