

# IOB22

Digital Product  
Development



# Hello, World!

dpd-io@tudelft.nl

# House Keeping - Hybrid



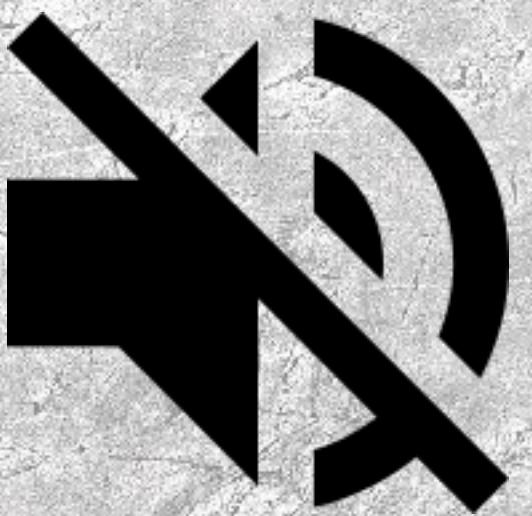
MS Teams events  
are recorded and  
made available



All interactions  
via MS Teams  
Cam & Mic



When  
not interacting



In the room  
speaker off  
at all time

# What's the plan for this session?

- You & Us
- What to learn & how?
- Break
- Interactive session: DPD Canvas

# A Warm Welcome from the Whole Team!



# All on Discourse!

- Everyone is on Discourse
- You can prompt the attention of anyone in the team with personal tags such as @jacky



**IOB22 Community**



**Course Feedback**



**Programming Assignments**



**Exercises**

# Answer on Discourse!

IOB22 > Getting Started



## About you

How do you rate the importance of digital knowledge and skills for designers?

What is your programming experience?

How do you feel about this course?

# Learning Objectives

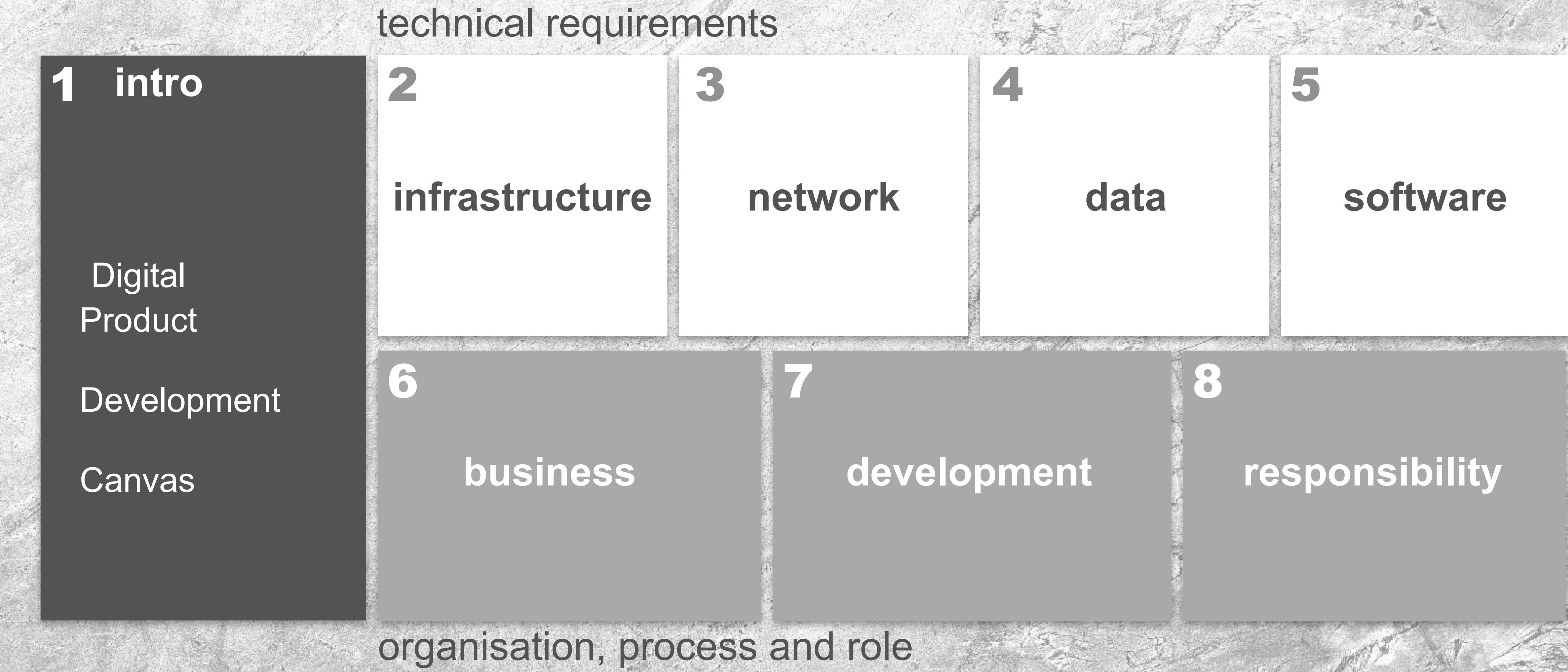
Digital Product Development  
IOB22

## What am I Going to Learn?

-  Explain
-  Specify
-  Develop
-  Analyse

# What's the Plan?

8 Weeks, 8 modules



# Weekly Rhythm

Welcome to Digital Product Development!

Here we are, a few days ahead of the new academic quarter and the start of IOB22, your course on Digital Product Development. I hope you are hungry for digital knowledge and skills! I want to share the following introductory video to give you a sneak preview of what to expect.

Announcements

Upcoming events

FEB 08:30  
7 Task 3: Sign up on Discourse - Due

**Brightspace > Activities**  
**Weekly suggested list of tasks**

## Modules Weeks

Introduction **Feb 7**

Infrastructure **Feb 14**

Network **Feb 21**

Data **Mar 28**

Software **Mar 7**

Business **Mar 14**

Development **Mar 21**

Responsibility **Mar 28**

x8

**Q3.1-8**

## Monday Morning

Watch Videos on Brightspace

Share thoughts, reactions, impressions and questions on Discourse



Get together with your group

Work on your exercise on Miro

Share your conclusions and reflections on Discourse

Formulate Quiz Questions

**4 hours, anytime during the week**

Watch Python Programming Introduction  
Practice through the Python assignment in Replit



Post & answer Python-related questions on Discourse



## Wednesday Afternoon

Attend programming sandpit driven by your questions



Take the quiz



Explore, react, interact on Discourse

Read book chapter on Brightspace



Attend the live feedback session  
Receive tips and tops



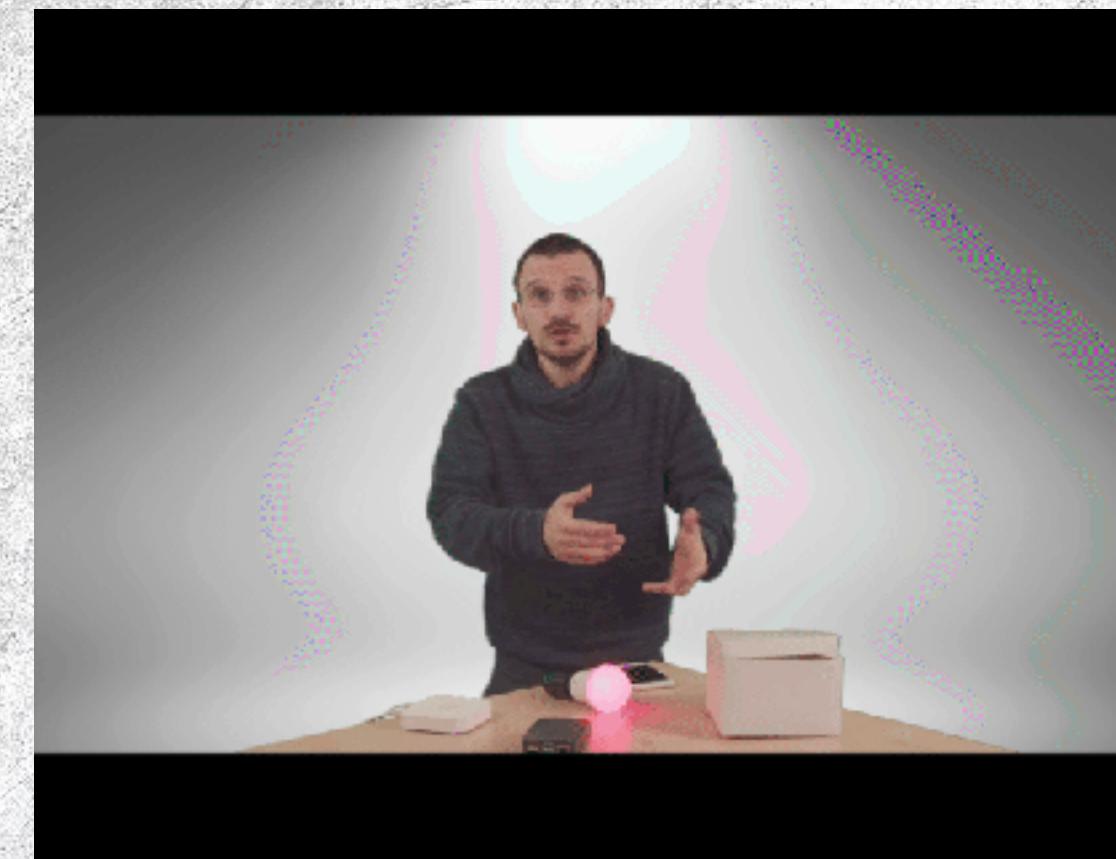
Discuss questions in break out rooms

**13:45**

**15:45**

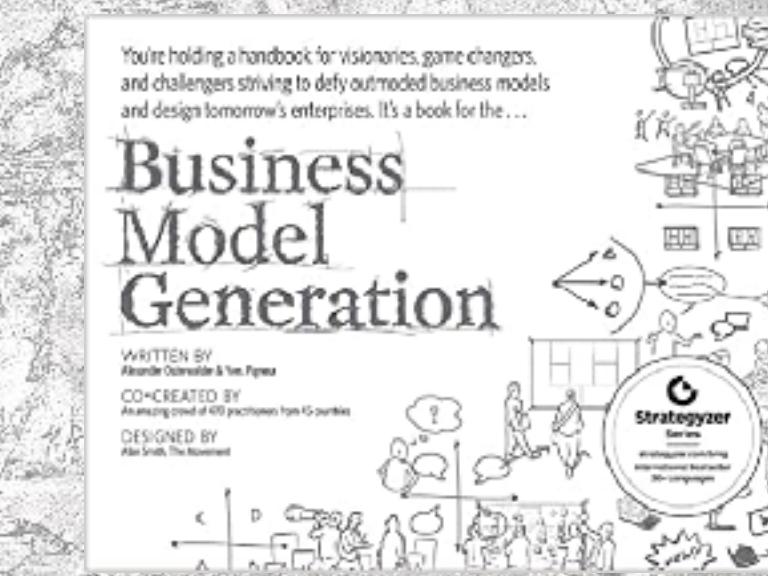
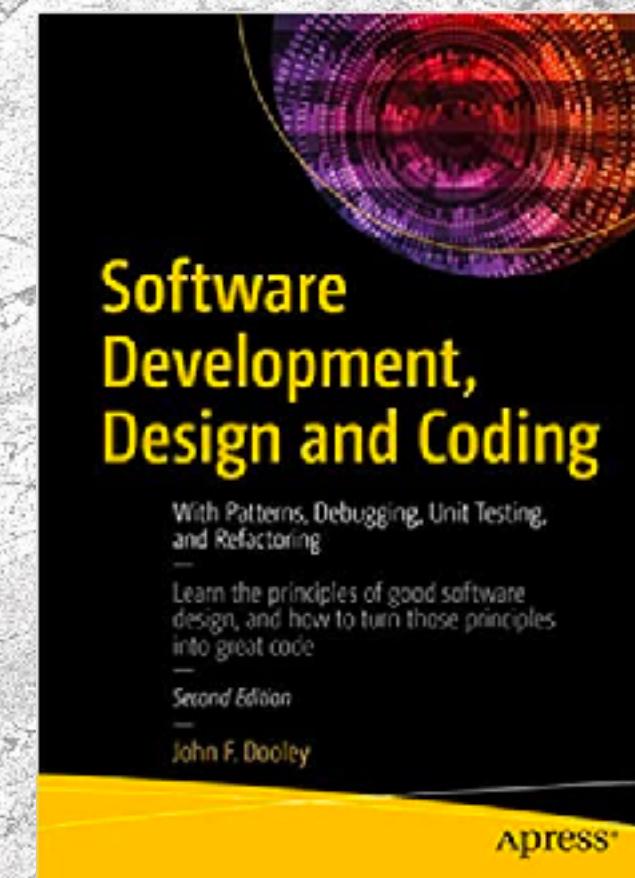
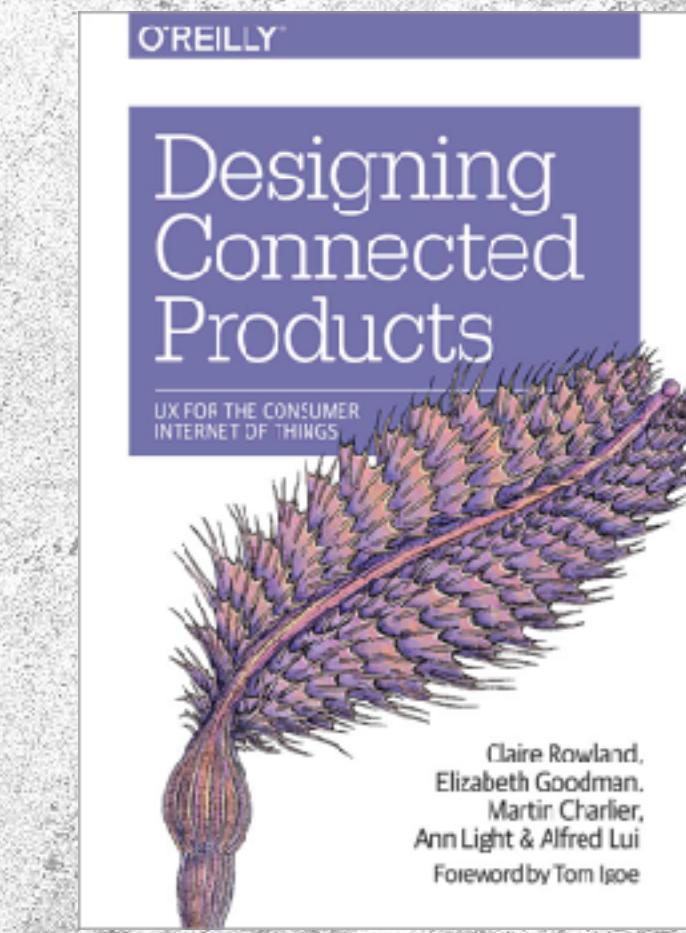


# Self-Study Material



Short Videos

Brightspace > Material  
All material per module



Book chapters

# Group Exercise

- **Monday Mornings 10:45 (2hrs)**
  - Get together with your group in studio 1-14 or group MS Team channel
  - Connect to Miro and create a new board with the exercise template
  - Complete the exercise
  - Post your conclusion, reflections and question on Discourse

The screenshot shows a Miro board titled "Exercise Module 1 - Draft". On the left, there's a vertical toolbar with icons for text, lists, shapes, and more. The main area features a blue template card for "Module 1: Introduction" with the sub-section "Getting familiar with the components of a digital product through the Digital Product Development Canvas". To the right of the card is a large text box containing instructions for the assignment. At the bottom right of the board, there's a small note: "WHAT'S IN IT FOR ME? THIS IS WHERE IT'S AT!"

In this first assignment, we propose you to start your journey through the Digital Product Development Canvas. You have received limited, broad knowledge about what are digital products and we would like you to develop further this knowledge on your own, together with the members of your group. Whether we design a digital or non digital product, first, we need to do our homework and investigate the targeted context. In this search, you will certainly encounter many concepts, technologies, mechanisms that you do not understand, many of them will be covered in the upcoming modules. Here you are making your first experience so that you can relate to it when you are provided with more knowledge.

**We give primarily feedback on your conclusion, reflection and questions posted on Discourse.**

# Python Programming Assignments

Self-study, 4hrs a week

5 assignments in total

Support on Discourse

Wednesdays 13:45  
Weekly programming sandpit



Home

Computational Thinking ^

Environment

01 Calculator

02 Vending Machine

03 eReader

04 Generative Art

05 COVID Dashboard

Data-Centric Design

Practice

Prototyping

Troubleshooting

Key Concepts

From Design to Computational Thinking with Python

TABLE OF CONTENTS

- 1 Introduction
- 2 Python Programming Assignments
- 3 What's next?

## Introduction

Welcome to this practical introduction to Computational Thinking for designers. As Industrial Design Engineers, you continuously train yourself to master Design Thinking. Through this process, you **empathise, define, ideate, prototype and test**. As digital technology becomes ubiquitous, it impacts your design solutions and design process.

Your products embed or rely on computers to realise some of their functionalities. Your prototype involves computers to test and analyse the feasibility of your solutions. Your data combines qualitative and quantitative material to understand the challenges to address appropriately. For each of these tasks, you need a proper understanding of how computers manipulate information and how you can teach computers what you want them to do.

Along with your Design Thinking, this series of Python programming assignments aims to get you acquainted with another complementary approach: Computational Thinking. Computational Thinking relies on four steps. First, we **decompose the problem** into smaller parts, breaking it down to identify precisely each component of the problem to solve. Then, we **look for patterns**, similarities that we can tackle the same way. Third, it leads us to **elaborate components** for our Design that we can reuse for a whole category of problems (generalisation) that we can reuse without looking inside (abstraction). Finally, we **design an algorithm**, instructions that tell the computer what to do.

By the end of this series of Python programming assignments, you should have the confidence to use the Computational Thinking approach to teach computers simple tasks to perform. In addition, you should be able to break down simple problems into plain English instructions. Finally, you should be able to autonomously search the Internet for the Python syntax that is not yet in your toolbox.

# Feedback Session

Interactive panel discussions

Reaction to your work on  
Discourse

Tips, Tops, Q&A, Polls

Examples of exam questions

*Hybrid: 65 students are randomly selected each week to attend in Joost van der Grinten*



# How do I get Graded?

- Online (Möbius), open-book exam on **April 13 (Wednesday, week 10)**
- Multiple-choice questions
- Fill in the blanks questions
- Programming questions

# No Other Grade?

- No other grade.
- All activities are formatives.
- **The teaching team** provide the structure
- **You** are in charge of your learning
- Ask questions and try out
- The more you engage in exercises and discussions, the more you gain feedback

# Attendance check

- Only today for closing the student list
- Sign the student list in the studios
- Add an ‘online’ note for your group member attending via the MS Teams group channel.
- Group entirely online: give me a nudge on MS Teams so that I can drop-in

# Contact

- Discourse for all content related matter
- For personal matter: [dpd-io@tudelft.nl](mailto:dpd-io@tudelft.nl)

# Discourse Moderators / Python Support

@iantiemann



@Floris\_de\_Groot



*Pssst ... they took this course last year,  
Ask them for tips!*

@SepehrTA



# What's next?

@sjoerdvandommelen

## Interactive Session

Discovering  
the Digital Product  
Development Canvas



@jacky

# Break

Get some fresh  
air!

10 minute break

