



# Task Modelling

» Quote Lorem Ipsum.«

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# Introduction

A Model that allows you to dissect user's tasks in greater detail to understand what tasks and tools your users are performing to reach their goals:

To understand the underlying design and analyze potential limitations.

Or to indicate how activities should be performed in order to obtain a new usable system that is supported by some new technology

## Design Phases



## Introduction – Foundation

Empathize Phase: Data collected from users, targeted towards tasks —> guides design

Test Phase: To analyze and understand potential limitations —> guides evaluation

## Foundation: Models

- Explicitly capture and demonstrate knowledge about users, interactions, systems ,etc. with appropriate abstraction.
- Examples: user mental models, system models, task models



## Introduction – Foundation

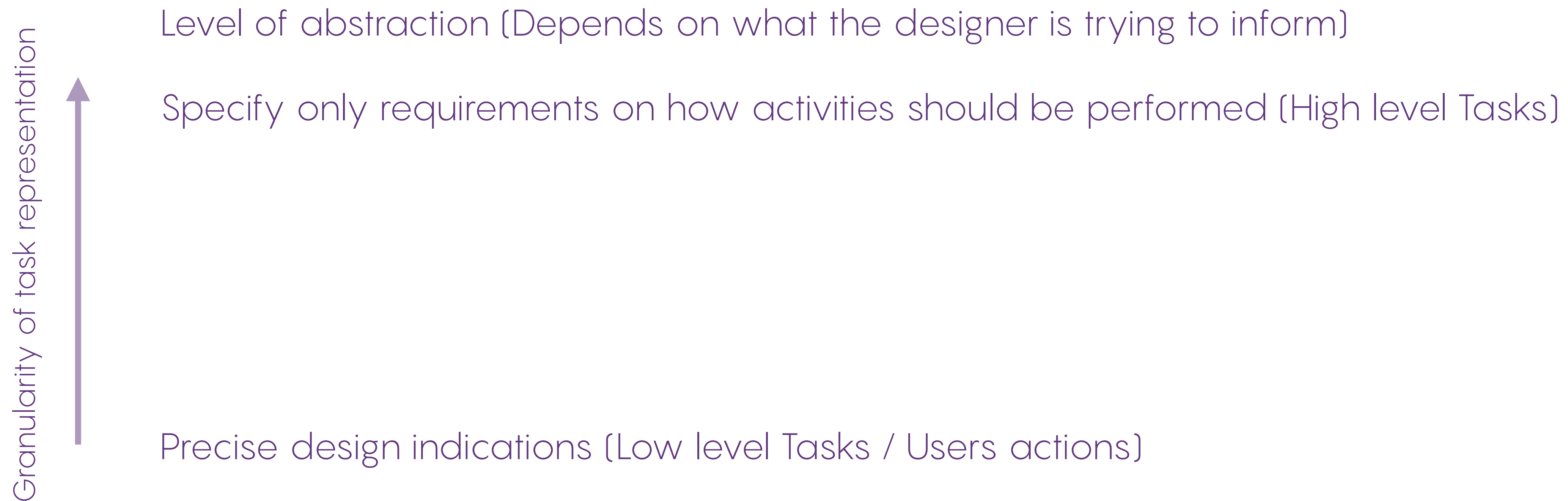
# Task Analysis

Before a task is modelled it has to be understood and analyzed

## Task

Set of user actions to achieve a desired goal

# Introduction – Representation Levels



# Task Analysis

## Many possible ways to analyze a task



Hierarchical Task Analysis

Cognitive Task Analysis

Parallel Analysis



For more complex interactions and relationships

Activity Theory

Cultural-Historical Activity Theory

# Task Modelling

## Many possible ways to analyze a task



### GOMS :

A set of Goals, a set of Operators, a set of Methods for achieving the goals, and a set of Selections rules for choosing among competing methods for goals

### Limitations:

- Does not consider user errors
- Does not consider the possibility of interruptions
- Considers only sequential tasks
- Inadequate for distributed applications

### Hierarchical Task Analysis (Breaking a goal into subtasks) e.g.:

Goal: satisfy hunger and indulge childhood snack sentimentality

- Subtask: select jelly flavor from vast array
- Subtask: stir oil into peanut butter without staining shirt
- Subtask: lightly toast bread for optimal texture experience
- Subtask: cover all corners of bread to the edges with peanut butter
- Subtask: cover all corners of bread to the edges with jelly



# Task Modelling

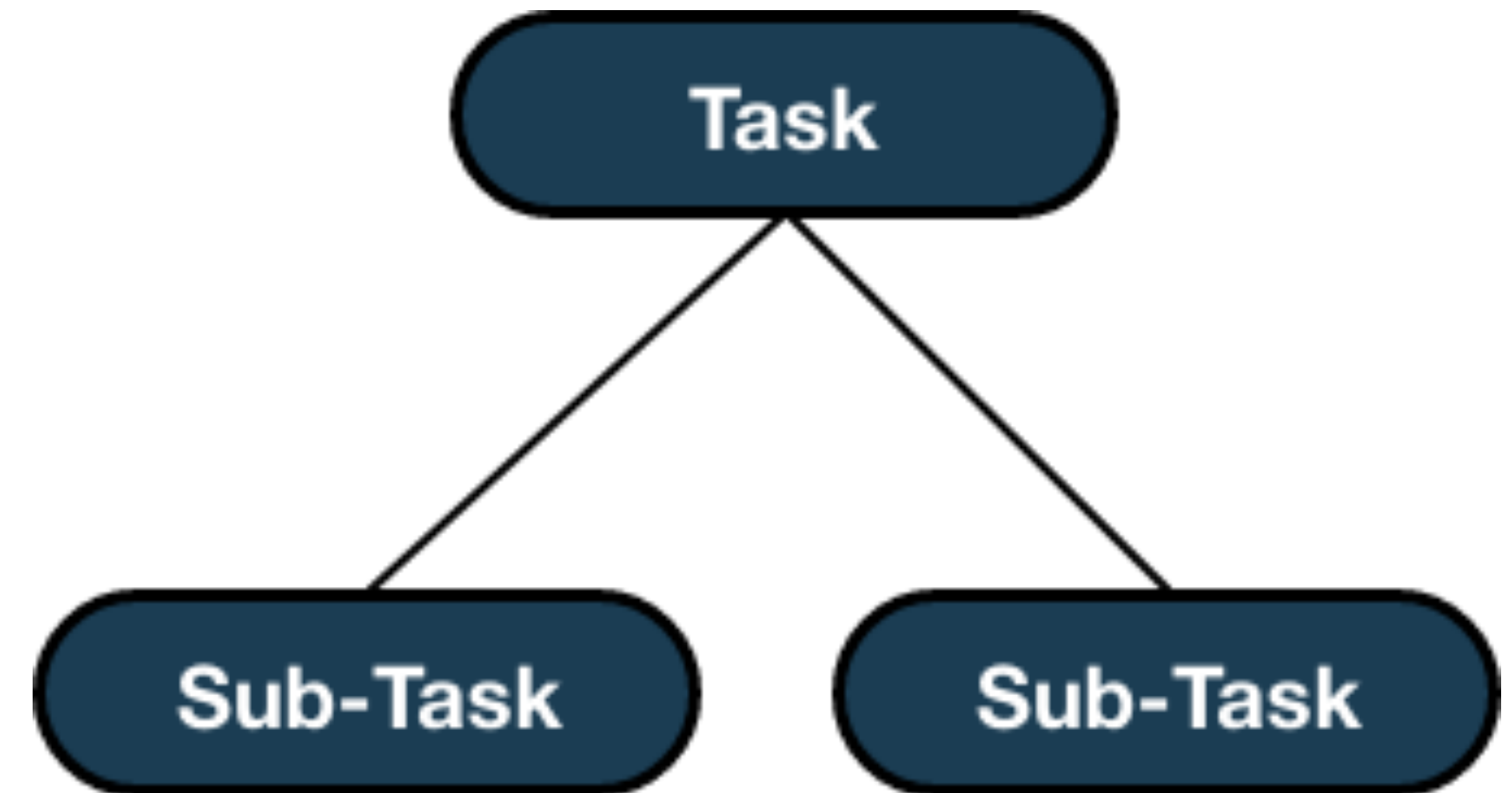
## Concurrent Task Trees (CTT)



CTT is a **Graphical syntax** developed to overcome limitations of notations previously used (GOMS & HTA) to design interactive applications

Types of Tasks in CTT (Depending on who's performing them)

- User tasks : Action Performed by User
- Application tasks: Action Performed by System
- Interaction tasks: User Interaction with System
- Abstract tasks: Can be subdivided into a combination of the above 3



Temporal relationships



# Task Modelling

## CTT – Types of Relationships



Relationship	Representation	Meaning
Interleaving		Tasks run either simultaneously or in order.
Synchronization		Task 2 updates every time Task1 changes.
Suspend-Resume		Task1 can be interrupted to perform Task 2.
Order Independence		Task can be in any order, but if one starts it can't be interrupted.

# Instructions

## Step-by-Step



### 1. Determine Scope

1. Determine which user (e.g. personas) target to focus on and their goals (e.g. scenarios)

### 2. Identify core tasks (Hierarchical Relations)

1. Using a top-down approach list for each goal the tasks users undertake to achieve their goals and for each underlying task the tasks required to achieve it.

### 3. Identify Relations between tasks (Temporal Relations)

1. Identify the relations between tasks falling on the same level, and add the relation to each task. Refer to the relationship operators, to demonstrate the relationship.

### 4. Refining the Task Model

1. During modelling, some knowledge gaps and questions will arise. Noting these and Addressing them during User Research will help in improving the model greatly.

### 5. Some UI decisions can be derived from the model

1. Transform the Task Tree into an interface or design decisions.



# Contact

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