Package 'combinedevents'

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Title Calculate Scores and Marks for Track and Field Combined Events

Version 0.1.1

Description Includes functions to calculate scores and marks for track and field combined events competitions. The functions are based on the scoring tables for combined events set forth by the International Association of Athletics Federation (2001).

License GPL-3

URL https://katie-frank.github.io/combinedevents/, https://github.com/katie-frank/combinedevents

BugReports https://github.com/katie-frank/combinedevents/issues

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Imports lubridate, magrittr, rlang, stats, stringr

Suggests knitr, rmarkdown, testthat, spelling, covr

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NeedsCompilation no

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`combinedevents-package` *combinedevents: Calculate Scores and Marks for Track and Field Combined Events*

Description

The package includes functions to calculate scores and marks for track and field combined events competitions. The functions are based on the scoring tables for combined events set forth by the International Association of Athletics Federation (2001).

Author(s)

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References

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

See Also

Useful links:

- https://katie-frank.github.io/combinedevents/
- https://github.com/katie-frank/combinedevents
- Report bugs at https://github.com/katie-frank/combinedevents/issues

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`combined_events` *Combined events results*

Description

`combined_events()` is a generic function used to present results of calls to `scores()` and `marks()`.

Usage

```
combined_events(marks, scores, event_names, event, seconds, ...)
```

Arguments

`marks`	a numeric vectors of marks
`scores`	an integer vector of scores
`event_names`	a character vector of event names
`event`	a character string indicating the combined events competition
`seconds`	a numeric (either 0 or 1)
`...`	other arguments passed on to methods

Value

An object of class "combined_events". The default method returns a list of that class.

See Also

scores(), marks()

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combined_events_null *Combined events null results*

Description

combined_events_null() is a generic function used to present results of calls to scores() and marks() where in those calls combined_event = NULL.

Usage

```
combined_events_null(marks, scores, event_names, seconds, ...)
```

Arguments

marks	a numeric vector of marks
scores	an integer vector of scores
event_names	a character vector of event names
seconds	a numeric (either 0 or 1)
...	other arguments passed on to methods

Value

An object of class combined_events_null. The default method returns a list of that class.

See Also

scores(), marks()

dec *Men's decathlon performances*

Description

A dataset containing the performances of 23 athletes in the men's decathlon at the 2016 Summer Olympics.

Usage

```
dec
```

Format

A data frame with 23 rows and 24 variables. The variables `` `100m` ``, `LJ`, `SP`, `HJ`, `` `400m` ``, `` `110mH` ``, `DT`, `PV`, `JT`, and `` `1500m` `` correspond to the performances of the athletes for the ten events comprising the decathlon. Those variables ending in `_p` (e.g., `` `100m_p` ``) represent the points athletes earn for their performances in each of the ten events. A full description of the 24 variables is below.

rank rank of athlete

athlete name of athlete

nationality nationality of athlete

score_total overall score

100m 100m result, in seconds

100m_p 100m points

LJ long jump result, in meters

LJ_p long jump points

SP shot put result, in meters

SP_p shot put points

HJ high jump result, in meters

HJ_p high jump points

400m 400m result, in seconds

400m_p 400m points

110mH 110m hurdles result, in seconds

110mH_p 110m hurdles points

DT discus throw result, in meters

DT_p discus throw points

PV pole vault result, in meters

PV_p pole vault points

JT javelin throw result, in meters

JT_p javelin throw points

1500m 1500m result, in the format mm:ss.ms

1500m_p 1500m points

Source

https://en.wikipedia.org/wiki/Athletics_at_the_2016_Summer_Olympics_%2D_Men%27s_decathlon

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`marks` *Calculate marks for track and field combined events*

Description

`marks()` calculates marks for track and field combined events competitions.

Usage

```
marks(scores, gender, combined_event = NULL, seconds = FALSE)
```

Arguments

`scores`	a numeric vector of track and field scores
`gender`	gender of athlete; either "`male`" or "`female`"
`combined_event`	an optional character string indicating the combined events competition. For `gender = "male"`, the options are "`decathlon`"/"`outdoor decathlon`", "`outdoor pentathlon`", "`heptathlon`"/"`indoor heptathlon`", and "`indoor pentathlon`". For `gender = "female"`, the options are "`heptathlon`"/"`outdoor heptathlon`", "`decathlon`"/"`outdoor decathlon`", and "`pentathlon`"/"`indoor pentathlon`". If `combined_event = NULL`, the elements of `scores` must be named. • For `gender = "male"`, the allowed names for the elements of `scores` are `` `100m` ``, `LJ`, `SP`, `HJ`, `` `400m` ``, `` `110mH` ``, `DT`, `PV`, `JT`, `` `1500m` ``, `` `200m` ``, `` `60m` ``, `` `60mH` ``, and `` `1000m` ``. • For `gender = "female"`, the allowed names are `` `100m` ``, `LJ`, `SP`, `HJ`, `` `400m` ``, `` `100mH` ``, `DT`, `PV`, `JT`, `` `1500m` ``, `` `200m` ``, `` `60mH` ``, and `` `800m` ``.
`seconds`	a logical; if `TRUE`, will return all track event marks in seconds

Details

`marks()` performs the opposite action of `scores()`: you give it the scores you want to obtain, and it gives you the marks you need to achieve those scores. For track events, `marks()` returns the slowest time needed to achieve the input score. Similarly, for jumping and throwing events, `marks()` returns the shortest distance necessary to achieve the input score.

For some events, when a score is given to `marks()`, the score returned may be different from the one input because some scores are not actually possible (due to rounding of track and field marks). When an impossible score is given to `marks()`, the function will return the closest higher score that corresponds to a mark.

Value

A list of class "combined_events" (or "combined_events_null" if combined_event = NULL) with the following fields:

results	if called with non-NULL combined_event, a data frame with columns for the specified combined event containing the names of those events, mark for the resulting marks based on the input scores, and score based on the input scores. The last row of the data frame gives the total score for the specified combined events competition. If combined_event = NULL, a data frame with columns event, mark, and score.
marks	the vector of marks based on the input scores for the specified combined event. If not all scores were supplied to marks(), then there will be NA values for those events with missing scores. If combined_event = NULL, the vector of marks.
scores	the vector of scores for the specified combined event. If not all scores were supplied to marks(), then there will be NA values for those events with missing scores. If combined_event = NULL, the vector of scores.
score_total	if called with non-NULL combined_event, an integer representing the overall score for the specified combined events competition
call	the matched call

References

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

Examples

```
# Men's heptathlon
marks(scores = rep(800, 7),
      gender = "male", combined_event = "heptathlon")

# Women's pentathlon
marks(scores = c(`60mH` = 981, HJ = 875, SP = 799, LJ = 956, `800m` = 1000),
      "female", "pentathlon")

# Men's events
marks(scores = c(LJ = 790, LJ = 810, HJ = 850, HJ = 900, PV = 900, PV = 915),
      "male")
```

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scores *Calculate scores for track and field combined events*

Description

scores() calculates scores for track and field combined events competitions.

Usage

```
scores(marks, gender, combined_event = NULL, seconds = FALSE)
```

Arguments

marks	a numeric or character vector of track and field marks/performances
gender	gender of athlete; either "male" or "female"
combined_event	an optional character string indicating the combined events competition. For gender = "male", the options are "decathlon"/"outdoor decathlon", "outdoor pentathlon", "heptathlon"/"indoor heptathlon", and "indoor pentathlon". For gender = "female", the options are "heptathlon"/"outdoor heptathlon", "decathlon"/"outdoor decathlon", and "pentathlon"/"indoor pentathlon". If combined_event = NULL, the elements of marks must be named. • For gender = "male", the allowed names for the elements of marks are `100m`, LJ, SP, HJ, `400m`, `110mH`, DT, PV, JT, `1500m`, `200m`, `60m`, `60mH`, and `1000m`. • For gender = "female", the allowed names are `100m`, LJ, SP, HJ, `400m`, `100mH`, DT, PV, JT, `1500m`, `200m`, `60mH`, and `800m`.
seconds	a logical; if TRUE, will return all track event marks in seconds

Value

A list of class "combined_events" (or "combined_events_null" if combined_event = NULL) with the following fields:

results	if called with non-NULL combined_event, a data frame with columns for the specified combined event containing the names of those events, mark for the input marks/performances, and score for the resulting scores based on those marks. The last row of the data frame gives the total score for the specified combined events competition. If combined_event = NULL, a data frame with columns event, mark, and score.
marks	the vector of marks for the specified combined event. If not all marks were supplied to scores(), then there will be NA values for those events with missing marks. If combined_event = NULL, the vector of marks.
scores	the vector of scores based on the input marks for the specified combined event. If not all marks were supplied to scores(), then there will be scores with NA values for those events with missing marks. If combined_event = NULL, the vector of scores.
score_total	if called with non-NULL combined_event, an integer representing the overall score for the specified combined events competition
call	the matched call

References

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

Examples

```
# Men's decathlon
scores(marks = c(`100m` = 11.61, LJ = 7.32, SP = 13.17, HJ = 1.9,
```

```
                `400m` = 49.96, `110mH` = 15.32, DT = 38.18, PV = 4.6,
                JT = 58.98, `1500m` = "4:39.34"),
       gender = "male", combined_event = "decathlon")

# Women's heptathlon
scores(c(14.11, 1.95, 13.96, 25.61, 6.44, 45.98, "2:07.26"),
       "female", "heptathlon")

# Men's events
scores(c(`60m` = 7.09, LJ = 7, LJ = 7.03, SP = 11.8, HJ = 2,
         `60mH` = 8.30, `60mH` = 9.31, PV = 4.30, `1000m` = "2:40.00"),
       gender = "male")
```

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