

# Package ‘hosm’

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**Type** Package

**Title** High Order Spatial Matrix

**Version** 0.1.0

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**Description** Automatically displays the order and spatial weighting matrix of the distance between locations. This concept was derived from the research of Mubarak, Aslanargun, and Siklar (2021) <[doi:10.52403/ijrr.20211150](https://doi.org/10.52403/ijrr.20211150)> and Mubarak, Aslanargun, and Siklar (2022) <[doi:10.17654/0972361722052](https://doi.org/10.17654/0972361722052)>. Distance data between locations can be imported from 'Ms. Excel', 'maps' package or created in 'R' programming directly. This package also provides 5 simulations of distances between locations derived from fictitious data, the 'maps' package, and from research by Mubarak, Aslanargun, and Siklar (2022) <[doi:10.29244/ijsa.v6i1p90-100](https://doi.org/10.29244/ijsa.v6i1p90-100)>.

**License** GPL-3

**URL** <https://github.com/mubarakfadhlul/hosm>

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.2.3

**Depends** R (>= 2.10)

**Imports** maps, sf, tidyverse, units, tibble, readxl

**NeedsCompilation** no

**Repository** CRAN

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hosm	<i>Creates high order spatial matrix of the distance between locations</i>
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### Description

Creates high order spatial matrix of the distance between locations

### Usage

```
hosm(data)
```

### Arguments

data            dataframes from distances between locations

### Value

A list the order and spatial weighting matrix of the distance between locations

### References

- Mubarak, F., Aslanargun, A., & Sıklar, I. (2022). GSTARIMA Model with Missing Value for Forecasting Gold Price. *Indonesian Journal of Statistics and Its Applications*, 6(1), 90–100. <https://doi.org/10.29244/ijsa.v6i1p90-100>
- Mubarak, F., Aslanargun, A., & Sıklar, I. (2021). High order spatial weighting matrix using Google Trends. *Int J Res Rev*, 8(11), 388–396. <https://doi.org/10.52403/ijrr.20211150>
- Mubarak, F., Aslanargun, A., & Sıklar, İ. (2022). Higher-order spatial classification using Google trends data during covid-19. *Adv. Appl. Stat.*, 78, 93–103. <https://doi.org/10.17654/0972361722052>

### Examples

```
hosm(simulation1)
hosm(simulation2)
hosm(simulation3)
hosm(simulation4)
hosm(simulation5)
```

---

`simulation1`*Simulation 1 for High Order Spatial Matrix*

---

**Description**

Simulation 1 for High Order Spatial Matrix

**Usage**

```
simulation1
```

**Format**

A data frame with 4 locations:

**X** Name of Location

**X1** 1st Location

**X2** 2nd Location

**X3** 3rd Location

**X4** 4th Location

**Examples**

```
data(simulation1)
```

---

`simulation2`*Simulation 2 for High Order Spatial Matrix*

---

**Description**

Simulation 2 for High Order Spatial Matrix

**Usage**

```
simulation2
```

**Format**

A data frame with 5 locations:

**Location** Name of Location

**'Amman (Jordan)** 'Amman City in Jordan

**Abu Dhabi (United Arab Emirates)** Abu Dhabi City in United Arab Emirates

**Abuja (Nigeria)** Abuja City in Nigeria

**Accra (Ghana)** Accra City in Ghana

**Adamstown (Pitcairn)** Adamstown City in Pitcairn

**Examples**

```
data(simulation2)
```

---

```
simulation3
```

*Simulation 3 for High Order Spatial Matrix*

---

**Description**

Simulation 3 for High Order Spatial Matrix

**Usage**

```
simulation3
```

**Format**

A data frame with 5 locations:

**Location** Name of Location

**Yaren (Nauru)** Yaren City in Nauru

**Yerevan (Armenia)** Yerevan City in Armenia

**Zagreb (Croatia)** Zagreb City in Croatia

**al-'Ayun (Western Sahara)** al-'Ayun City in Western Sahara

**al-Kuwayt (Kuwait)** al-Kuwayt in (Kuwait)

**Examples**

```
data(simulation3)
```

---

```
simulation4
```

*Simulation 4 for High Order Spatial Matrix*

---

**Description**

Simulation 4 for High Order Spatial Matrix

**Usage**

```
simulation4
```

**Format**

A data frame with 4 locations:

**Location** Name of Location

**Ankara (Turkey)** Ankara City in Turkey

**Jakarta (Indonesia)** Jakarta City in Indonesia

**London (UK)** London City in UK

**Washington (USA)** Washington in USA

**Examples**

```
data(simulation4)
```

---

simulation5

*Simulation 5 for High Order Spatial Matrix*

---

**Description**

Simulation 5 for High Order Spatial Matrix

**Usage**

```
simulation5
```

**Format**

A data frame with 4 locations:

**Location** Name of Location

**Banda Aceh (Indonesia)** Banda Aceh City in Indonesia

**Edison (USA)** Edison City in USA

**Hakkari (Turkey)** Hakkari City in Turkey

**London (UK)** London City in UK

**Examples**

```
data(simulation5)
```

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