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Schumann

1	2	3	4	5	$\Sigma$

## Übungsblatt 05 (Abgabetermin 17.06.2021)

### Aufgabe 2.1:

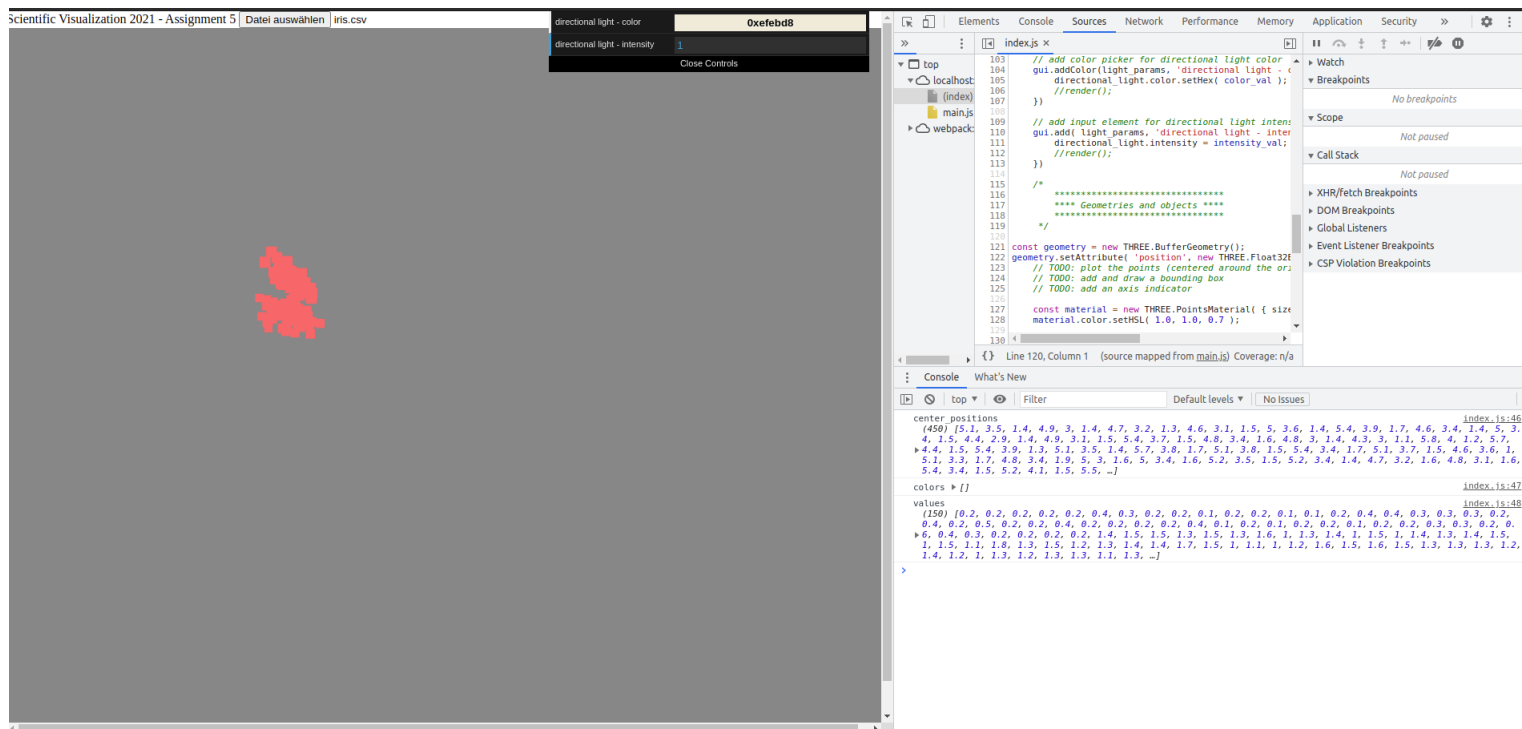


Abbildung 1: Off centered points

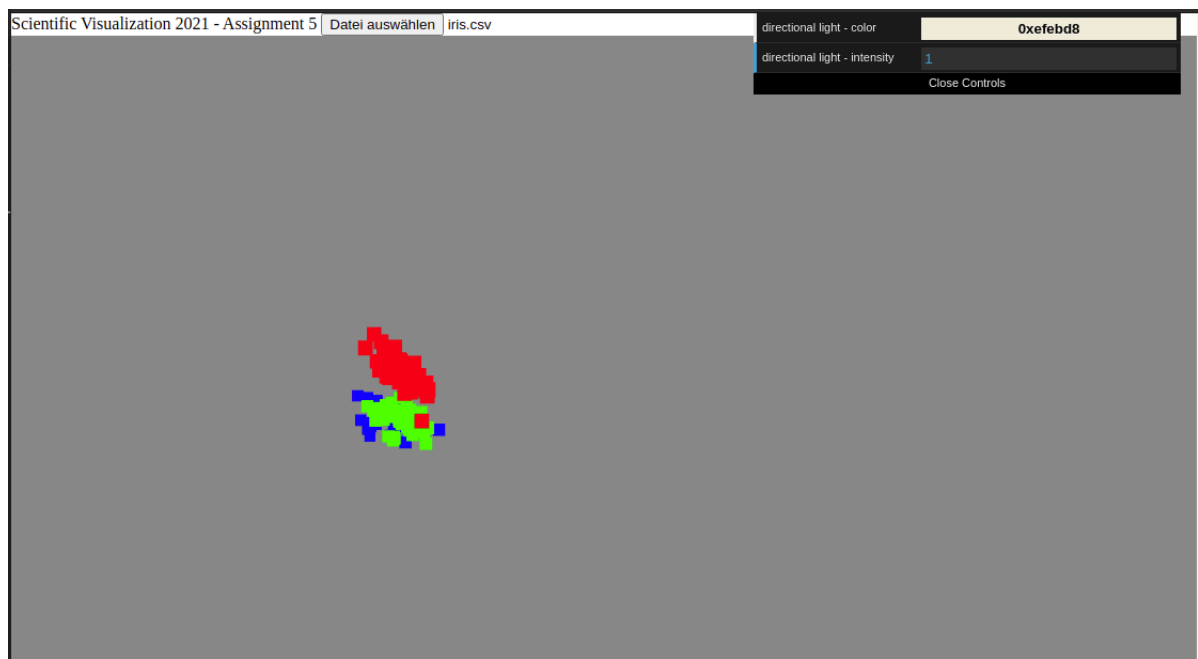


Abbildung 2: Color per class

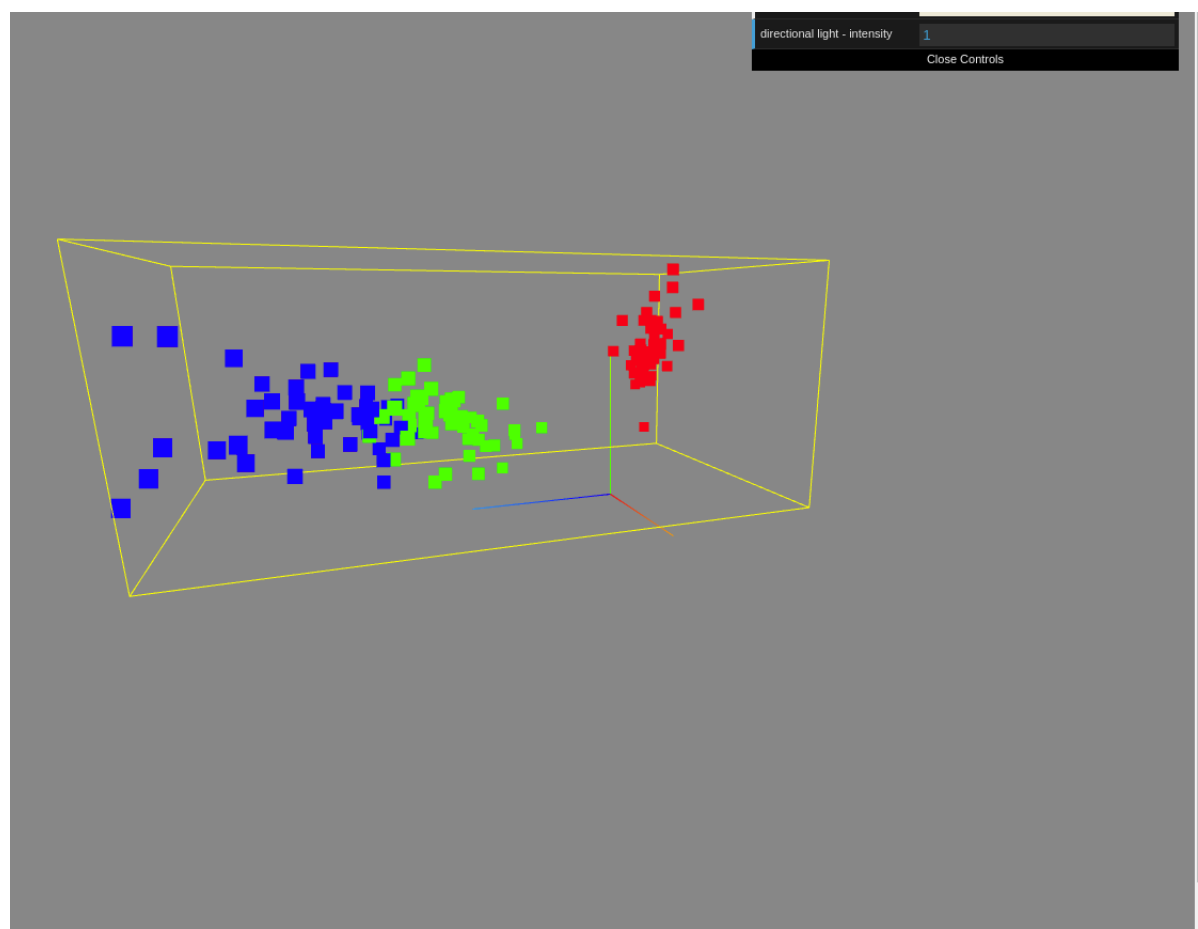


Abbildung 3: Box and axes

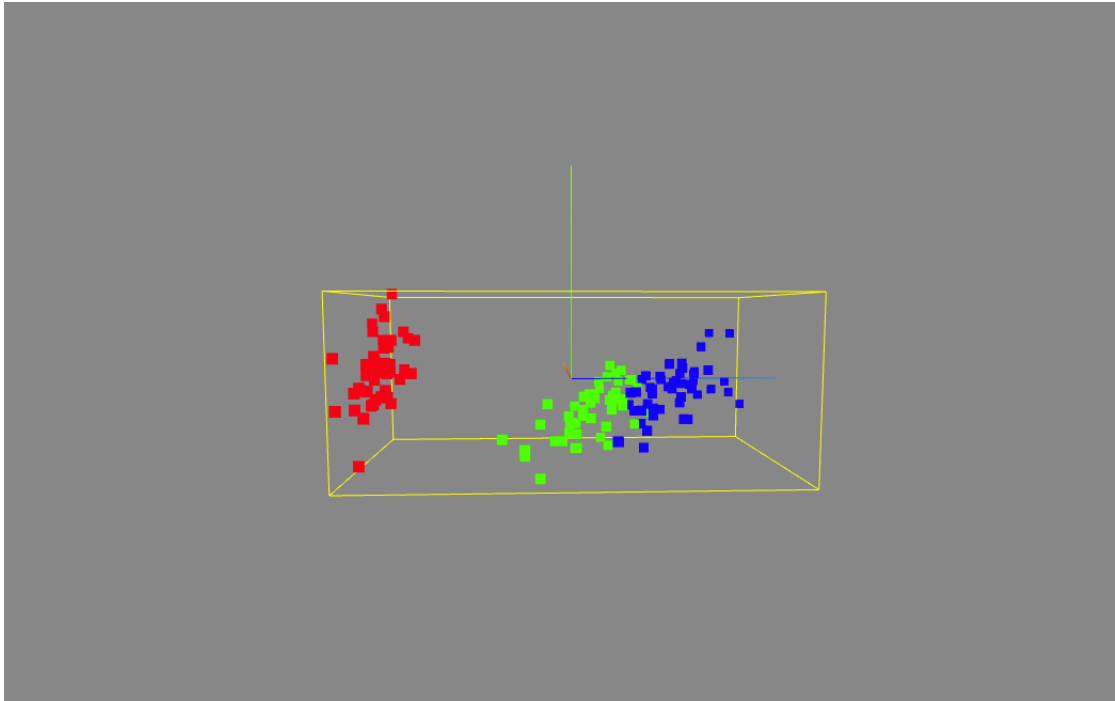


Abbildung 4: Center

**Aufgabe 3.1:**

- a) Curvilinear grid (structured)
- b) Unstructured grid

## Aufgabe 3.2:

R Script:

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```
data1 <- read.csv('/assignment5/A5_exercise_3.2_data/Data1.csv', sep = ";")
data2 <- read.csv('/assignment5/A5_exercise_3.2_data/Data2.csv', sep = ";")
data3 <- read.csv('/assignment5/A5_exercise_3.2_data/Data3.csv', sep = ";")
data4 <- read.csv('/assignment5/A5_exercise_3.2_data/Data4.csv', sep = ";")

dataSets <- c(data1, data2, data3, data4)

for (i in 1:4) {
  dx <- dataSets[[i*2 -1]]
  dy <- dataSets[[i*2]]

  m <- mean(dy)
  v <- var(dy)
  c <- cor(dx,dy,method="spearman")

  cat(paste0("Statistical properties from data ", i,":\n",
            "Mean: ", m, "\n",
            "Variance: ", v, "\n",
            "Correlation: ", c, "\n\n"))

  plot(dx,dy, col='blue', pch=19, main=paste0("Data ", i))
  abline(lm(dy~dx), col='red')
}
```

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Ausgabe:

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```
Statistical properties from data 1:
Mean: 7.50090909090909
Variance: 4.12726909090909
Correlation: 0.818181818181818

Statistical properties from data 2:
Mean: 7.50090909090909
Variance: 4.12762909090909
Correlation: 0.690909090909091

Statistical properties from data 3:
Mean: 7.5
Variance: 4.12262
Correlation: 0.990909090909091

Statistical properties from data 4:
Mean: 7.50090909090909
Variance: 4.12324909090909
Correlation: 0.5
```

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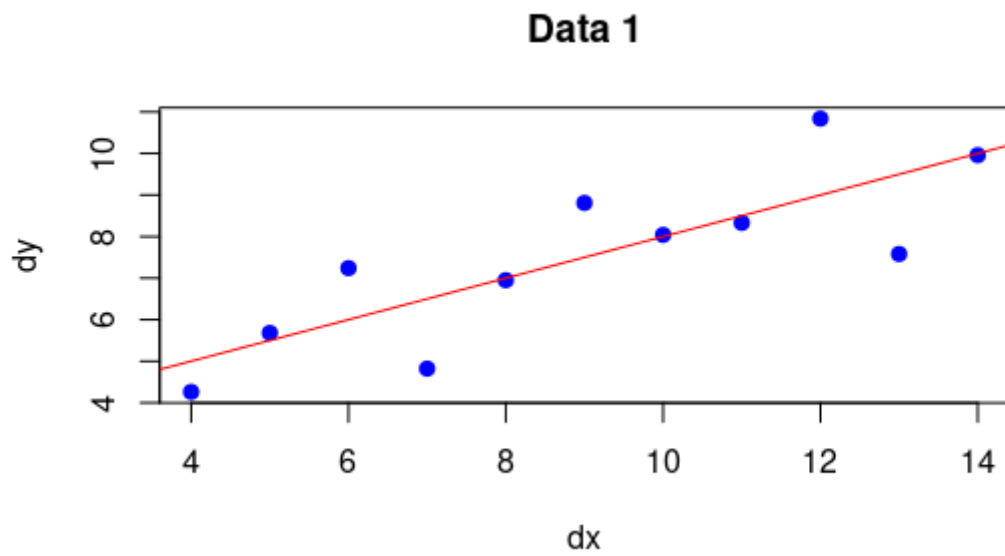


Abbildung 5: Data 1

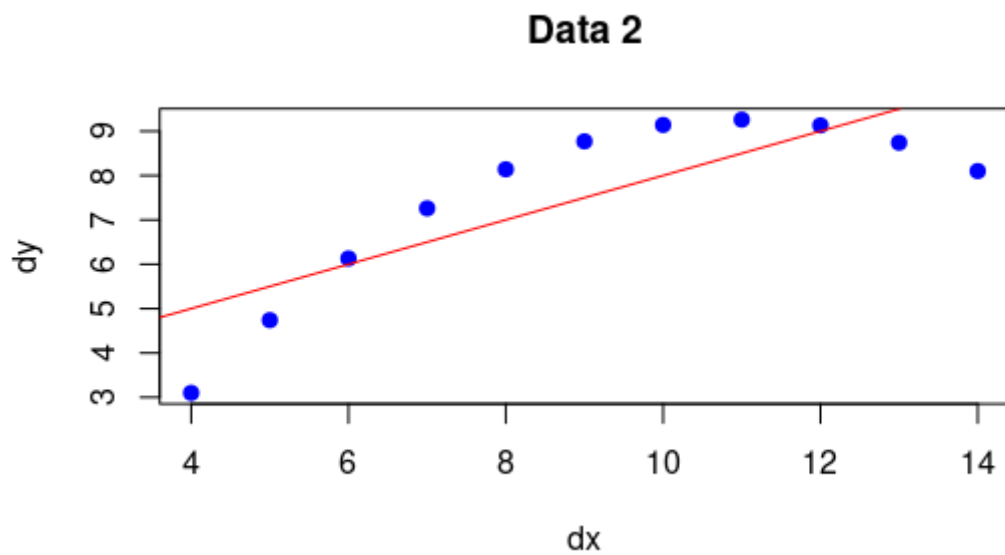


Abbildung 6: Data 2

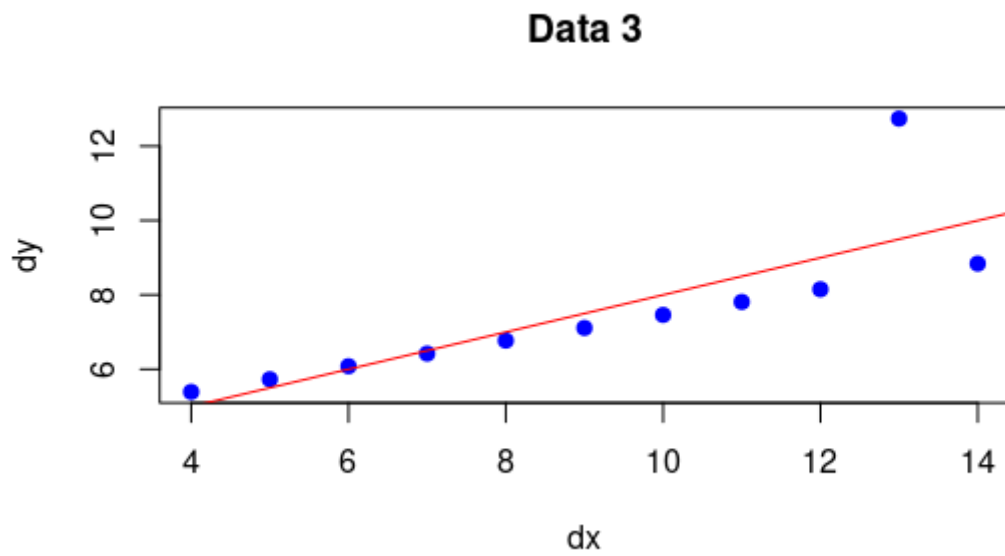


Abbildung 7: Data 3

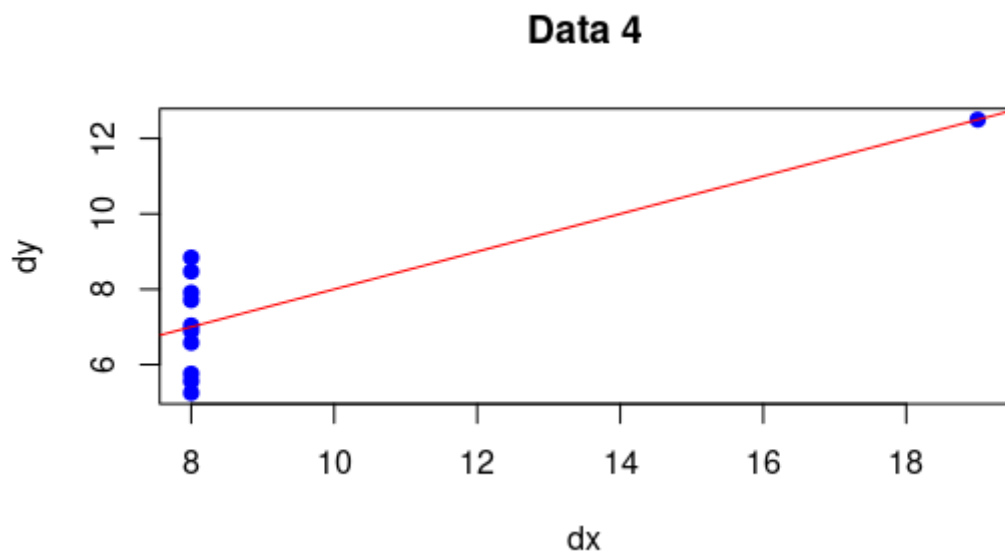


Abbildung 8: Data 4