Drawing Diagrams with R

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Drawing Diagrams with R

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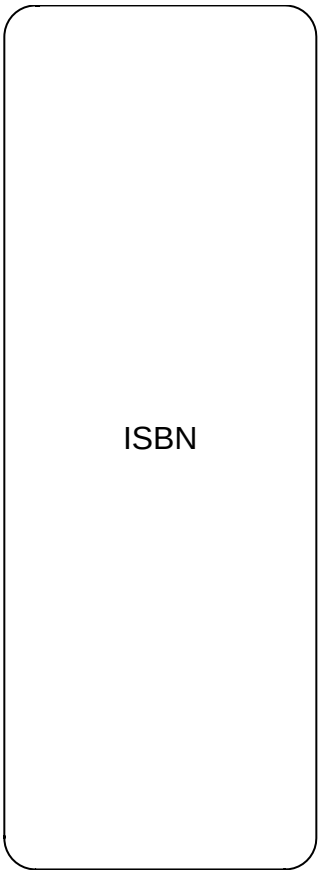
Link

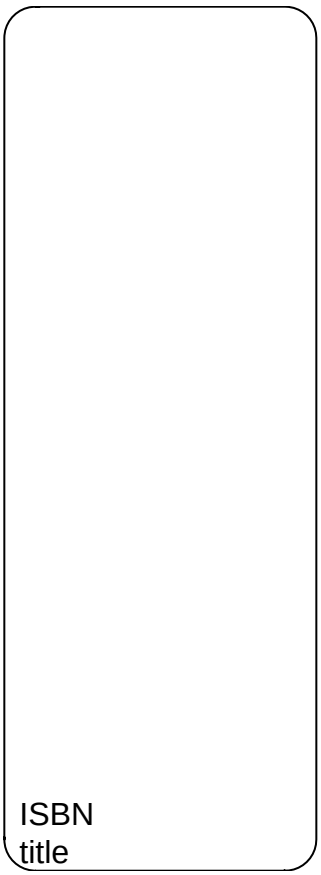
Pod każdym chunkiem kodu znajduje się wzorzec z artykułu i krótki komentarz. Grafiki można również znaleźć w katalogu *extra/DrawingDiagramsWithR*.

```
library(grid)
grid.roundrect(width=.25)
grid.text("ISBN")
```



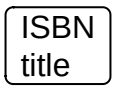
Problem z proporcjami, wyjściowy prostokąt jest za wysoki.

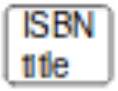
```
pushViewport(viewport(width=.25))
grid.roundrect()
grid.text("ISBN",x=unit(2, "mm"),y=unit(1.5, "lines"),just="left")
grid.text("title",x=unit(2, "mm"),y=unit(0.5, "lines"),just="left")
popViewport()
```



Ten sam problem co powyżej

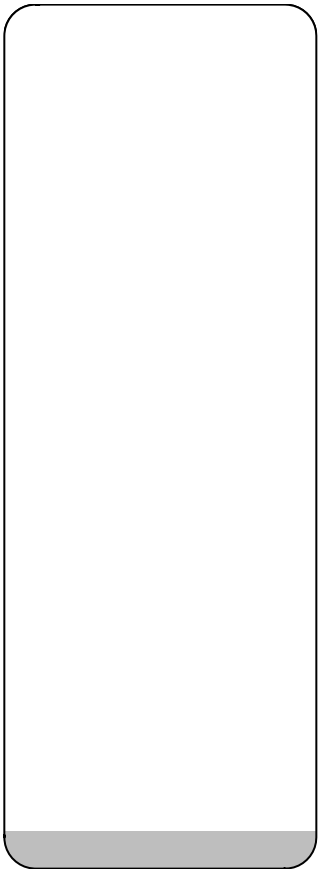
```
labels <- c("ISBN", "title")
vp <-viewport(width=max(stringWidth(labels))+unit(4, "mm"),height=unit(length(labels),"lines"))
pushViewport(vp)
grid.roundrect()
grid.text(labels,x=unit(2, "mm"),y=unit(2:1 - 0.5, "lines"),just="left")
popViewport()
```





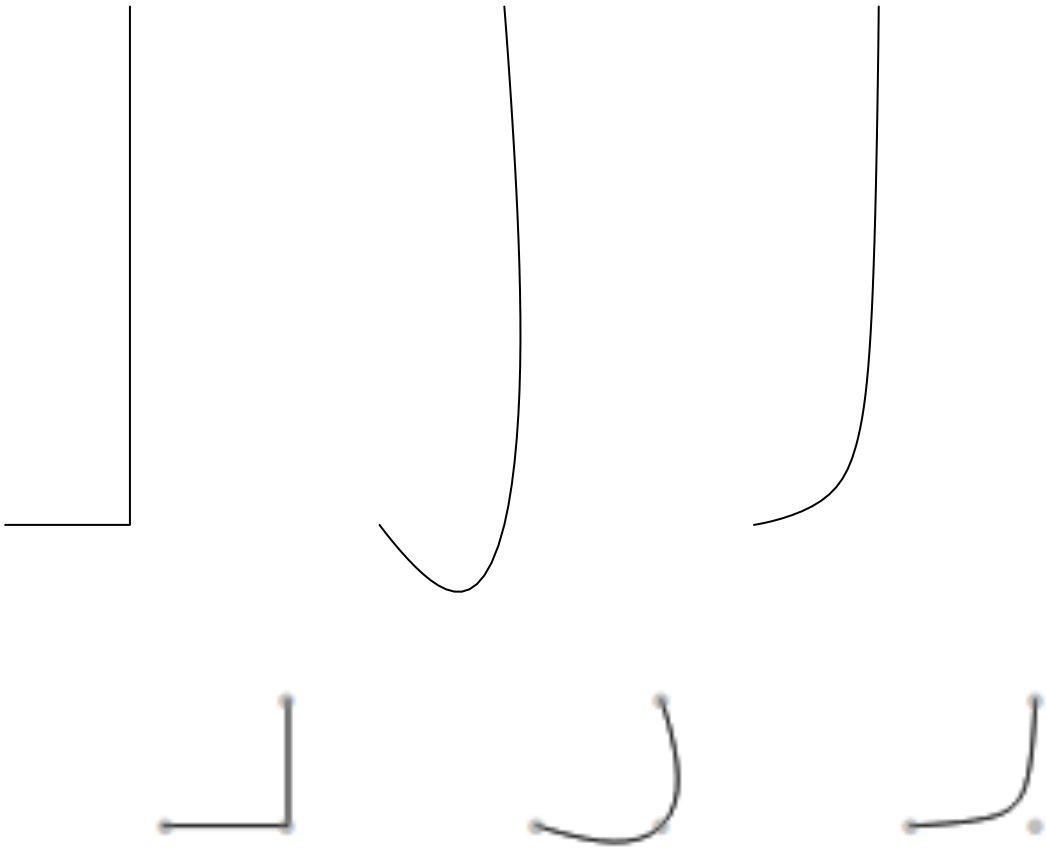
ok

```
pushViewport(viewport(width=.25))
grid.roundrect(gp=gpar(fill="grey"))
grid.clip(y=unit(1, "lines"),just="bottom")
grid.roundrect(gp=gpar(fill="white"))
popViewport()
```



Problem ze skalą znowu się powtarza.

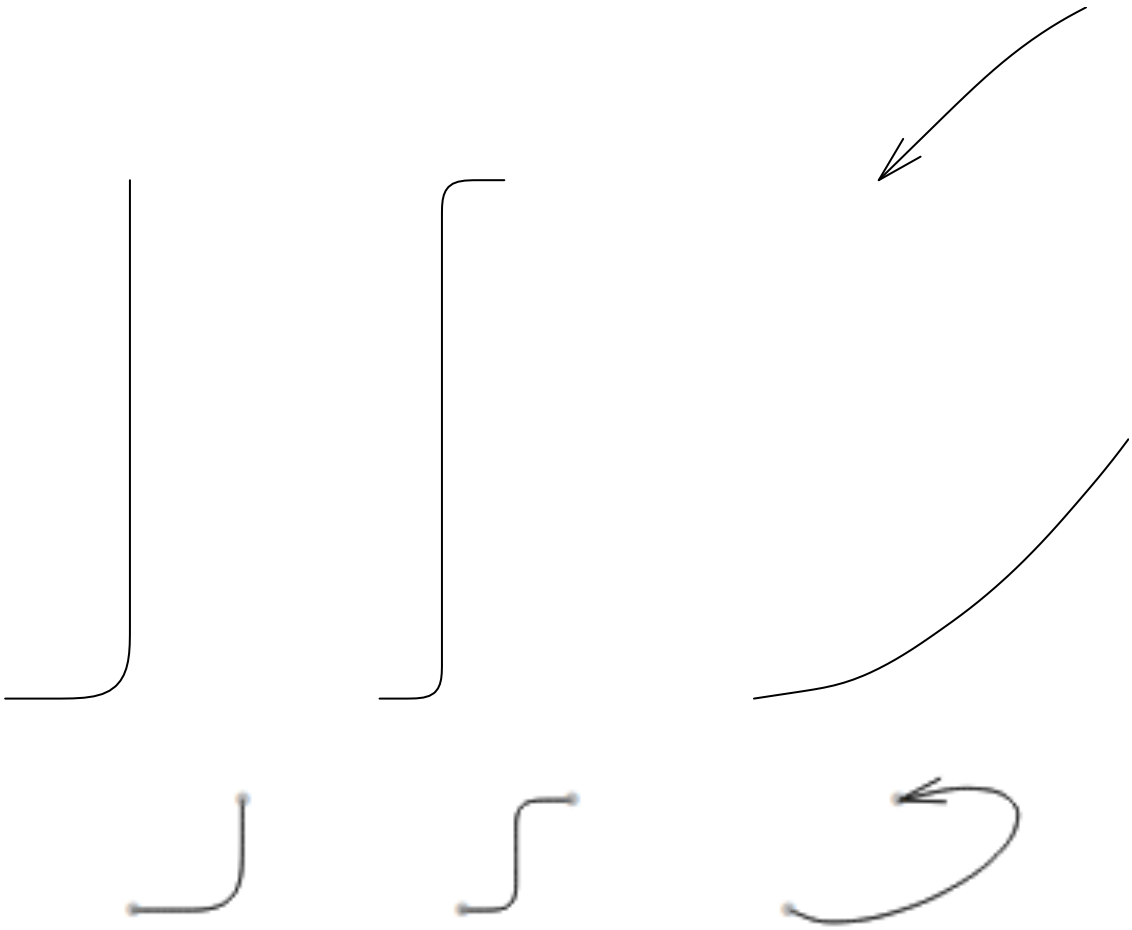
```
x1 <- c(0.1, 0.2, 0.2)
y1 <- c(0.2, 0.2, 0.8)
grid.xspline(x1, y1)
x2 <- c(0.4, 0.5, 0.5)
y2 <- c(0.2, 0.2, 0.8)
grid.xspline(x2, y2, shape=-1)
x3 <- c(0.7, 0.8, 0.8)
y3 <- c(0.2, 0.2, 0.8)
grid.xspline(x3, y3, shape=1)
```



Problem ze skalą i brak punktów widocznych na wzorcowym obrazku.

```
x1a <- 0.1; x1b <- 0.2
y1a <- 0.2; y1b <- 0.8
grid.curve(x1a, y1a, x1b, y1b)
```

```
x2a <- 0.4; x2b <- 0.5
y2a <- 0.2; y2b <- 0.8
grid.curve(x2a, y2a, x2b, y2b,inflect=TRUE)
x3a <- 0.7; x3b <- 0.8
y3a <- 0.2; y3b <- 0.8
grid.curve(x3a, y3a, x3b, y3b,ncp=8, angle=135,square=FALSE,curvature=2,arrow=arrow(angle=15))
```



Ten sam problem co powyżej. Dodatkowo ze względu na skalę strzałka wychodzi poza obszar.

```
labels <- c("ISBN", "title", "pub")
vp <-viewport(width=max(stringWidth(labels))+unit(4, "mm"),height=unit(length(labels),"lines"))
pushViewport(vp)
grid.roundrect()
grid.clip(y=unit(1, "lines"),just="bottom")
grid.roundrect(gp=gpar(fill="grey"))
grid.clip(y=unit(2, "lines"),just="bottom")
grid.roundrect(gp=gpar(fill="white"))
grid.clip()
grid.text(labels,x=unit(rep(2, 3), "mm"),y=unit(3:1 - .5, "lines"), just="left")
popViewport()
```

Tutaj już jest ok, prawdopodobnie pomogło sztywne ustawienie rozmiaru.

```
tableBox <- function(labels, x=.5, y=.5) {
  nlabel <- length(labels)
  tablevp <-viewport(x=x, y=y,width=max(stringWidth(labels)) +unit(4, "mm"),
                     height=unit(nlabel, "lines"))
  pushViewport(tablevp)
  grid.roundrect()
  if (nlabel > 1) {
    for (i in 1:(nlabel - 1)) {
      fill <- c("white", "grey")[i %% 2 + 1]
      grid.clip(y=unit(i, "lines"),just="bottom")
      grid.roundrect(gp=gpar(fill=fill))
    }
  }
  grid.clip()
  grid.text(labels,x=unit(2, "mm"), y=unit(nlabel:1 - .5, "lines"),just="left")
  popViewport()}
```

```
boxGrob <- function(labels, x=.5, y=.5) {
  grob(labels=labels, x=x, y=y, cl="box")}
drawDetails.box <- function(x, ...) {
  tableBox(x$labels, x$x, x$y)}
xDetails.box <- function(x, theta) {
  nlines <- length(x$labels)
  height <- unit(nlines, "lines")
  width <- unit(4, "mm") + max(stringWidth(x$labels))
  grobX(roundrectGrob(x=x$x, y=x$y, width=width, height=height),theta)}
yDetails.box <- function(x, theta) {
  nlines <- length(x$labels)
  height <- unit(nlines, "lines")
  width <- unit(4, "mm") + max(stringWidth(x$labels))
  grobY(rectGrob(x=x$x, y=x$y, width=width, height=height),theta)}
```

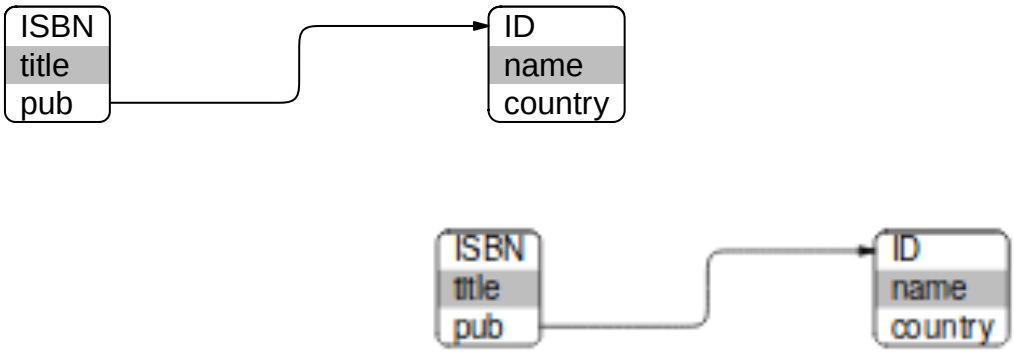
```
tableBox(c("ISBN", "title", "pub"),x=0.3)
tableBox(c("ID", "name", "country"),x=0.7)
```

ok

```
box1 <- boxGrob(c("ISBN", "title","pub"), x=0.3)
box2 <- boxGrob(c("ID", "name","country"), x=0.7)
```

ok

```
grid.draw(box1)
grid.draw(box2)
grid.curve(grobX(box1, "east"),grobY(box1, "south") +unit(0.5, "lines"),grobX(box2, "west"),
           grobY(box2, "north") -unit(0.5, "lines"),inflect=TRUE,
           arrow=arrow(type="closed",angle=15,length=unit(2, "mm")),gp=gpar(fill="black"))
```



ok

Problemy

- kwestie graficzne/estetyczne

Jak naprawić

- prawdopodobnie trzeba dodatkowo skonfigurować środowisko albo po prostu zmienić kod - ustawić parametry na sztywno

Session info

```
## R version 3.6.3 (2020-02-29)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Debian GNU/Linux 9 (stretch)
##
## Matrix products: default
## BLAS:   /usr/lib/openblas-base/libblas.so.3
## LAPACK: /usr/lib/libopenblasp-r0.2.19.so
##
## locale:
##  [1] LC_CTYPE=pl_PL.UTF-8       LC_NUMERIC=C
##  [3] LC_TIME=pl_PL.UTF-8        LC_COLLATE=pl_PL.UTF-8
##  [5] LC_MONETARY=pl_PL.UTF-8    LC_MESSAGES=pl_PL.UTF-8
##  [7] LC_PAPER=pl_PL.UTF-8       LC_NAME=C
##  [9] LC_ADDRESS=C               LC_TELEPHONE=C
## [11] LC_MEASUREMENT=pl_PL.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] grid      stats     graphics  grDevices utils     datasets  methods
## [8] base
##
## other attached packages:
## [1] png_0.1-7
##
## loaded via a namespace (and not attached):
##  [1] compiler_3.6.3   magrittr_1.5     tools_3.6.3      htmltools_0.4.0
##  [5] yaml_2.2.0       Rcpp_1.0.3       codetools_0.2-16 stringi_1.4.3
##  [9] rmarkdown_1.16   knitr_1.25       stringr_1.4.0    xfun_0.10
## [13] digest_0.6.22    rlang_0.4.1      evaluate_0.14
```