Unit Formation

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TRavljen.UnitFormation Namespace

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FormationPositioner Class

Class responsible for providing unit positions in formation on a target position facing the respective angle.

C#

```
public class FormationPositioner
```

Requirements

Namespace:TRavljen.UnitFormation[4]

Methods

GetAlignedPositions[5], GetPositions[5]

FormationPositioner.GetAlignedPositions Method

Returns aligned units formation positions that are facing the passed angle.

C#

```
public static List<Vector3> GetAlignedPositions(
    int unitCount,
    IFormation formation,
    Vector3 targetPosition,
    float targetAngle
)
```

Parameters

unitCount

Amount of units in formation.

formation

Formation that units will position in.

targetPosition

Position of the formation.

targetAngle

Facing angle for the formation.

Returns

Returns aligned positions of the units in formation.

See Also

Applies to: FormationPositioner[5]

FormationPositioner.GetPositions Method

Finds new positions for the passed positions and the formation. If distance from current positions center is less than rotation threshold, units formation will not be rotated around the target. New rotation angle is calculated from center position of all current positions and the target positions.

C#

```
public static UnitsFormationPositions GetPositions(
    List<Vector3> currentPositions,
    IFormation formation,
    Vector3 targetPosition,
    float rotationThreshold = 4.0f
)
```

Parameters

currentPositions

Current unit positions.

formation

Formation used on units

targetPosition

Position to where the units will be moved.

rotationThreshold

Threshold used to specify when the unit formation should be rotated around target position (pivot).

Returns

Returns list of the new unit positions and their new facing angle

See Also

Applies to: FormationPositioner[5]

UnitsFormationPositions Structure

Data structure that represents the units new formation positions and angles.

C#

```
public struct UnitsFormationPositions
```

Requirements

Namespace:TRavljen.UnitFormation[4]

Constructors

UnitsFormationPositions$_6$

Fields

FacingAngle$_6$, UnitPositions$_6$

UnitsFormationPositions Constructor

C#

```
public UnitsFormationPositions(
   List<Vector3> unitPositions,
   float finalRotation
)
```

Parameters

unitPositions

finalRotation

See Also

Applies to: UnitsFormationPositions$_6$

FacingAngle Field

Specifies the units facing angle (loot at direction) for the new position.

C#

```
public float FacingAngle
```

See Also

Applies to: UnitsFormationPositions$_6$

UnitPositions Field

Specifies the new positions that units can move to new formation.

C#

```
public List<Vector3> UnitPositions
```

See Also

Applies to: UnitsFormationPositions$_6$

TRavljen.UnitFormation.Formations Namespace

Interfaces

IFormation[7]

Structures

LineFormation[8], RectangleFormation[9], TriangleFormation[10]

IFormation Interface

Defines the contact that all formations must implement. Formation should be generated or provided on the fly by calling GetPositions.

C#

```
public interface IFormation
```

Requirements

Namespace:TRavljen.UnitFormation.Formations[7]

Methods

GetPositions[7]

IFormation.GetPositions Method

C#

```
List<Vector3> GetPositions(
   int unitCount
)
```

Parameters

unitCount

See Also

Applies to: IFormation[7]

LineFormation Structure

Formation that positions units in a straight line with specified spacing.

C#

```
public struct LineFormation : IFormation
```

Requirements

Namespace:TRavljen.UnitFormation.Formations[7]

Constructors

LineFormation[8]

Methods

GetPositions[8]

LineFormation Constructor

Instantiates line formation.

C#

```
public LineFormation(
   float spacing
)
```

Parameters

spacing

Specifies spacing between units.

See Also

Applies to: LineFormation[8]

LineFormation.GetPositions Method

C#

```
public List<Vector3> GetPositions(
   int unitCount
)
```

Parameters

unitCount

See Also

Applies to: LineFormation[8]

RectangleFormation Structure

Formation that positions units in a rectangle with specified spacing and maximal column count.

C#

```
public struct RectangleFormation : IFormation
```

Requirements

Namespace:TRavljen.UnitFormation.Formations[7]

Constructors

RectangleFormation[9]

Methods

GetPositions[9]

RectangleFormation Constructor

Instantiates rectangle formation.

C#

```
public RectangleFormation(
    int columnCount,
    float spacing,
    bool centerUnits = true
)
```

Parameters

columnCount

Maximal number of columns per row (there are less rows if number of units is smaller than this number).

spacing

Specifies spacing between units.

centerUnits

Specifies if units should be centered if they do not fill the full space of the row.

See Also

Applies to: RectangleFormation[9]

RectangleFormation.GetPositions Method

C#

```
public List<Vector3> GetPositions(
    int unitCount
)
```

Parameters

unitCount

See Also

Applies to: RectangleFormation[9]

TriangleFormation Structure

Formation that positions units in a triangle with specified spacing.

C#

```
public struct TriangleFormation : IFormation
```

Requirements

Namespace:TRavljen.UnitFormation.Formations[7]

Constructors

TriangleFormation[10]

Methods

GetPositions[10]

TriangleFormation Constructor

Instantiates triangle formation.

C#

```
public TriangleFormation(
   float spacing,
   bool centerUnits = true
)
```

Parameters

spacing

Specifies spacing between units.

centerUnits

Specifies if units should be centered if they do not fill the full space of the row.

See Also

Applies to: TriangleFormation[10]

TriangleFormation.GetPositions Method

C#

```
public List<Vector3> GetPositions(
   int unitCount
)
```

Parameters

unitCount

See Also

Applies to: TriangleFormation[10]

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