

CIPS

Cinderella - Intergeo - GeoProofScheme

Group 2

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```

→ CIPS java -jar cips.jar --help
Missing required options: j, i, o
usage: java -jar cips.jar -j c2i -i <cinderella file> -o <intergeo file>
java -jar cips.jar -j g2i -i <geoproofscheme file> -o <intergeo file> -p
[default parameter file]
java -jar cips.jar -j vc -i <cinderella file> -o <visualization file>
java -jar cips.jar -j vi -i <intergeo file> -o <visualization file>
java -jar cips.jar -j vg -i <geoproofscheme file> -o <visualization file>
-p [default parameter file]

-h, --help          print this message
-i, --input <arg>   input file path
-j, --job-type <arg>
                    "c2i": cinderella to intergeo,
                    "g2i": geoproofscheme to intergeo,
                    "vc": cinderella visualisation with jsxgraph,
                    "vi": intergeo visualisation with jsxgraph,
                    "vg": geoproofscheme visualisation with jsxgraph
-o, --output <arg>  output file path
-p, --parameter <arg> default parameter file path

```

Convert GeoProofScheme to Intergeo

Usage:

```
java -jar cips.jar -j g2i  
                    -i <path to geoproofscheme file>  
                    -o <path to intergeo file>  
                    -p [path to default parameter file]
```

Convert GeoProofScheme to Intergeo

Example: geoproofscheme_test.xml

```
<Construction>
<Title>geoproofscheme_test</Title>
<prooftype> constructive </prooftype>
<parameters>u1,u2,u3,u4</parameters>
<Points>
<Point id='c1' type='free'>Point[0, 25]</Point>
<Point id='c2' type='free'>Point[0, 19]</Point>
<Point id='c3' type='free'>Point[14.82, 14.18]</Point>
<Point id='c4' type='free'>Point[14.82, 8.18]</Point>
<Point id='c5' type='free'>Point[8.88, -3.09]</Point>
<Point id='c6' type='free'>Point[8.88, -9.09]</Point>
<Point id='c7' type='free'>Point[-8.88, -3.09]</Point>
<Point id='c8' type='free'>Point[-8.88, -9.09]</Point>
<Point id='c9' type='free'>Point[-14.82, 14.18]</Point>
<Point id='c10' type='free'>Point[-14.82, 8.18]</Point>
<Point id='c11' type='free'>Point[u2, u3]</Point>
<Point id='c12' type='free'>Point[90, u3]</Point>
<Point id='c13' type='free'>Point[u2, -30]</Point>
<Point id='c14' type='free'>Point[90, -30]</Point>
</Points>
```

Default parameters

u1	-1.58
u2	40
u3	-10
u4	0

```
<Assignments>
<Point id='c31'>circle_slider[c1, c2, u1]</Point>
<Point id='c32'>circle_slider[c3, c4, u1]</Point>
<Point id='c33'>circle_slider[c5, c6, u1]</Point>
<Point id='c34'>circle_slider[c7, c8, u1]</Point>
<Point id='c35'>circle_slider[c9, c10, u1]</Point>
<Line id='c36'>pp_line[c31, c33]</Line>
<Line id='c37'>pp_line[c31, c34]</Line>
<Line id='c38'>pp_line[c32, c34]</Line>
<Line id='c39'>pp_line[c32, c35]</Line>
<Line id='c40'>pp_line[c33, c35]</Line>
<Circle id='c41'>p3_circle[c31, c32, c33]</Circle>
<Point id='c42'>midpoint[c11, c13]</Point>
<Point id='c43'>midpoint[c12, c14]</Point>
<Circle id='c44'>pc_circle[c42, c11]</Circle>
<Circle id='c45'>pc_circle[c43, c12]</Circle>
<Point id='c46'>circle_slider[c42, c11, u4]</Point>
<Point id='c47'>circle_slider[c43, c12, u4]</Point>
<Line id='c48'>pp_line[c46, c47]</Line>
<Line id='c49'>ortho_line[c11, c48]</Line>
<Line id='c50'>ortho_line[c12, c48]</Line>
<Point id='c51'>intersection_point[c48, c49]</Point>
<Point id='c52'>intersection_point[c48, c50]</Point>
<Point id='c53'>midpoint[c11, c51]</Point>
<Point id='c54'>midpoint[c13, c51]</Point>
<Point id='c55'>midpoint[c12, c52]</Point>
<Point id='c56'>midpoint[c14, c52]</Point>
<Line id='c57'>pp_line[c53, c55]</Line>
<Line id='c58'>pp_line[c54, c56]</Line>
<Point id='c59'>midpoint[c51, c53]</Point>
<Point id='c60'>midpoint[c51, c54]</Point>
<Point id='c61'>midpoint[c55, c52]</Point>
<Point id='c62'>midpoint[c52, c56]</Point>
<Line id='c63'>pp_line[c59, c61]</Line>
<Line id='c64'>pp_line[c60, c62]</Line>
</Assignments>
</Construction>
```

Convert GeoProofScheme to Intergeo

Convert GeoProofScheme to Intergeo

Example: geoproofscheme_test.xml

```
java -jar cips.jar -j g2i  
                    -i geoproofscheme_test.xml  
                    -o intergeo_from_geoproofscheme.xml  
                    -p defaultparameters.txt
```

Visualize GeoProofScheme

Usage:

```
java -jar cips.jar -j vg  
                    -i <path to geoproofscheme file>  
                    -o <path to visualization file>  
                    -p [path to default parameter file]
```

Visualize GeoProofScheme

Visualize GeoProofScheme

Example: Visualize geoproofscheme_test.xml

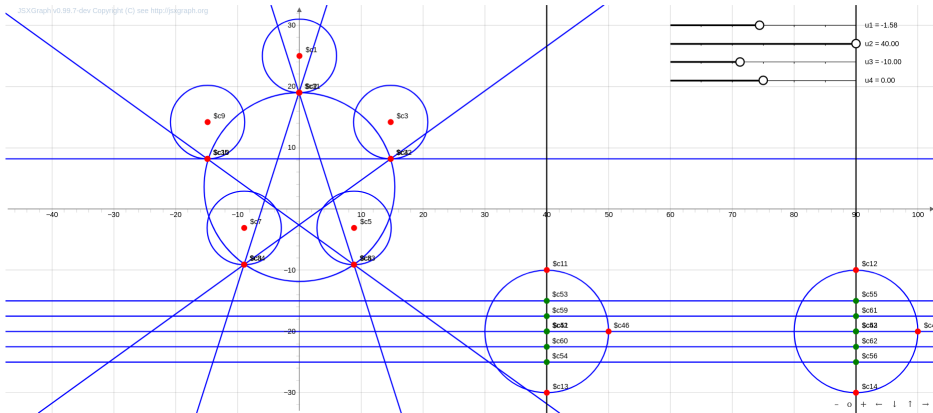
```
java -jar cips.jar -j vg  
                    -i geoproofscheme_test.xml  
                    -o geoproofscheme_test.html  
                    -p defaultparameters.txt
```

Visualize GeoProofScheme

Visualize GeoProofScheme

Example: Visualize geoproofscheme_test.xml

geoproofscheme_test



Compare with the above converted Intergeo

Compare with the above converted Intergeo

Example: Visualize intergeo_from_geoproofscheme.xml

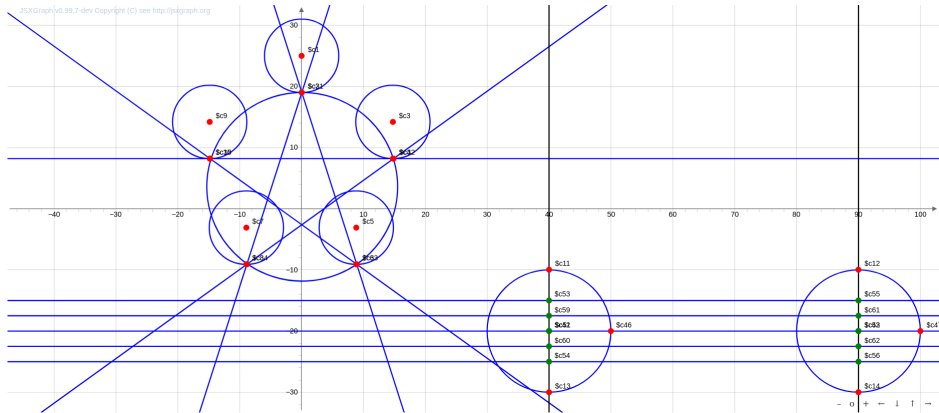
```
java -jar cips.jar -j vi  
                    -i intergeo_from_geoproofscheme.xml  
                    -o intergeo_from_geoproofscheme.html
```

Compare with the above converted Intergeo

Compare with above the converted Intergeo

Example: Visualize intergeo_from_geoproofscheme.xml

intergeo_from_geoproofscheme.html



G2I - Transformation Status

GeoProofScheme Elements that are convertible with CIPS:

GeoProofScheme Element	Corresponding Intergeo Element
free_point	free_point
intersection_point	point_intersection_of_two_lines
midpoint	midpoint_of_two_points
pp_line	line_through_two_points
par_line	line_parallel_to_line_through_point
ortho_line	line_perpendicular_to_line_through_point
pc_circle	circle_by_center_and_point
p3_circle	circle_by_three_points
line_slider	point_on_line
circle_slider	point_on_circle
p3_bisector*	lineAngularBisector_of_three_points

GeoProofScheme - Visualization Status

GeoProofScheme Elements that can be visualized with CIPS:

GeoProofScheme Element	Note
free_point	Free point
intersection_point	The intersection point of the lines a,b
midpoint	The midpoint of two points A,B
varpoint	The point $D=(1-u)*A+u*B$ that slides on the line AB, with parameter u
fixedpoint	The point $D=(1-u)*A+u*B$ on the line AB for a fixed value of u
pp_line	The line through two points A,B
par_line	The line through P parallel to line a
ortho_line	The line through P orthogonal to the line a
pc_circle	The circle with given center M and circumfere point A
p3_circle	The circle through 3 given points
line_slider	Chooses a point on a using parameter u
circle_slider	Choose a point on the circle with center M and point A on the perimeter using a rational parametrization with parameter u.
p3_bisector*	bisector of the angle ABC
altitude	The altitude from A goto BC
median	The median line from A to BC
p_bisector*	The perpendicular bisector of BC

Convert Cinderella to Intergeo

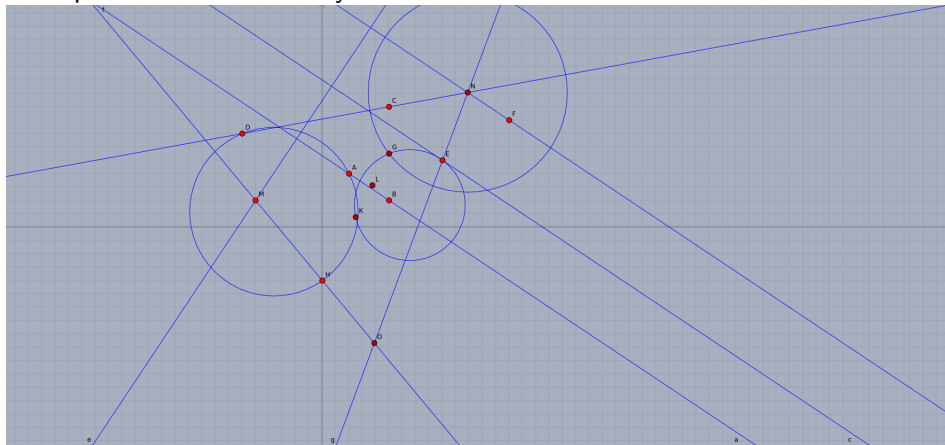
Convert Cinderella to Intergeo

Example: cinderella_test.cdy

```
java -jar cips.jar -j c2i  
                    -i cinderella_test.cdy  
                    -o intergeo_from_cinderella.xml
```

Visualize Cinderella

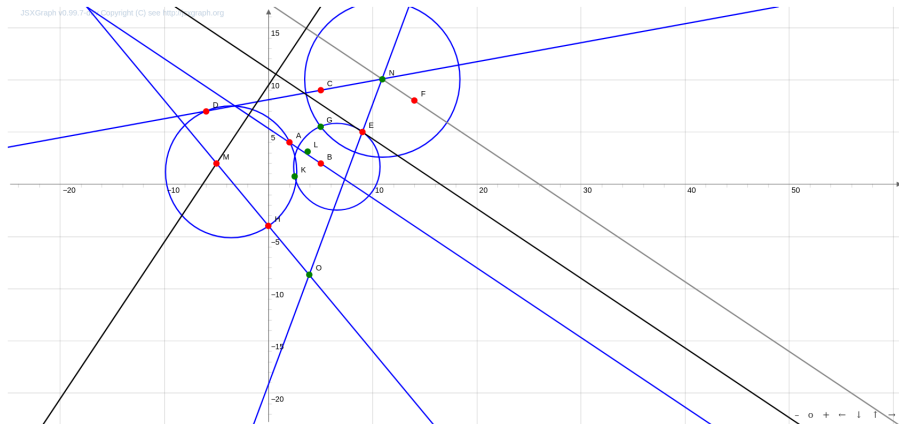
Example: cinderella_test.cdy



Visualize Cinderella

Visualize cinderella_test.cdy with CIPS

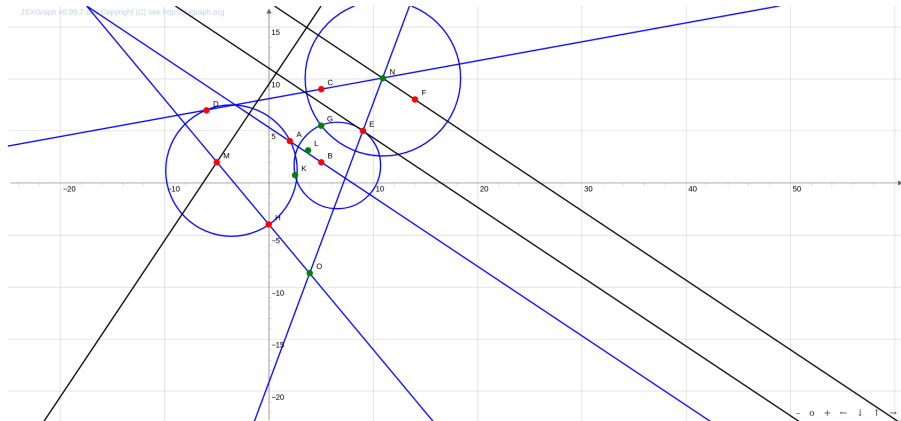
cinderella_test.cdy



Visualize Cinderella

Visualize the above converted intergeo_from_cinderella.xml

intergeo_from_cinderella.xml



C2I - Transformation Status

Cinderella Elements that are convertible with CIPS:

Cinderella Element	Corresponding Intergeo Element
FreePoint	free_point
Meet	point_intersection_of_two_lines
Mid	midpoint_of_two_points
Join	line_through_two_points
Parallel	line_parallel_to_line_through_point
Orthogonal	line_perpendicular_to_line_through_point
CircleMP	circle_by_center_and_point
CircleBy3	circle_by_three_points