

UBD Beamer Theme using RMarkdown

An example presentation document with R code

Haziq Jamil

Mathematical Sciences, Faculty of Science, UBD

<https://haziqj.ml>

November 30, 2022

Overview

Introduction

Features

- Lists

- Blocks

- Quotes

- Columns

- Colour palette

- Mathematics

- Citations

- Using R

Conclusion

Introduction

The UBD Beamer Theme is a modern and minimal theme designed for getting information across in a clean and uncluttered manner.

This theme is based on the Saarland Beamer Theme, with its logos and fonts changed, and colour scheme adapted to UBD's pastel-ised colour scheme.

Introduction

Features

Lists

Blocks

Quotes

Columns

Colour palette

Mathematics

Citations

Using R

Conclusion

Slide full of lists

Universiti Brunei Darussalam (UBD; translation University of Brunei Darussalam; Jawi: *يونيفرسيتي بروني دارالسلام*) is the first university in Brunei.

- UBD in figures
 - **Established:** 1985
 - **Medium of instruction:** English
 - **Academic faculties:** 9
 - **Research Institutes:** 7
 - **Student enrolment:** 3,137 (in 2015, approx.)
- History
 - **1985:** UBD established, first campus in Gadong
 - **1995:** UBD moved to Tungku Link
 - **2009:** Introduction of GenNEXT Programme
 - **2011:** Commencement of the first Discovery Year programme
- Credits: <https://ubd.edu.bn/> and Wikipedia

Blocks

Standard Block

This is a standard block using the `block` environment.

Example Block

This is an example block using the `exampleblock` environment.

Alert Block

This is an alert block using the `alertblock` environment.

Alternative Block

This is an alternatively-coloured block using the `altblock` environment.

Quotation

Archimedes will be remembered when Aeschylus is forgotten, because languages die and mathematical ideas do not. “Immortality” may be a silly word, but probably a mathematician has the best chance of whatever it may mean.

— G. H. Hardy in *A Mathematician's Apology*, 1941

Two columns

We can also add two columns in the slides.

This is the first column. In this column, we can also add a block for instance.

Block

I am a block in a column.

- In this column,
- we just add the
- bullet points.

Colour palette

- Blues: `ubdblue` a.k.a. Dark Cornflower Blue (`#325494`)
- Teals: `ubdteal` a.k.a. Upsdell Red (`#B10F2E`)
- Yellows: `ubdyellow` a.k.a. Maize Crayola Red (`#F5C946`)
- Alerted text: `ubdred` a.k.a. Upsdell Red (`#B10F2E`)
- Normal text: `ubdblack` a.k.a. Dark Sienna (`#230C0F`)
- Grays: `gray` a.k.a. Spanish Gray (`#999999`)

Let $X \sim \text{Pois}(\lambda)$. The probability mass function of X is given by

$$\Pr(X = x) = \frac{e^{-\lambda} \lambda^x}{x!}. \quad (1)$$

Using the pmf given in (1), we can derive the moment generating function for X to be:

$$\begin{aligned} M_X(t) &= \sum_{k=0}^{\infty} e^{tx} \cdot \frac{e^{-\lambda} \lambda^x}{x!} \\ &= e^{-\lambda} \sum_{k=0}^{\infty} \frac{(\lambda e^t)^x}{x!} \\ &= e^{-\lambda} e^{\lambda e^t} \\ &= \exp\{\lambda(e^t - 1)\}. \end{aligned}$$

Theorems et al.

Definition 1 (Prime numbers)

A prime number is a natural number greater than 1 that is not a product of two smaller natural numbers.

Theorem 2 (Infinitude of primes)

There are an infinite number of prime numbers.

Proof.

Suppose that there exist only a finite number of primes, p_1, \dots, p_n , say. The number

$$N = 1 + p_1 \cdots p_n$$

is divisible by some prime p . But p cannot be any of p_1, \dots, p_n , since the latter all leave remainder 1 on dividing N . This contradicts our assumption that p_1, \dots, p_n is the complete list of primes. ■

A maths example

Maths examples are continuously numbered (using the example environment).

Example 3 (Examples of prime numbers)

2, 3, 5, 7 and 11 are examples of prime numbers.

Example 4 (Examples of non-prime numbers)

Since $4 = 2 \times 2$, it is not a prime.

Citations

The importance of grounding one's self in elementary probability theory and mathematical statistics cannot be overstated. Here are some excellent fundamental textbooks every student of statistics should read: Casella and Berger (2002), Pawitan (2001), and Wasserman (2004).

It is highly suggested to use pandoc's way of generating bibliographies (see here) rather than using Biblatex. This footnote was created using the custom `\blfootnote{}` command.

Syntax highlighting

```
f <- function(x) {  
  # Check small prime  
  if (x > 10 || x < -10) {  
    stop("Input too big")  
  } else if (x %in% c(2, 3, 5, 7)) {  
    cat("Input is prime!\n")  
  } else if (x %% 2 == 0) {  
    cat("Input is even!\n")  
  } else if (x %% 2 == 1) {  
    cat("Input is odd!\n")  
  }  
}
```

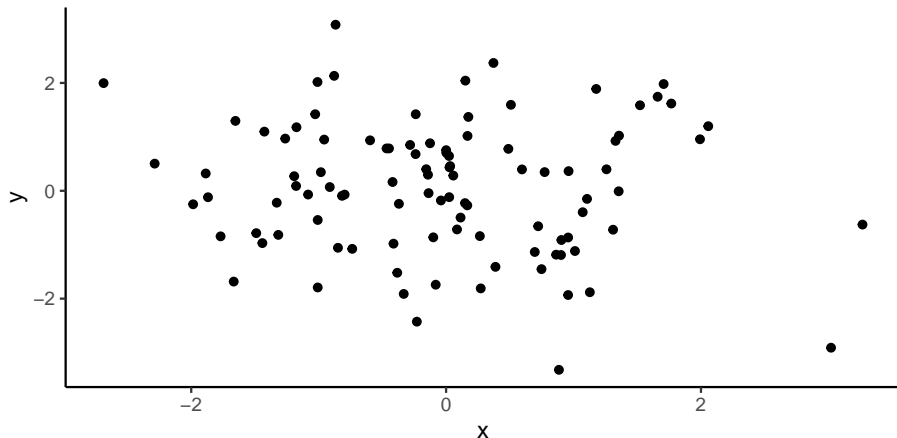
Slide with R Output

```
summary(cars)
```

##	speed	dist
##	Min. : 4.0	Min. : 2.00
##	1st Qu.:12.0	1st Qu.: 26.00
##	Median :15.0	Median : 36.00
##	Mean :15.4	Mean : 42.98
##	3rd Qu.:19.0	3rd Qu.: 56.00
##	Max. :25.0	Max. :120.00

Slide with Plot

```
ggplot(tibble(x = rnorm(100), y = rnorm(100)), aes(x, y)) +  
  geom_point()
```



Introduction

Features

Conclusion

Conclusion

To use this theme, download the `ubd_beamer_rmd.tex` file, `.sty` files, and image files (for the logo and banner) from <https://github.com/haziqj/ubd-beamer>, and place the files together with your `.Rmd` source file. Use the sample `slides_rmd.Rmd` as a guide.

End

Thank you!

References

- Casella, G. and R. L. Berger (2002). *Statistical Inference*. 2nd ed. Pacific Grove, CA: Duxbury. ISBN: 978-0-534-24312-8.
- Pawitan, Y. (2001). *In All Likelihood*. Statistical Modelling and Inference Using Likelihood. Oxford University Press. ISBN: 978-0-19-850765-9.
- Wasserman, L. (2004). *All of Statistics. A Concise Course in Statistical Inference*. New York: Springer-Verlag. ISBN: 978-0-387-40272-7. DOI: 10.1007/978-0-387-21736-9.