

# Habitat: Mess

PD203

Group **"Full deck"**

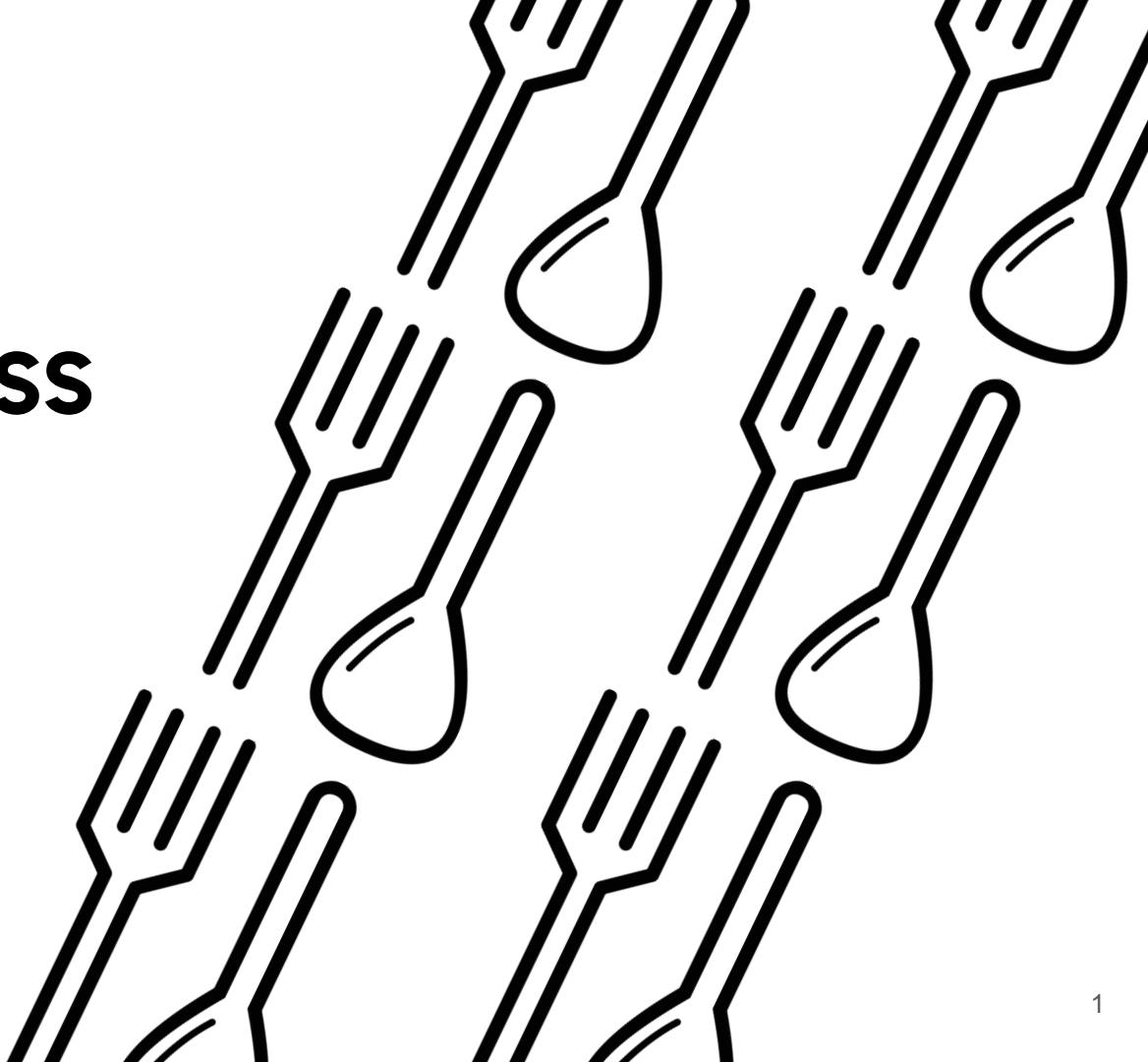
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# Contents

Recap

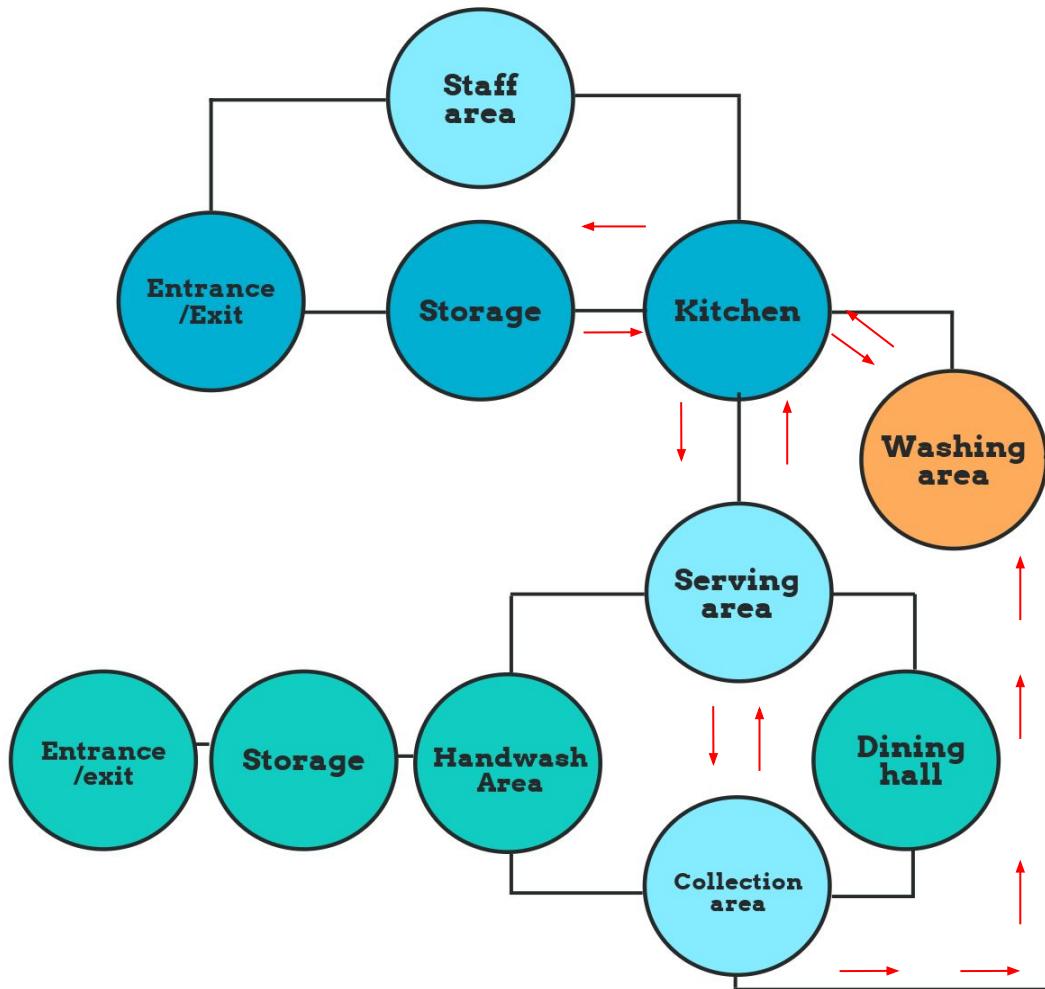
**Function structure**

**Brainstorming**

# O Recap

## Kitchen layout

# Function Structure



# 1 Function structure

## Existing vs Desired

# Current Process

Transfer utensils from cleaning area to kitchen on trolley

Start cooking in kitchen area

Transfer to vessels dedicated for serving area

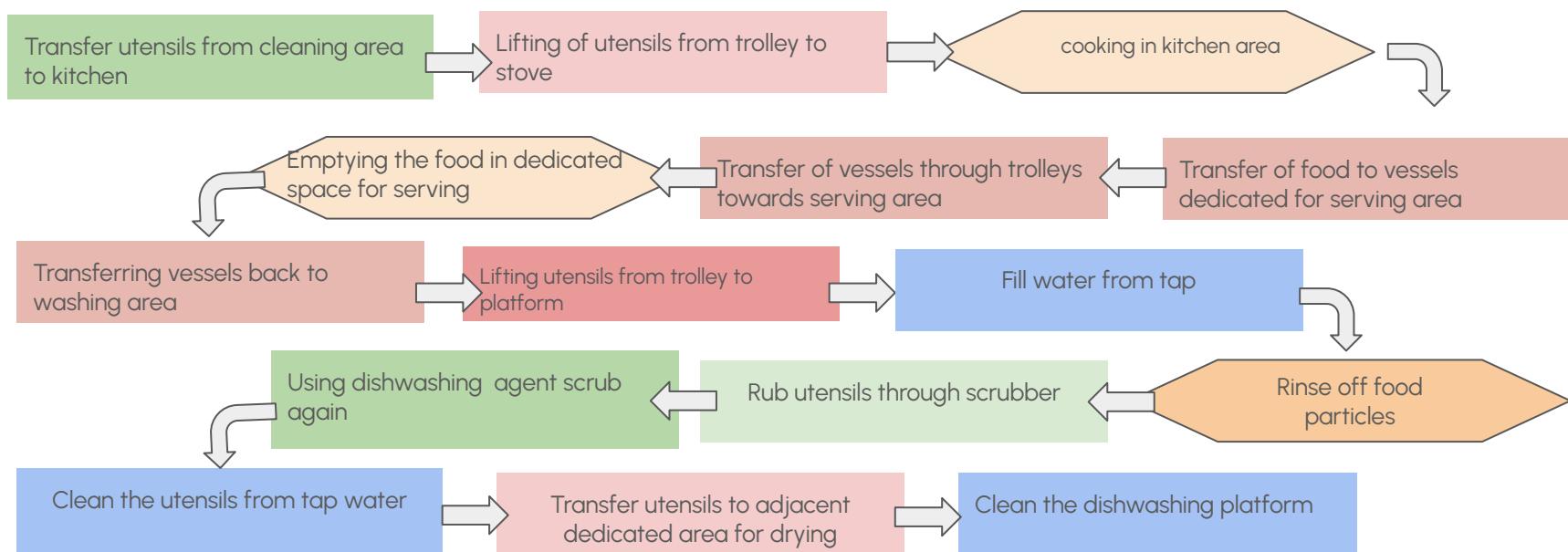
Transfer of vessels on trolleys towards serving area

Emptying the food in dedicated space for serving

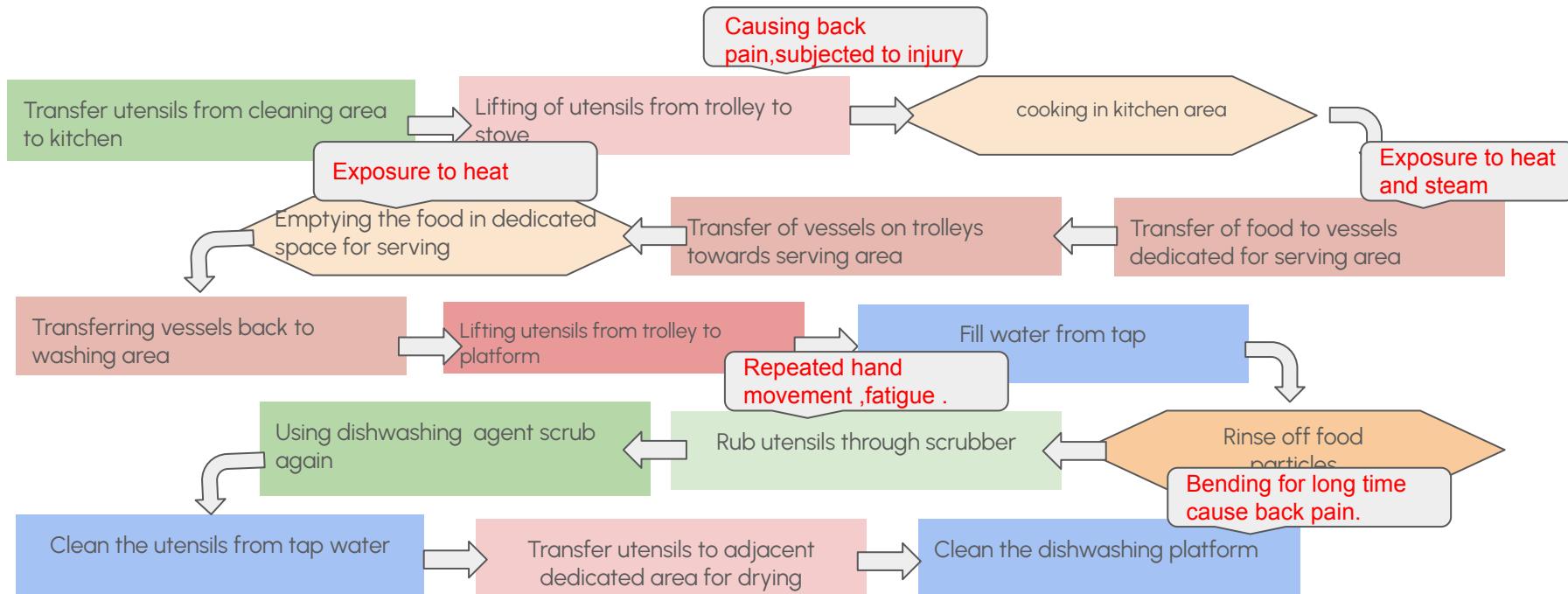
Transferring vessels back to washing area

Transfer of large and small utensils from trolley to washing platform

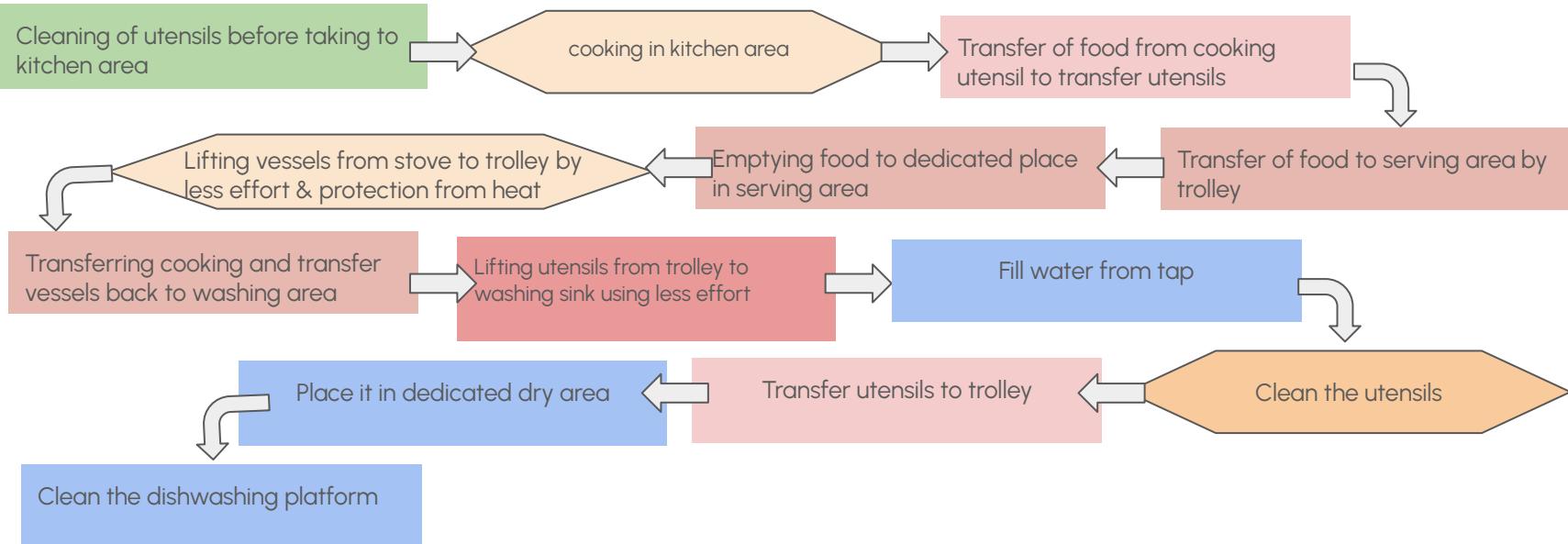
# Current Process Structure



# Current Process Structure



# Desired Process Structure



# 2 Brainstorming

To generate ideas

# Brainstorming session

## Scrubbing

can use hand gloves for scrubbing → use high speed water to clean the utensils → can use elevated sinks to place the utensils to clean

Use warm water

## Handling heat

using heat resistant gloves for lifting

insulated handles

exoskeleton to avoid direct contact

## Lifting

using hydraulic trolley → ergonomic design of handles → using conveyor belt

Height adjustable countertops

Collaborative lifting

heat resistant gloves

Height adjustable countertops

Use of Ramp or wedge to roll the utensils over them

Spring Mechanism

Roller Platform

robotic arm

## others

having covered area for washed utensils

redesigning cleaning area with bigger sinks

cleaning utensils right after use to easier removal of strain

## cleaning

using water with force

dedicated cleaning slots to place utensils

large stand to place utensils and wash

Automated dish washing system

Vibrate utensils to make food particles fall

Rotating brush systems

wind blow

Mechanical Scrubbing Devices

Rotating brush systems

# Brainstorming

- Adjustable level of trolley platform
- Match the level and sliding mechanism
- Fork lift
- Robotic arm to lift
- Conveyor belt instead of lifting
- Exoskeleton to aid weight transfer

Lifting and placing heavy vessels on the trolley

- Handles made of non-conducting materials and grips
- Wearing heat-resistant gloves
- Heat resistant nano-tech coating
- Wait for cooling
- Color-coded equipment
- Anti-slip mats to avoid accidents
- Robotic arm
- Longer handles/spatulas

Handling hot vessels

- Suit inspired from fire-fighting
- gears to cover face and arms
- lid that covers the whole vessel with steam management
- longer handles of ladle or tool to transfer
- steam deflecting
- steam redirecting trays

Protection from steam while transferring

Thank  
you.