
<JSTORM>

1



JSTORM
<http://www.jstorm.pe.kr>

Document Information

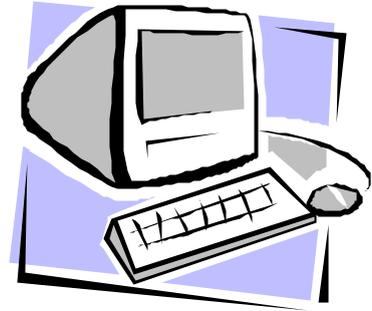
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Content Information

Audience	
Abstract	5
	API .
	가 . API
	..
Reference	Printing in Java, Part 1 (http://www.javaworld.com/javaworld/jw-10-2000/jw-1020-print_p.html) by Jean-Pierre Dubé
Benchmark information	

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1

Java

5

API
API Wrapping

가

API
API

API

API

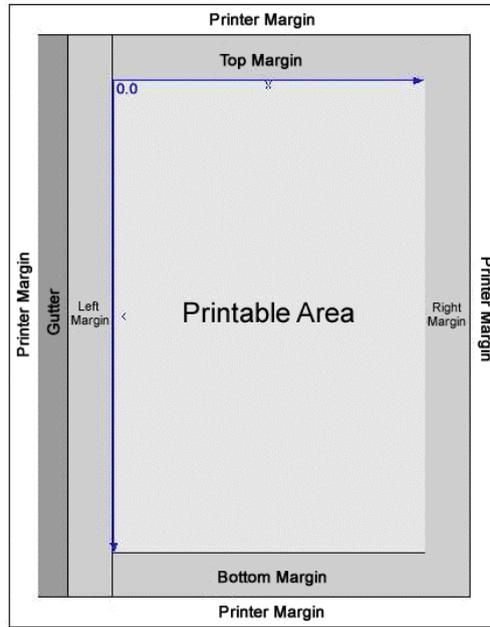
가

5
(margin)

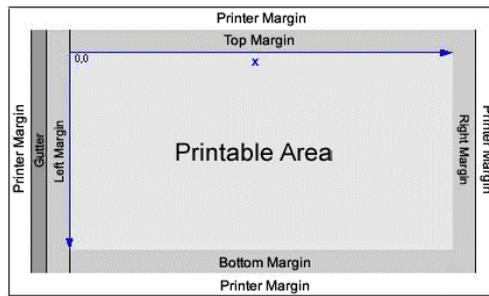
가

(,)

가



1, 2



2. 가

1 2

가

가

가

가 .API

가

가

(gutter) . duplex

()

가

.API

가

가 .
 가 (printable area) .
 GUI BorderLayout .
 BorderLayout (top) (Bottom) .
 Graphic2D (Java 2D class) (device space)
 (user space) (device space)
 . 100 x 100
 1024 x 768 가 1600 x 1400 가
 0 가 . 1600 x 140
 (User space)
 () Graphic2D
 72dpi .
 . 1 x 1 72
 x 72 . letter-size (8.5 x 11) 612 x 792
 API .
 2 . 1.2
 (. (2D API API
 .) 2D API
 가 .
 API 가
 (printer discovery :
 가 가)
 가 가
 API 가 가
 Internet Printing Protocol Java 1.4

1.2

가

API callback

1.2
API

1.1

가

1.2

.1

가

JDK 1

가

가

가

Printable (job) Pageable , 2가

Printables Job

Printable

PagePainter

가

PagePainter

0

NO_SUCH_PAGE

5

7

7

5, 6,7

가

Pageables Job

Pageable 가 Printable
. Pageable (Book) 가
. Book 가
Pageable 가
~~가~~ (painter) 가
~~가~~, 3
~~가~~ Pageable 가
(Landscape) (Portrait)
~~가~~
~~가~~ Pageable 가

Books

1.2 Book
(Painter) 가 . Book
Pageable Book
. Book
Book 가 2 Append()
(API .)
PageFormat Printable
PagePainter 가 가
UNKNOWN_NUMBER_OF_PAGES append()
NO_SUCH_PAGE Book

API

API
java.awt.print
3
4

Paper	Class	
PageFormat	Class	PageFormat (Paper)
PrinterJob	Class	
Book	Class	Book . Book 가 (Painter) 가
Pageable	Interface	Pageable (represent) . Pageable PageFormat Printable . Book
Printable	Interface	Printable print() 가
PrinterGraphics	Interface	Graphics PrinterGraphics getPrinterJob()

Pageable

Pageable 3 가 .

int getNumberOfPages()	
PageFormat getPageFormat(int pageIndex)	pageIndex PageFormat

Printable getPrintable(int pageIndex)	pageIndex	Printable
---------------------------------------	-----------	-----------

Printable

Printable

2

가

int print(Graphics graphics, PageFormat pageFormat, int pageIndex)		pageFormat graphics가
NO_SUCH_PAGE		가
PAGE_EXISTS		print() PAGE_EXISTS 가

Printable

1

print

3

가

Graphics

. Graphic

PainterGraphic

printJob

Graphic

Graphics2D

Java 2D API

. Graphics

가

3

(0, 0)

1

1 x 1

```

public int print (Graphics graphics, PageFormat pageFormat,
                 int pageIndex) {
    Graphics2D graphics2D = (Graphics2D) graphics;
    Rectangle2D.Double rectangle = new Rectangle2D.Double ();
    rectangle.setRect (pageFormat.getImageableX () + 72,
                      pageFormat.getImageableY () + 72, 72, 72);
    graphics2D.draw (rectangle);
    return (PAGE_EXISTS);
}
    
```

1 가 (printable)

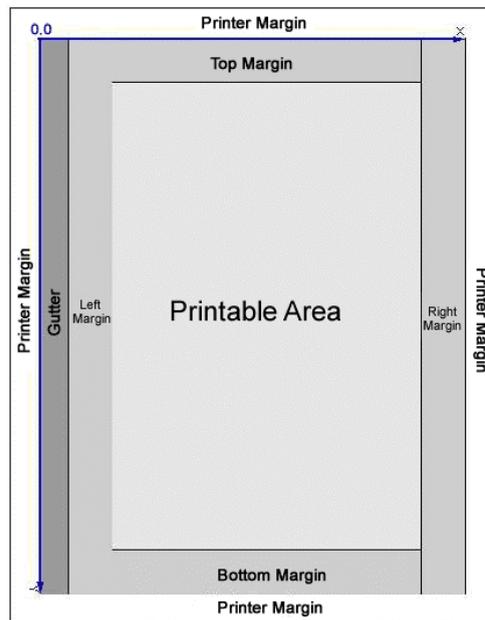
가 (printable)

(0, 0)

```
public int print (Graphics graphics, PageFormat pageFormat,  
                int pageIndex) {  
    Graphics2D graphics2D = (Graphics2D) graphics;  
    graphics2D.translate (pageFormat.getImageableX (),  
                        pageFormat.getImageableY ());  
    Rectangle2D.Double rectangle = new Rectangle2D.Double ();  
    rectangle.setRect (72, 72, 72, 72);  
    graphics2D.draw (rectangle);  
    return (PAGE_EXISTS);  
}
```

graphics2D.translate()
(0, 0)

가



3. Printable

PrinterGraphics

PrinterGraphics 1

PrinterJob getPrinterJob()	PrinterJob	Graphics
----------------------------	------------	----------

Paper

Page 5

double getHeight()	72) Letter-size 가	(1 =
double getImageableHeight()	가 ImageableHeight printable	(Imageable) 1
double getImageableWidth()	가	(Imageable)
double getImageableX()	가 API	(Imageable) x
double getImageableY()	가	(Imageable) y 가
double getWidth()	612 8.5	Letter-size
void setImageableArea(double x, double y, double width, double height)	가 API 가	(Imageable)
void setSize(double width, double height)	11 Letter	. 8.5 x 612, 792

가 Paper 가

PageFormat

Printable

print()

Paper

PageFormat

PageFormat

12

Method name	Description
double getImageableHeight()	가
double getImageableWidth()	가
double getImageableX()	가 x
double getImageableY()	가 y
double getWidth()	.
double getHeight()	. (1 = 72) 가 8.5 x 11 792 .
double[] getMatrix()	. AffineTransform
int getOrientation()	가 가 (Landscape) (Portrait)
void setOrientation(int orientation)	가 (Landscape) (Portrait)
Paper getPaper()	Paper . Paper
void setPaper(Paper paper)	PageFormat . PageFormat Paper

Page

가

PrinterJob

PrinterJob

PrinterJob

abstract void cancel()	(job) . isCancel() 가
abstract boolean isCancelled()	true
PageFormat defaultPage()	PrinterJob
abstract PageFormat defaultPage(PageFormat page)	PageFormat PageFormat
abstract int getCopies()	(job)
abstract void setCopies(int copies)	(job) 가 . (pageDialog .).
abstract String getJobName()	job
static PrinterJob getPrinterJob()	PrinterJob
abstract String getUsername()	(job)
abstract PageFormat pageDialog(PageFormat page)	가 PageFormat PageFormat 가 cancel PageFormat 가 PageFormat .. pageDialog
abstract void setPageable(Pageable document)	(document) (query) . Pageable PageFormat Printable Pageable ..
abstract void setPrintable(Printable painter)	. Painter Painter Printable print()

abstract void setPrintable(Printable painter, PageFormat format)	Painter가 PageFormat setPrintable(Printable painter)
abstract void print()	(job) Painter print()
abstract void setJobName(String jobName) abstract boolean printDialog()	가
abstract PageFormat validatePage(PageFormat page)	.(valicate) PageFormat 가 PageFormat 가 PageFormat

Book

7 가 Book

Method name	Description
void append(Printable painter, PageFormat page)	Book page 가 . painter PageFormat
void append(Printable painter, PageFormat page, int numPages)	void append(Printable painter, PageFormat page)
int getNumberOfPages()	Book
PageFormat getPageFormat(int pageIndex)	PageFormat
Printable getPrintable(int pageIndex)	Painter
void setPage(int pageIndex, Printable painter, PageFormat page)	book Painter PageFormat

PrinterJob

PrinterJob printJob = PrinterJob.getPrinterJob ();

```

PrinterJob setPrintable()
Painter Printable
PrinterJob Painter

```

```

printJob.setPrintable (Painter);

```

```

Painter PageFormat

```

```

printJob.setPrintable (Painter, pageFormat);

```

```

Painter print()

```

```

public int print (Graphics g, PageFormat pageFormat, int page)

```

```

pageFormat

```

5

API

```

, , 가
가 가 가
PDF HTML API Ex
port API
가 (x, y) 가

```

2

Book

API

3