BACHELOR CAFÉ

WEB DEVELOPMENT

ERHVERVSAKADEMI AARHUS
BUSINESS ACADEMY AARHUS

PURPOSE

Get to know all formal requirements for the bachelor project.

Give you some basic tips and tricks on how to work with your bachelor project.

Group talk with your supervisor and fellow students.

AGENDA

14.00 - 14.30

General information about the bachelor project

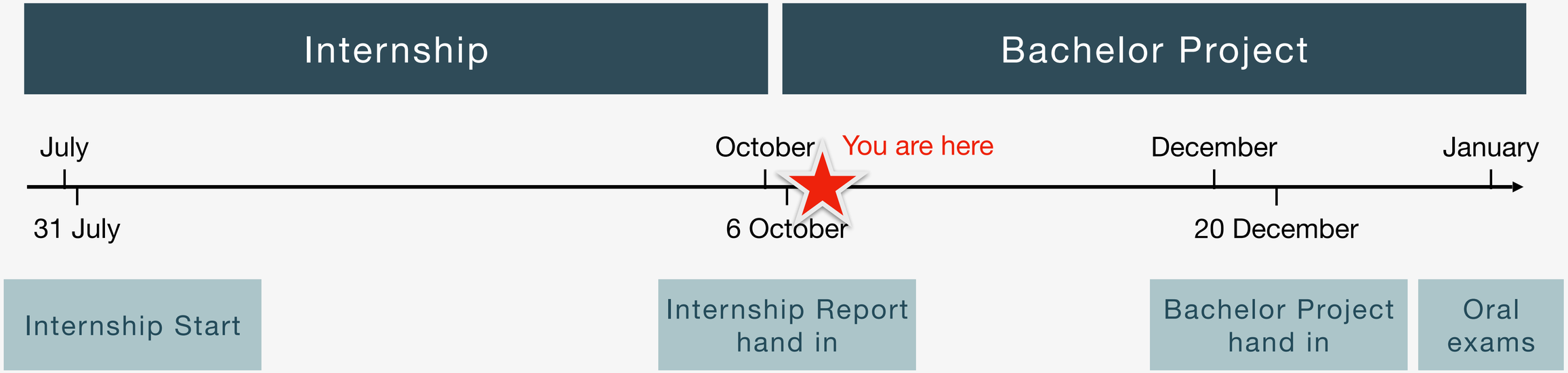
Questions

14.30 - 15.30

Group talks with supervisor & fellow students

SEMESTER FLOW

3RD SEMESTER



PREREQUISITES

You must pass all courses, including the internship, before you can hand in your bachelor paper and get it approved.

BACHELOR PROJECT

“In the Bachelor project, the students must demonstrate the ability, in an analytical and methodical basis, to be able to process a complex and practice-orientated problem statement in relation to a specific task within the web development sector.

The problem statement that must be central to the programme and profession, is formulated by the student, possibly in collaboration with a private or public company. The educational institution approves the problem statement.”

National Curriculum - page 7-8

BACHELOR PROJECT

- Use analytical and methodical skills to research new problems.
- Dive into a topic related to any course from the programme.
- Work on a complex and practice–related problem in cooperation with a company or client.
- Demonstrate the ability to apply commonly recognized and approved theories and methods.

BACHELOR PROJECT

Your task is not just to describe your process and your product but to argue — on an analytical and methodical foundation — why you have done what you have done.

ARE YOU HIREABLE?

If you imagine tossing the final report on the desk of a hiring manager and they conclude "Wow, we need to hire this person directly out of school as our new tech lead", then you're on the right track 😉

IN ESSENCE

Throw yourself at a project that will activate as many as possible of your web development skills.

Describe it in a report using applicable theories and methods and a structured approach to the project.

LIVE UP TO YOUR TITLE

Remember that you'll very soon enter the world as a *Bachelor of Web Development*.

Your report should reflect a level of knowledge and competency worthy of that title.

IT'S MORE ABOUT PROCESS THAN PRODUCT

Obviously building a succesful prototype is good.

But taking chances and exploring new territory is even better.

You might end up hitting a wall or a dead-end, but if your process is sound and you've made well-argued choices along the way, you can still turn that into a really good report.

HOW TO WRITE A BETTER PAPER

Maximize text where you:

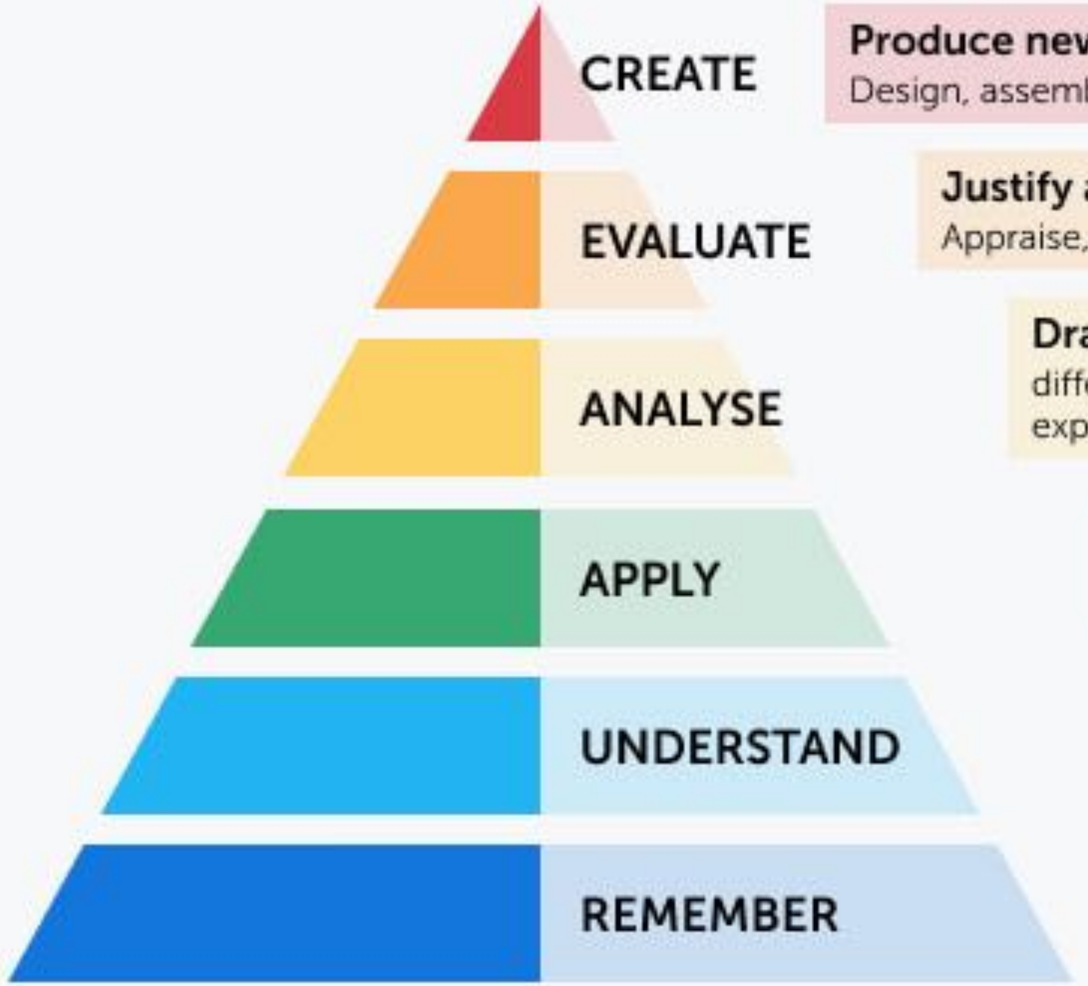
- select and substantiate choices
- use other's concepts, models/ theories for your own purposes
- analyze, interpret — specific material is a good thing
- discuss
- combine, compare, conclude
- evaluate other's/your own text

Minimize text where you:

- describe
- paraphrase
- summarize

Rienecker, L. and Jørgensen, P.S., 2013. *The Good Paper*. Copenhagen: Samfundslitteratur. Page 48.

Bloom's Taxonomy



Produce new or original work
Design, assemble, construct, conjecture, develop, formulate, author, investigate

Justify a stand or decision
Appraise, argue, defend, judge, select, support, value, critique, weigh

Draw connections among ideas
differentiate, organise, relate, compare, contrast, distinguish, examine, expertiment, question, test

Use information in new situation
Execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

Explain ideas or concepts
Classify, discribe, discuss, explain, identify, locate, recognize, report, select, translate

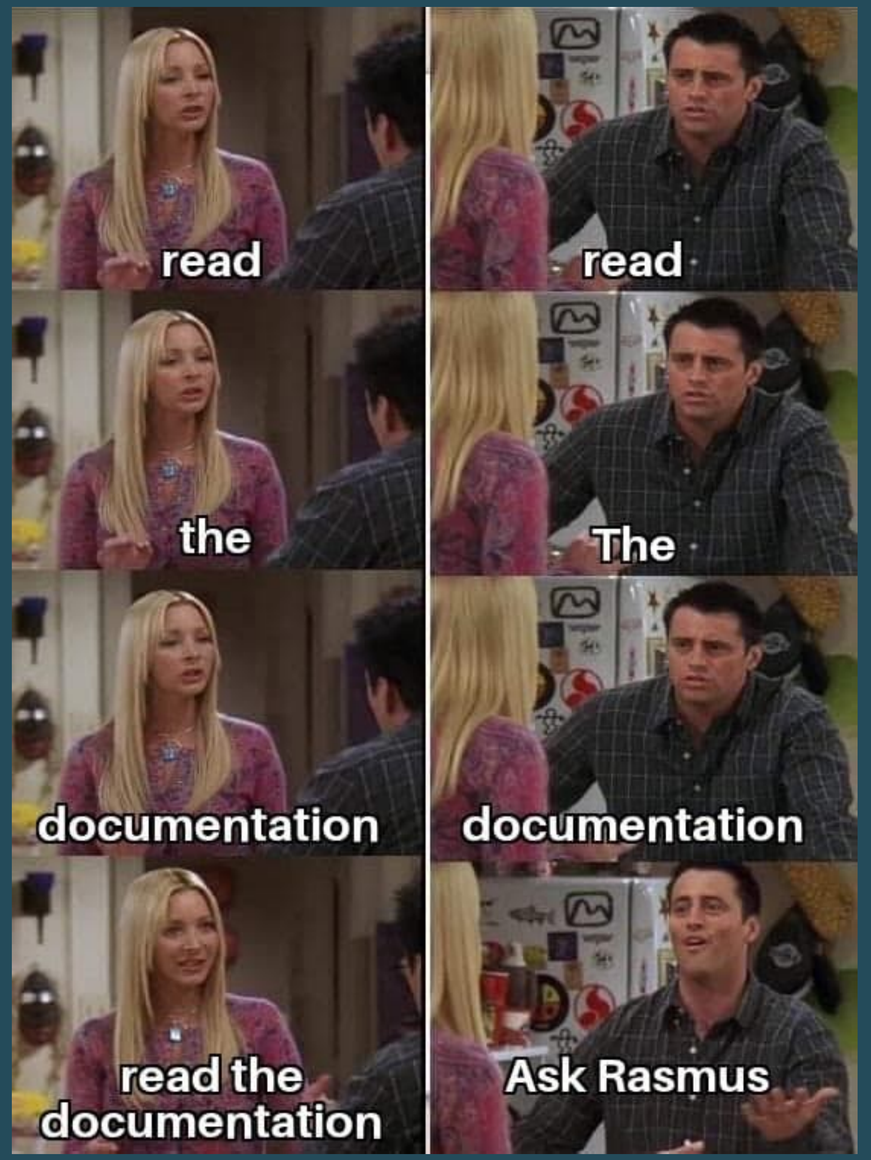
Recall facts and basic concepts
define duplicate, list, memorise, repeat, state

Bloom's taxonomy, revised by Krathwohl and Anderson, 2001
https://www.valamis.com/hub/blooms-taxonomy

READ THE CURRICULUM

The Bachelor Project must cover the learning objectives.

National Part
Institutional Part



Side 3 i den nationale studieordning:

1. Uddannelsens mål for læringsudbytte

Viden

Den uddannede har udviklingsbaseret viden om:

- standarder indenfor webudvikling
- udviklingsmiljøer til webudvikling,
- udbredte udviklingsmetoder inden for webudvikling samt kan reflektere over deres anvendelse i professionens praksis

Den studerende har forståelse for:

- webapplikationers rolle i samfundet

Færdigheder

Den uddannede kan:

- anvende metoder og redskaber indenfor webudvikling til at planlægge og udvikle applikationer baseret på konkrete udviklingsønsker,
- mestre et egnet programmeringssprog til gennemførelse af udviklingsønsker,
- vurdere og begrunde valg af egnet system til sikring af både data- og applikationspersistens,

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- mestre et egnet programmeringssprog til gennemførelse af udviklingsønsker,
- vurdere og begrunde valg af egnet system til sikring af både data- og applikationspersistens,
- anvende domænets teori og metode til at udvikle brugeroplevelser tilpasset relevante målgrupper og vurdere brugeroplevelser begrundet i domænets teori og metode
- anvende metoder til udvikling af brugergrænseflader, der udnytter webteknoligernes særlige designmæssige og æstetiske muligheder, samt vurdere og begrunde deres værdi som løsning
- anvende og mestre et egnet udviklingsmiljø i gennemførelse af udviklingsprocessen.
- formidle praksisnære og faglige problemstillinger og løsningsmodeller til samarbejdspartnere og brugere, såvel fagfæller og ikke specialister

Kompetencer

Den uddannede kan:

- håndtere komplekse og udviklingsorienterede situationer indenfor webudvikling,

Færdigheder

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Kompetencer

Den uddannede kan:

- håndtere komplekse og udviklingsorienterede situationer indenfor webudvikling,
- selvstændigt indgå i fagligt og tværfagligt samarbejde Indenfor webudvikling med en professionel tilgang og påtage sig ansvar inden for rammerne af en professionel etik.
- identificere og strukturere egne læringsbehov og udvikle egne færdigheder og kompetencer i relation til webudvikling.

LEARNING FOCUS

DESIGN & CONSTRUCTION OF WEB APPLICATIONS

USER INTERFACE DESIGN & USER EXPERIENCE (UI/UX)

OBJECT-ORIENTED PROGRAMMING & DATABASES

DEV ENVIRONMENTS

PRODUCT?

Do we need a product? Design?

Prototype? Coded solution?

This is Web Development, right?

Why is it even a question?

You should develop some kind of product or prototype. Your project might be:

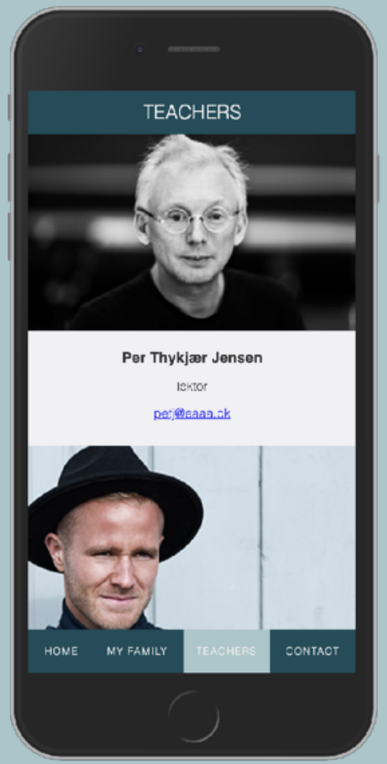
- An app or website programmed by you.
- A set of recommendations for redesigning a website.
- A re-design for optimizing conversion rate.
- An optimized website for increased performance.
- A new or improved technical workflow for a company.
- A proof of concept demonstrating application of theory to a real-world problem.

WEB DEVELOPMENT

FRONTEND

API

BACKEND

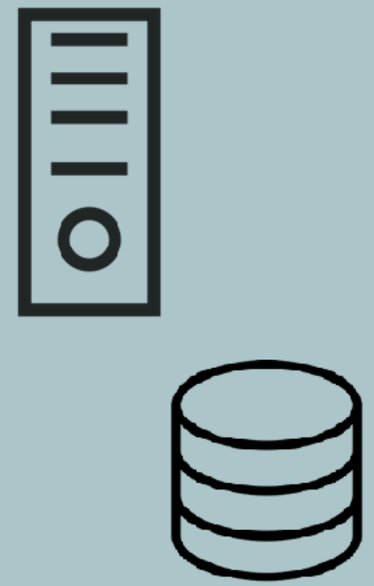


FETCH(...)

REQUEST

DATA

RESPONSE



The project report must not exceed 30 standard pages (+10 pages per extra student in a group).

Cover page, TOC, bibliography and appendices are not included in the page count.

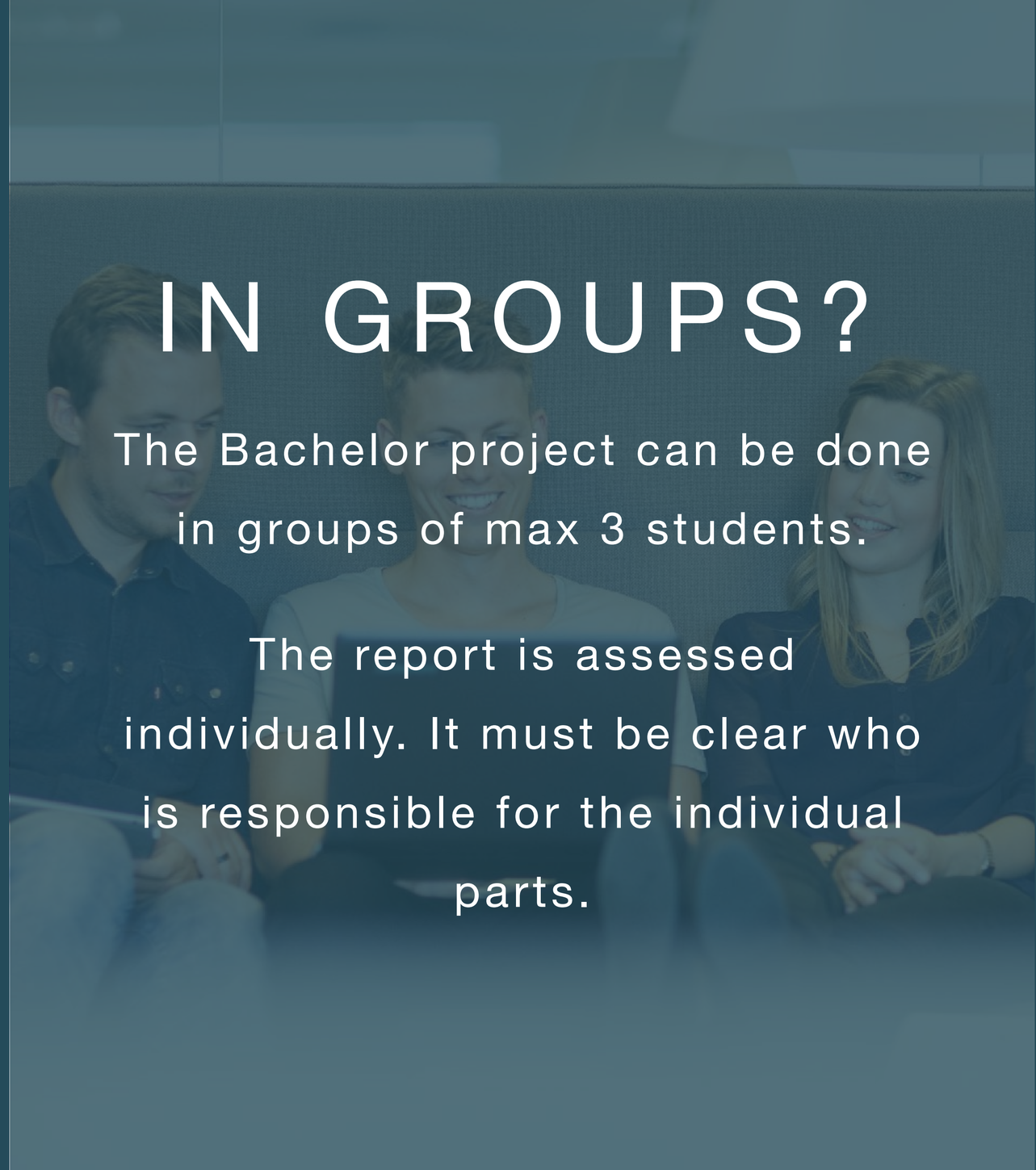
A standard page: 2400 characters incl. spaces.

```
const reportLength = ((groupSize - 1) * 10) + 30;
```

1 STUDENT: 30 PAGES

2 STUDENTS: 40 PAGES

3 STUDENTS: 50 PAGES



IN GROUPS?

The Bachelor project can be done in groups of max 3 students.

The report is assessed individually. It must be clear who is responsible for the individual parts.

3.9 Bachelorprojekt - 15 ECTS

Læringsmål for prøven

Læringsmålene for bachelorprojektet fremgår af studieordningens nationale del.

Prøveform og tilrettelæggelse

Prøven er en individuel mundtlig prøve med udgangspunkt i et digitalt projekt udarbejdet individuelt eller i en gruppe af op til 3 studerende. Prøven i bachelorprojektet består af et digitalt produkt, en rapport samt en mundtlig del.

Formkrav til det skriftlige produkt

- Rapport på max 30 normalsider plus max 10 normalsider pr. ekstra gruppemedlem (dvs. en gruppe på 3 afleverer maksimalt 50 sider). Forside, indholdsfortegnelse, bilag og litteraturliste tæller ikke med i sidantallet.
- Bilag er uden for bedømmelse

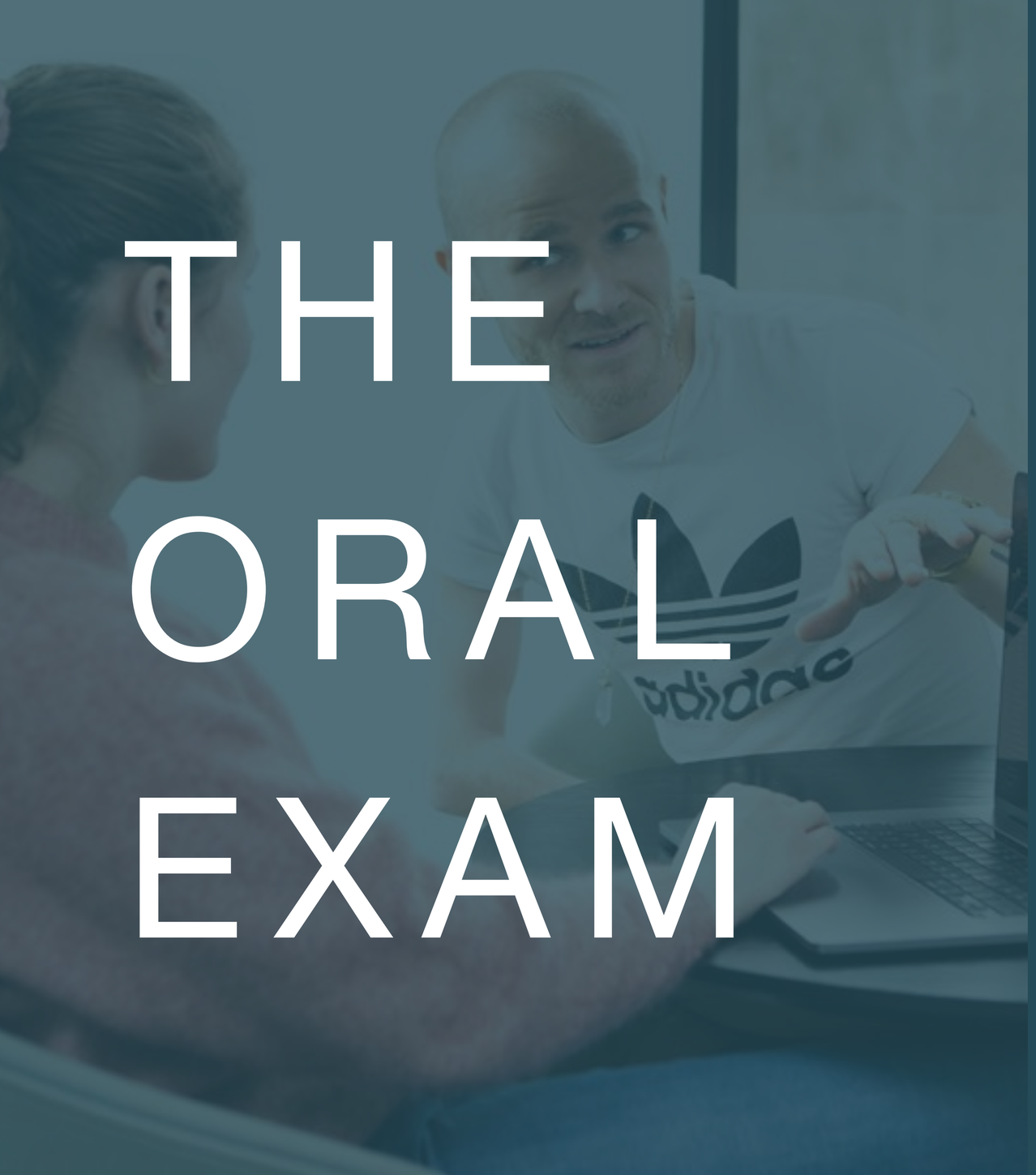
Den mundtlige prøve:

Individuel, mundtlig eksamination med udgangspunkt i det afleverede bachelorprojekt samt et mundtligt oplæg. Den mundtlige prøve har et omfang af:

Ved 1 studerende:

- Oplæg fra den studerende: 10 min.
- Eksamensdialog: 20 min.
- Votering og afgivelse af karakter: 10 min.

https://www.eaaa.dk/videregaende-uddannelser/professionsbachelor-som-overbygning/webudvikling/studieordning/



THE ORAL EXAM

1. Individual presentation
   approx. 10 minutes
2. Examination dialogue
   approx. 20 minutes
3. Grade and feedback
   10 minutes

A combined grade (7-point scale) is given for the written project, the product and the oral presentation/examination.

If you work in groups the entire report is the basis for the oral exam.

THE PAPER

Suggested disposition — but organize it however makes sense to your project

- INTRODUCTION
- METHODOLOGY
- RESEARCH
- ANALYSIS
- SOLUTION PROPOSALS
- DISCUSSION
- PERSPECTIVES
- CONCLUSION

THE PAPER

Cover page with title and name

Table of contents: the disposition of your paper (start here)

Introduction: The problem statement, its context, your motivation and the reason the problems needs solving.

Methodology: Your approach to solving the problem.

Research: Knowledge that you gather in order to solve the problem. Can be both literature research or empirical research.

Analysis: Your analysis of the context and problem (maybe also theory). Can focus on user group, data structure, tech stack, workflow etc.

Solution proposals: Your application of theory and new knowledge to the problem i.e., your solution.

Discussion: Debate the relevance of each part of the solution.

Perspectives: Possible mistakes you made, other paths you might have taken, ideas for future enhancements and relevant secondary discussions of a more general nature.

Conclusion: Answer nothing else but your problem statement

Reference list/bibliography: List all sources that you referred to

Appendix (only including appendices that are central)

TIPS & TRICKS

- Use the Harvard Standard for reference and citation: libweb.anglia.ac.uk/referencing/harvard
- Make your report readable: use meta communication (explain the what, how and why of what you are doing), use a good, readable font and don’t overfill pages.
- Use spell check and get someone else to proofread.
- Remember your audience – write for them.
- Provide clarity – clear headings and sections.
- Structure, structure, structure and be consistent!
- Remember to add page numbers.
- Include your name in the paper.

PROBLEM STATEMENT

WHY - WHAT - HOW

“The problem statement that must be central to the programme and profession, is formulated by the student, possibly in collaboration with a private or public company. The educational institution approves the problem statement.”

National Curriculum - page 7-8

WHY?

Initial wondering: Why is it that... How can it be that...
Argumentation: Why is this relevant... Why is this a problem...?
Hypothesis: I have an idea that... Could it be that...

WHAT?

Problem statement: The core of the project.
Ask a good question: What - How - Which - Why?
Delimitation & scope: Expectations for this project.
Product - features, prototype, full-featured product?

HOW?

Methods and theories used to solve the problem.
How will you gather relevant data - and why?
Decision-making - Which technology to use?
How will you apply technologies to solve the problem?

Examples on Canvas

LITERATURE USE

Websites are not enough.

Demonstrate that you are able to choose valid and authoritative sources. Use books and articles from recognized sources.

Select your sources from academic work or very experienced practitioners. Write why your sources are valid.

Practice source criticism. The React team's own recommendation of React is not a valid, objective assessment of React.

And don’t refer to your lecturer’s slides. Refer directly to the original source.

Use The Source, Luke.

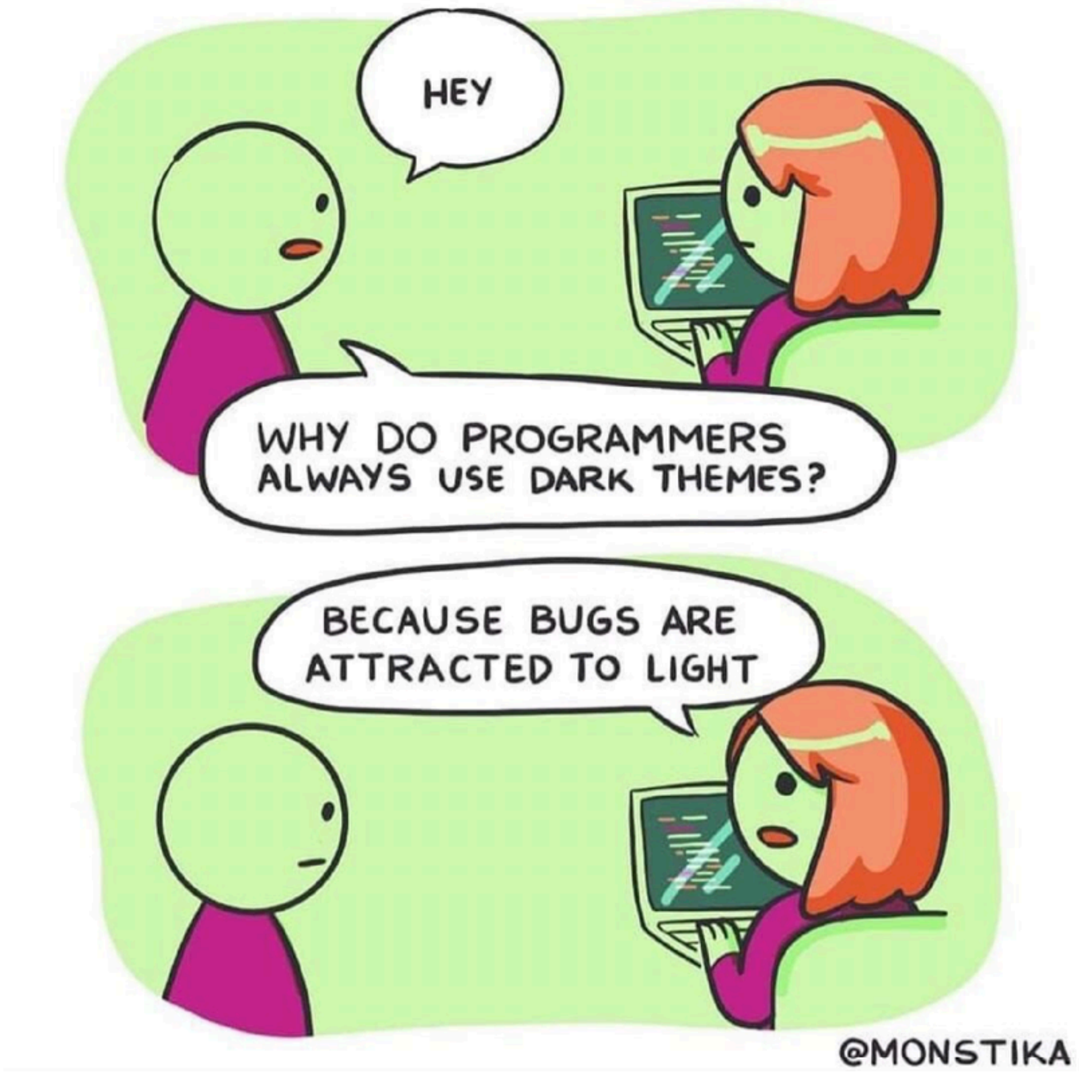
LITERATURE & MATERIAL

Borrow books:
- EAAAs library catalogue
- Bibliotek.dk

Articles:
- Bibliotek.dk article page
- Infomedia
- EAAAs library catalogue

Academic papers:
- EBSCO
- Google Scholar

Use the librarians at the EAAA library, they are there for you!



instagram.com/p/CbVxhgdMFQK/

WE OFTEN SEE THESE *BUGS*

Not fully understanding the problem.

Failing to break the problem down into sub-problems (I need to know more about this before I can make a decision).

Jumping to conclusions (“I chose this technology/solution because it worked for me before“).

Not acquiring a deep understanding of the requirements and making a detailed, well-argued plan before jumping into coding.

SUPERVISION

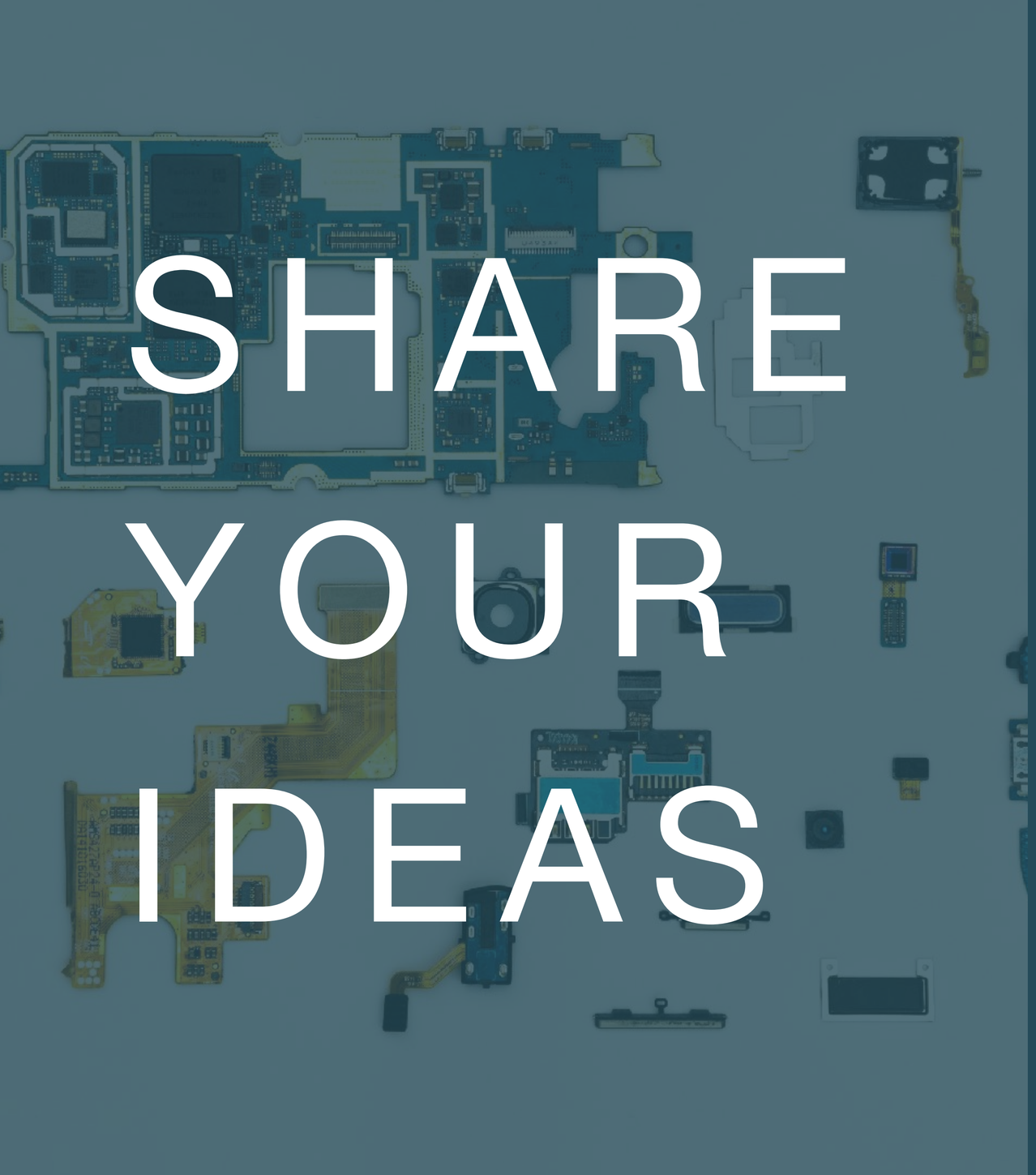
It’s your responsibility

Your supervisor for the internship is also your supervisor for the bachelor project.

Your supervisor will assess the bachelor project and will be the internal examiner at the oral exam.

IMPORTANT: Stay in touch with your supervisor! Help them help you.

QUESTIONS?



SHARE YOUR IDEAS

What’s your idea for the bachelor project?

Why do you find this theme interesting?

What would be the possible outcome? Improvements?

What are your initial thoughts about methodology, theories and project management?

GO FIND YOUR SUPERVISOR