# Samples from unsupervised needs synthesis algorithm

## Improvement against previous method

To encourage the diversity among generated scene and intention text, we hypothesize that additional information is needed to guide diversified generation. Particularly, we hope the additional information is product-specific, so that the generation can be distinguishable between different products. Therefore, we select the customer information as the additional information to guide diversified generation for different products. The intuition of the choice is that different products generally correspond to different customers.

According to the generation results shown below, the generated scene and intention are highly related to the provided customer information. Due to the intuition that different products generally correspond to different customers, we can achieve the diversity of generated scene and intention across different products.

## Prompt template

Text in red color is the information provided for diversified generation and text in yellow color is the instruction about whether the scene or intention is common or uncommon.

### For customer

What are the potential customer groups for comb products? List five specific examples including the information of career, gender, age, etc.

### For scene

Please give me five different real-life scene descriptions where the product of comb is unlikely to appear. In each real-life scene description, you should not mention the product and you should include some story in the description. The main characters of the story should be the kindergarten female teacher.

### For intention

Please give me five real-life intention descriptions which are unlikely to be the intentions of the product of comb. These intentions should be the intention of kindergarten female teacher in daily life, involving some routines. Moreover, these intentions may be fulfilled with the product of comb, but this is not a common practice.

## Product: comb

### Customer: kindergarten female teacher

#### Scene

'In a bustling kindergarten classroom, Miss Emily gathered her young students for a storytelling session. As she animatedly read a fairy tale about a princess, the children sat cross-legged on the colorful rug, their eyes wide with wonder. Suddenly, a gust of wind blew through the open window, scattering papers and causing a small commotion, but Miss Emily calmly continued, weaving the tale into a lesson about staying calm during surprises.',

在熙熙攘攘的幼儿园教室里，艾米丽老师召集她的小学生们上课讲故事。她兴致勃勃地朗读着一个关于公主的童话故事，孩子们盘腿坐在色彩缤纷的地毯上，眼睛里充满了好奇。突然，一阵风从敞开的窗户吹进来，吹得纸张四处飞散，引起了一阵小小的骚动，但艾米丽老师平静地继续讲故事，将故事编织成一堂关于在意外中保持冷静的课程。

'During an outdoor nature walk in the school garden, Miss Lily pointed out various flowers and insects to her curious class. One child discovered a caterpillar on a leaf, and they all huddled around, discussing its transformation into a butterfly. The sun shone brightly, and the sound of birds chirping filled the air as they learned about life cycles, with no interruptions from grooming tools.',

在学校花园的户外自然漫步中，莉莉老师向好奇的学生们指着各种花卉和昆虫。一个孩子在一片叶子上发现了一条毛毛虫，大家都围在一起，讨论着它是如何蜕变成蝴蝶的。阳光明媚，鸟儿啁啾的鸣叫声在空气中回荡，孩子们学习着生命周期，没有梳理工具的干扰。

'At the annual kindergarten art show, Miss Sophia helped her students display their finger-painted masterpieces on the walls. Parents milled about, admiring the creative works while sipping juice. A sudden spilled cup caused a small puddle, but Miss Sophia quickly organized a cleanup with paper towels, turning it into a fun teamwork activity without any need for personal care items.',

在一年一度的幼儿园艺术展上，索菲亚老师帮助她的学生们在墙上展示他们的手指画杰作。家长们围坐在一起，一边喝着果汁，一边欣赏着孩子们的创意作品。突然洒落的杯子溅了一小滩水，但索菲娅老师迅速用纸巾清理干净，让这变成了一场有趣的团队活动，无需任何个人护理用品。

"In the school's music room, Miss Ava led a lively sing-along session with tambourines and drums. The children laughed and clapped along to nursery rhymes, their voices echoing off the walls. When a tambourine strap broke, Miss Ava improvised by tying it with a ribbon from her desk, keeping the rhythm going smoothly amidst the joyful chaos.",

在学校的音乐室，艾娃老师用铃鼓和鼓带领孩子们欢快地一起唱歌。孩子们笑着拍手，跟着童谣唱着歌，歌声在墙上回荡。铃鼓的带子断了，艾娃老师即兴发挥，用桌上的丝带系好，让节奏在欢快的喧闹中保持流畅。

'During a rainy day indoor recess, Miss Olivia set up a blanket fort in the classroom for a cozy reading nook. The children snuggled inside with pillows, listening intently as she read a adventure story. Thunder rumbled outside, adding to the atmosphere, but the focus remained on imagination and bonding, far from any grooming routines.'

在一个下雨天的室内课间休息时间，奥利维亚老师在教室里用毯子搭了一个堡垒，打造一个舒适的阅读角落。孩子们抱着枕头依偎在里面，专心地听着她讲冒险故事。外面雷声隆隆，增添了气氛，但焦点仍然在于想象力和凝聚力，远离任何修饰程序。

#### Intention

To teach students about basic physics by demonstrating how a comb can be magnetized and attract small pieces of paper.

通过演示梳子如何磁化并吸附小纸片，教授学生基础物理知识。

To use a comb as a makeshift ruler for measuring the length of craft materials during art class activities.

在美术课上，用梳子作为临时尺子测量手工材料的长度。

To create a percussion sound effect in a classroom music session by tapping a comb against a surface.

在课堂音乐课上，用梳子轻敲物体表面，营造出敲击音效。

To organize and separate small items like beads or sequins into different compartments using the teeth of a comb.

用梳齿将珠子或亮片等小物件整理并分类放入不同的格子中。

To serve as a simple tool for practicing fine motor skills by having students carefully comb through sand or rice in sensory bins.

让学生仔细梳理感官箱中的沙子或米粒，以此作为练习精细动作技能的简单工具。

### Customer: new parents

#### Scene

'In a cozy nursery filled with the soft glow of a nightlight, two new parents tiptoe around a crib, whispering lullabies to soothe their crying infant. They gently rock the baby, their faces illuminated by a mobile of stars and moons spinning slowly above, creating a serene atmosphere of love and care.',

在一个温馨的育婴室里，夜灯柔和地照耀着，两位新手父母踮着脚尖绕着婴儿床走，轻声哼着摇篮曲，安抚着哭闹的婴儿。他们轻轻地摇晃着婴儿，头顶上缓缓旋转的星月摇篮照亮了他们的脸庞，营造出一种充满爱与关怀的宁静氛围。

"At a bustling farmer's market on a sunny morning, the new parents push a stroller through the crowded aisles, stopping to sample fresh fruits and chat with local vendors. Their baby gurgles happily, and they laugh as they juggle bags of produce and a sippy cup, soaking in the vibrant community spirit.",

在一个阳光明媚的早晨，在一个熙熙攘攘的农贸市场，新手父母推着婴儿车穿过拥挤的过道，停下来品尝新鲜水果，并与当地商贩聊天。他们的宝宝开心地咯咯笑着，他们一边玩弄着农产品袋和吸管杯，一边笑着，沉浸在充满活力的社区氛围中。

'In a modern kitchen, the new parents work together to prepare a homemade meal, chopping vegetables and stirring pots while their baby naps in a nearby bassinet. The aroma of herbs and spices fills the air, and they share quiet jokes, enjoying this peaceful moment of domestic harmony.',

在一个现代化的厨房里，新手父母们一起准备家常菜，切菜、搅拌锅里的食材，而他们的宝宝则在附近的摇篮里小睡。空气中弥漫着香草和香料的香气，他们轻声说着笑话，享受着这宁静祥和的家庭时光。

"During a rainy afternoon, the new parents bundle up their infant and head to a quiet library, where they find a corner to read children's books aloud. The baby's eyes widen at the colorful illustrations, and the parents exchange soft smiles, lost in the joy of early literacy and family bonding.",

在一个下雨的午后，新手父母们裹紧婴儿的被子，来到一个安静的图书馆，找个角落大声朗读儿童读物。宝宝被色彩缤纷的插图惊呆了，父母们交换着温柔的微笑，沉浸在早期识字和家庭纽带的喜悦之中。

'On a snowy day, the new parents take their baby for a walk in the park, carefully navigating the icy paths with a well-wrapped stroller. They pause to watch other families build snowmen, and the crisp air and laughter around them create a heartwarming winter tableau of new beginnings.'

在一个下雪天，新手父母们带着宝宝在公园里散步，推着裹得严严实实的婴儿车，小心翼翼地在结冰的小路上行驶。他们停下来观看其他家庭堆雪人，周围清爽的空气和欢声笑语，构成了一幅温馨的冬日景象，预示着新的开始。

#### Intention

To soothe a crying baby by combing their hair gently as part of a calming bedtime routine.

作为安抚睡前习惯的一部分，轻轻梳理婴儿的头发，安抚哭闹的婴儿。

To clean small food crumbs off a high chair tray using the teeth of a comb during post-meal tidying.

餐后整理时，用梳齿清理高脚椅托盘上的碎屑。

To create patterns in soft baby food on a plate for playful feeding and visual stimulation.

在盘子上用柔软的婴儿食物制作图案，以便玩耍时喂食并刺激视觉。

To scratch an itch on a baby's back through clothing when no dedicated tool is available during diaper changes.

换尿布时，如果没有专用工具，可以隔着衣服挠婴儿背部的痒处。

To measure small lengths or distances, such as the growth of a baby's fingernail, using the spacing between comb teeth.

利用梳齿之间的间距测量微小的长度或距离，例如婴儿指甲的生长。

### Customer: schoolgirls

#### Scene

'In the bustling school cafeteria, a group of school girls hurriedly gather around a table, laughing and sharing stories from their morning classes. One girl accidentally spills her juice, causing a small commotion as they scramble to clean it up with napkins, their backpacks and books scattered nearby.',

熙熙攘攘的学校餐厅里，一群女生匆匆围坐在桌旁，谈笑风生，分享着上午课堂上的故事。一个女生不小心洒了果汁，引起一阵小骚动，她们慌忙用餐巾纸擦干净，书包和书本散落在一旁。

'During a spirited soccer match on the school field, two teams of school girls compete fiercely under the bright sun. The goalkeeper makes a dramatic save, and the crowd of classmates cheers loudly, with sweat and grass stains marking their uniforms as they celebrate the goal.',

学校操场上一场激烈的足球比赛，两支女学生队伍在明媚的阳光下激烈角逐。守门员精彩地扑救，全场同学欢呼雀跃，汗水和草渍沾染在她们的制服上，庆祝进球。

'In the quiet art classroom, a circle of school girls sits intently painting canvases for an upcoming exhibition. They discuss color choices and techniques, with brushes in hand and palettes smudged with vibrant hues, lost in their creative expressions and mutual encouragement.',

安静的美术教室里，一群女学生围坐在一起，专心致志地为即将到来的展览作画。她们手握画笔，调色板上沾满了鲜艳的色彩，讨论着色彩的选择和技巧，沉浸在创作的表达和互相鼓励之中。

'At a weekend sleepover, a group of school girls huddle in a dimly lit room watching a scary movie. They scream and laugh together, sharing blankets and popcorn, with pillows and stuffed animals scattered around as they bond over shared fears and friendship.',

周末的过夜派对上，一群女学生挤在灯光昏暗的房间里，看一部恐怖电影。她们一起尖叫欢笑，分享毯子和爆米花，枕头和毛绒玩具散落在四周，共同的恐惧和友谊让她们更加亲密。

"During a rainy afternoon, school girls take shelter under a large tree on the school grounds, chatting animatedly about their plans for the summer break. They huddle close to stay dry, with umbrellas propped open and backpacks protected, enjoying the soothing sound of raindrops and each other's company."

一个下雨的午后，女学生们在校园里的一棵大树下避雨，兴致勃勃地谈论着暑假的计划。她们紧紧地挤在一起，撑开雨伞，保护着背包，享受着雨滴的清脆声响和彼此的陪伴。

#### Intention

To use the comb as a makeshift ruler for measuring small objects in a school project.

在学校作业中，用梳子当临时尺子测量小物件。

To pretend the comb is a microphone during a solo singing practice in the bedroom.

在卧室独唱练习时，用梳子假装麦克风。

To employ the comb as a temporary bookmark by wedging it between textbook pages during study time.

学习时，用梳子夹在课本中间，当做临时书签。

To scratch lottery tickets with the teeth of the comb for fun during a break.

课间休息时，用梳齿刮彩票，找点乐子。

To use the comb to create patterns in sand or dirt while waiting for the school bus.

等校车时，用梳子在沙子或泥土上画图案。

### Customer: beard enthusiast

#### Scene

'A beard enthusiast, deep in meditation on a mountaintop, focuses solely on his breath and the crisp air, feeling the wind gently tousle his facial hair without a single thought of grooming tools.',

一位胡子爱好者在山顶上沉思，只专注于呼吸和清新的空气，感受着微风轻轻拂过他的胡须，丝毫没有想到梳妆工具。

'During a chaotic food fight at a family barbecue, the beard enthusiast laughs as sauce and crumbs fly everywhere, his beard catching bits of potato salad while he dodges a flying hot dog, entirely absorbed in the messy fun.',

在一次家庭烧烤的混乱食物大战中，胡子爱好者笑了起来，酱汁和面包屑四处飞溅，他的胡子沾满了土豆沙拉，他躲避着飞来的热狗，完全沉浸在混乱的乐趣中。

"In the midst of a high-stakes chess tournament, the beard enthusiast strokes his chin thoughtfully, his mind racing over strategic moves, unaware of anything but the game and his opponent's intense gaze.",

在一场高风险的国际象棋比赛中，胡子爱好者若有所思地抚摸着下巴，思绪飞速地思考着战略举措，除了比赛和对手专注的目光之外，什么都意识不到。

'Exploring a dense jungle, the beard enthusiast pushes through vines and brushes past leaves, his beard collecting tiny dewdrops and insects, as he marvels at the exotic wildlife around him.',

在茂密的丛林中，胡子爱好者拨开藤蔓，拂过树叶，他的胡子上沾满了细小的露珠和昆虫，他惊叹于周围奇异的野生动物。

"At a lively music festival, the beard enthusiast sways to the beat, his beard fluttering in the breeze from the speakers, lost in the rhythm and the crowd's energy, far from any thoughts of tidiness."

在一个热闹的音乐节上，胡子爱好者随着节拍摇摆，胡子飘扬。在扬声器传来的微风中，迷失在节奏和人群的能量中，远离任何整洁的想法。

#### Intention

Using a comb to carefully measure the growth rate of beard hairs by counting the teeth that catch strands each day.

使用梳子仔细测量胡须的生长速度，计算每天梳理胡须的齿数。

Employing a comb as a makeshift tool for applying and spreading beard oil evenly across the face before shaping.

在造型前，用梳子作为临时工具，将胡须油均匀涂抹于面部。

Utilizing a comb to create intricate patterns or part lines in a long beard as part of a morning styling ritual.

作为早晨造型仪式的一部分，用梳子在长胡须上打造复杂的图案或分线。

Using a comb to gently exfoliate the skin under the beard by scratching the scalp in a circular motion during grooming.

梳理胡须时，用梳子以打圈的方式刮擦头皮，轻轻去除胡须下的角质。

Keeping a comb in a pocket solely for the purpose of fidgeting or stress relief by running it through the beard repeatedly throughout the day.

将梳子放在口袋里，仅仅是为了整天反复梳理胡须，缓解压力或烦躁不安。

## Product: watch

### Customer: lawyer

#### Scene

'In a dimly lit courtroom, a lawyer passionately argues a case before a jury, her voice rising with emotion as she recounts the details of a wrongful conviction, her hands gesturing to emphasize her points without a single timekeeping device in sight, focusing solely on justice.',

'During a quiet evening at home, a lawyer sits by the fireplace, engrossed in reading a thick legal tome, the only sounds being the crackling of the fire and the turning of pages, completely unaware of the passing hours as they delve into precedent.',

'On a secluded beach at dawn, a lawyer jogs along the shoreline, the rhythmic sound of waves and their own breathing drowning out any need for schedules, lost in thought about an upcoming trial strategy.',

'In a bustling city park, a lawyer enjoys a picnic with their family, laughing and sharing stories over homemade sandwiches, the simple joys of togetherness overshadowing any notion of time constraints or deadlines.',

'At a late-night study session in a library, a lawyer pores over case files with a colleague, the only light coming from desk lamps as they debate legal theories, immersed in their work without a glance at the clock.'

#### Intention

'To review and analyze legal documents for accuracy and compliance during daily case preparation.',

'To schedule and manage court appearances, client meetings, and deposition times throughout the workday.',

'To bill clients for services rendered by tracking time spent on various legal tasks and cases.',

'To conduct legal research by accessing case law and statutes during breaks or while commuting.',

'To draft and edit legal briefs and contracts while on the go between appointments.'

### Customer: fitness trainer

#### Scene

'In a tranquil yoga studio, a fitness trainer guides her students through a deep meditation session, focusing on breath and mindfulness without any distractions or interruptions from modern gadgets.',

"During a high-intensity boot camp in a remote forest, a fitness trainer leads a group through obstacle courses, emphasizing primal movements and nature's rhythm, far removed from urban conveniences.",

'At a community pool, a fitness trainer teaches synchronized swimming to children, creating imaginative stories with each routine and fostering creativity without relying on external tools.',

'In a dimly lit dance studio, a fitness trainer choreographs a contemporary piece with a small troupe, using only body language and emotion to convey the narrative of the performance.',

'On a sandy beach at sunrise, a fitness trainer conducts a barefoot running clinic, sharing personal anecdotes of endurance and connection to the earth, avoiding any mention of technology.'

#### Intention

'To use the stopwatch feature for tracking the duration of client consultations and sessions, ensuring precise billing and time management.',

'To monitor heart rate during meal preparation and rest periods to gauge stress levels and maintain optimal health throughout the day.',

'To set calendar reminders on the watch for scheduling personal appointments and social events, integrating fitness routines with daily life.',

'To use the step counter to measure distances walked while coaching or demonstrating exercises, though typically done with specialized equipment.',

'To check weather updates on the watch before outdoor training sessions, despite usually relying on more comprehensive weather apps or forecasts.'

### Customer: outdoor adventurer

#### Scene

'An outdoor adventurer named Alex was trekking through a dense, ancient forest, searching for rare medicinal plants. As the sun began to set, casting long shadows through the canopy, Alex stopped to set up camp near a babbling brook. The only sounds were the rustling leaves and distant animal calls, with no modern devices in sight to mark the passage of time.',

'During a deep-sea diving expedition, the adventurer Maria explored a vibrant coral reef, marveling at the colorful fish and intricate formations. She was completely immersed in the underwater world, relying on her diving skills and the natural light filtering through the water, with no distractions from the surface to break her focus.',

'On a solo kayaking trip down a remote river, the adventurer Jake navigated through gentle rapids and serene stretches. He paused to watch a family of beavers building a dam, feeling a deep connection to nature as the day unfolded organically, guided by the position of the sun and his own instincts.',

'While rock climbing a sheer cliff face, the adventurer Sarah focused solely on her handholds and the chalk on her fingers. The wind whispered encouragement as she ascended, and upon reaching the summit, she sat quietly to enjoy the panoramic view, with nothing artificial to measure her achievement.',

'In a desert oasis, the adventurer Leo rested under the shade of a palm tree after a long day of sand dune hiking. He shared stories with local nomads around a campfire, the stars above providing the only illumination, and the experience felt timeless, free from any reminders of technology.'

#### Intention

"Using the watch as a makeshift compass by holding it up to the sun to determine direction while hiking, though it's not designed for such precision.",

"Employing the watch's timer feature to track the exact duration of brewing coffee over a campfire, despite it not being its intended use.",

"Utilizing the watch's alarm to mimic bird calls for wildlife observation during morning routines, which is an unconventional application.",

'Strapping the watch to a gear strap to measure the tension while setting up a tent, though it lacks specific sensors for this purpose.',

"Using the watch's stopwatch to time intervals between lightning and thunder during storms for distance estimation, even though specialized apps are more common."