

# Start Document for "Skating Championship"

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## Problem Description

A number of skaters take part in a skating championship. The following distances are skated consecutively: 500 metres, 5000 metres, 1500 metres and 10000 metres. Times are registered precisely to hundredths of seconds. The time achieved for the various distances is converted into points by reducing each time to a 500 metre time. The skater with the lowest total number of points wins the championship. A program must be developed in which the name and times (format mmsshh) can be entered for each consecutive competitor. The points total of each skater must then be calculated and shown, as well as who the winner is.

A speed skating board of juries needs an application that helps to determine a winner in a competition. The program must track the following things:

1. Times (format hh:mm:ss.hhh) for 500, 5000, 1500, 10000 meter distances
2. Names of the athletes
3. Total number of points

The application must be able to:

1. Register names and times of the athletes
2. Calculate the total number of points per each athlete
3. Determine the winner with lowest number of total points

Additional application requirements:

1. Contain 3 tabs
2. Contain a start-up splash screen
3. Contain an about box
4. Be displayed in the (Quick Launch) toolbar
5. The program contains a context menu, which has the following options: a shortcut to each tab, shortcut to the about box, open and close buttons

## Input & Output

In this section the inputs and outputs of the application are described. The table below provides all the inputs a user has to introduce to make the application function.

| Case          | Data Type | Conditions                  |
|---------------|-----------|-----------------------------|
| Skater's name | String    | Not empty                   |
| 500m time     | String    | time in format hh:mm:ss.hhh |
| 5000m time    | String    | time in format hh:mm:ss.hhh |
| 1500m time    | String    | time in format hh:mm:ss.hhh |

| Case        | Data Type | Conditions                               |
|-------------|-----------|--|
| 10000m time | String    | <code>time</code> in format hh:mm:ss.hhh |

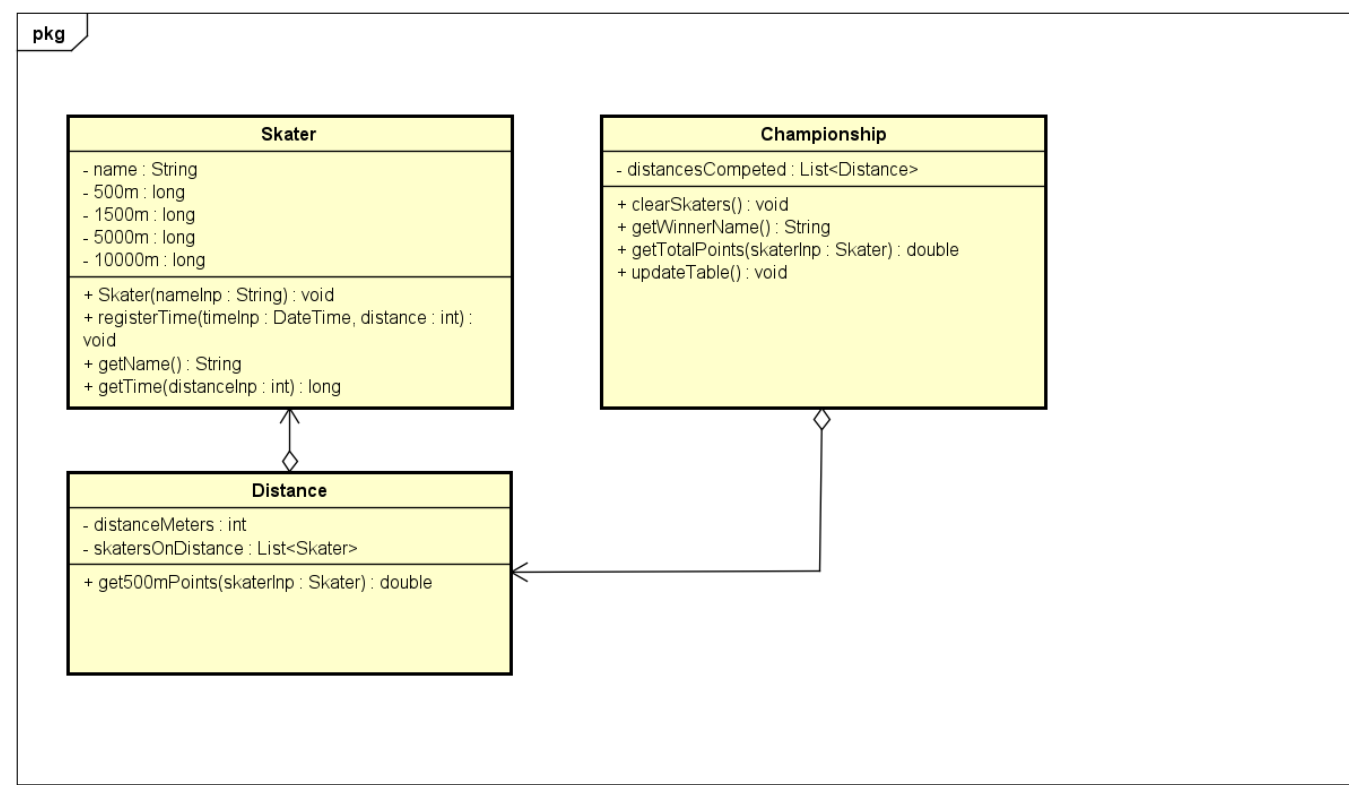
The table below provides all the outputs a user can see.

| Case                   | Data Type |
|------------------------|-----------|
| Athletes' names        | String    |
| Athletes' total points | Double    |
| Winner's name          | String    |

The tabe below provides all the calculation done by the application.

| Case                             | Calculation   |
|----------------------------------|---|
| Convert times to a 500m distance | <code>DateTime converted to integer milliseconds/(distance/500)</code>                  |
| Total number of points           | Sum of <code>time</code> in milliseconds for all distances converted to a 500m distance |

Class Diagram



Test Plan

**Test Data** The tables below provide the data used for testing.

| Input | Output |
|-------|--------|
|-------|--------|

| Input        |              |              |              |              | Output       |
|--------------|--------------|--------------|--------------|--------------|--------------|
| Name         | 500m         | 1500m        | 5000m        | 10000m       | Total Points |
| Fillipe Mota | 00:00:45.126 | 00:01:45.126 | 00:33:24.056 | 01:01:12.128 | 464180       |
| Jamie Foy    | 00:01:01.069 | 00:02:12.244 | 00:43:24.056 | 01:33:24.228 | 645767.3     |

**Test Cases** Tables below provide information about test cases. All tests are performed with the test data (described above)

### 1. Get Winner

| Step | Input   | Action                                 | Expected output |
|------|---|--|-----------------|
| 1    | Button Click                                  | Press "Update" button on "Winner" page | "Fillipe Mota"  |
| 2    | Input test data for 3rd skater on "Add+" page | name = "Chris Joslin"                  |                 |
| 3    | Input test data for 500m                      | 00:00:10.126                           |                 |
| 4    | Input test data for 1500m                     | 00:00:12.126                           |                 |
| 5    | Input test data for 5000m                     | 00:00:20.126                           |                 |
| 6    | Input test data for 10000m                    | 00:00:30.126                           |                 |
| 7    | Button click                                  | Press "Save" button on "Add+" page     |                 |
| 8    | Button Click                                  | Press "Update" button on "Winner" page | "Chris Joslin"  |

### 2. Display Total Points

| Step | Input              | Action                        | Expected output |
|------|--------------------|-------------------------------|-----------------|
| 1    | Open "Result" page | Look at "Fillipe Mota" record | 464180          |
| 2    | Open "Result" page | Look at "Jamie Foy" record    | 645767.3        |

### 3. Clear all results

| Step | Input              | Action                        | Expected output     |
|------|--------------------|-------------------------------|---------------------|
| 1    | Open "Result" page | Look at "Fillipe Mota" record | 464180              |
| 2    | Open "Result" page | Look at "Jamie Foy" record    | 645767.3            |
| 3    | Button click       | Press "Clear" button          | Empty results table |

## Graphical User Interface

Input Skaters

WinnerResult

Register Result

Name

500m

7500m

10000m

Save

Winner

WinnerResult

WINNER is

John Smith

Update

Result

WinnerResult

Results:

Name:

Total Points:

John Smith

500

Fillipe Mota

1500

Clear

About Box

About

NHL Stenden C#

Version: 0.69

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End assignment by  
Mattheu Shardin

OK

ERD

| Skater           |
|------------------|
| PK name - String |
| 500m - bigint    |
| 1500m - bigint   |
| 5000m - bigint   |
| 10000m - bigint  |