



iSLEEP

WORK FROM HOME SLEEP ROUTINE

~Working from Home~ From Sleep to Productivity

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Project Presentation

Understand	Explore	Define	Build Develop Operate	
<ul style="list-style-type: none">• Business Opportunity• Empathy Map• Persona• As-Is Scenario• Pain Points	<ul style="list-style-type: none">• Refined HMW• Big Ideas• Prioritisation Plot• Storyboarding• Hill Statement	<ul style="list-style-type: none">• Assumptions & Risks• To-Be Scenario• MVP Statement & Hypothesis	<ul style="list-style-type: none">• MVP Roadmap,• Prototype,• Cloud & System, Infrastructure• DevOps, Lifecycle & Tools	

WORK FROM HOME SLEEP ROUTINE

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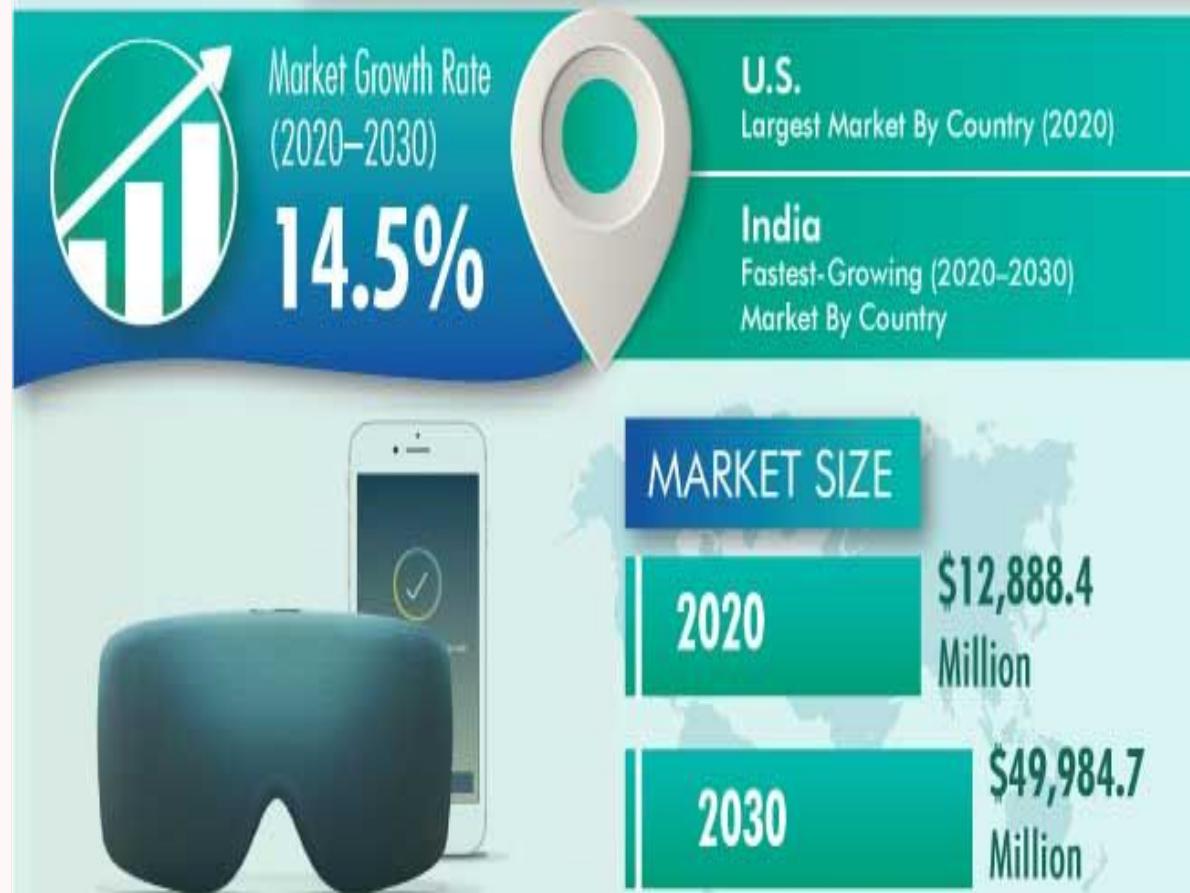
Sleep is that golden chain that ties health and our bodies together.

”

Thomas Dekker

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Global Sleep Tech Devices Market



Drivers For Global Sleep Tech Devices Market: Impact Analysis



Increasing prevalence of sleep disorders



Growing awareness about ill effects of untreated sleep apnea



Surging usage of oral appliances

Source: www.psmarketresearch.com

Business Opportunity Statement



Objective: Improve Sleep Routine for Adults Working From Home

- Majority of adult workers suffer disruption in their sleep routines due to prolonged working hours, which results in them facing difficulties in establishing work-life balance since the start of the Covid pandemic.
- Our potential users are aged 21 and above, working from home. They struggle today because they need to balance heavy workload while managing personal commitments, thus leading to higher chances of burning out.
- We plan to grow our business by being a leader in a fast expanding market of workers who are demanding services to improve their sleep routines, productivity and quality of life.



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Problem Statement & HMW

How might we **improve sleep routine** for **adults working from home** so that **they can enhance productivity at work?**



User Research & Objectives



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Primary



Understand sleep patterns of adults working from home

Secondary



Identify solutions to improve regular sleep routine to help users stay focused

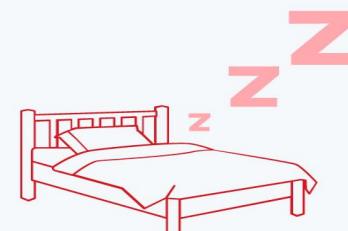
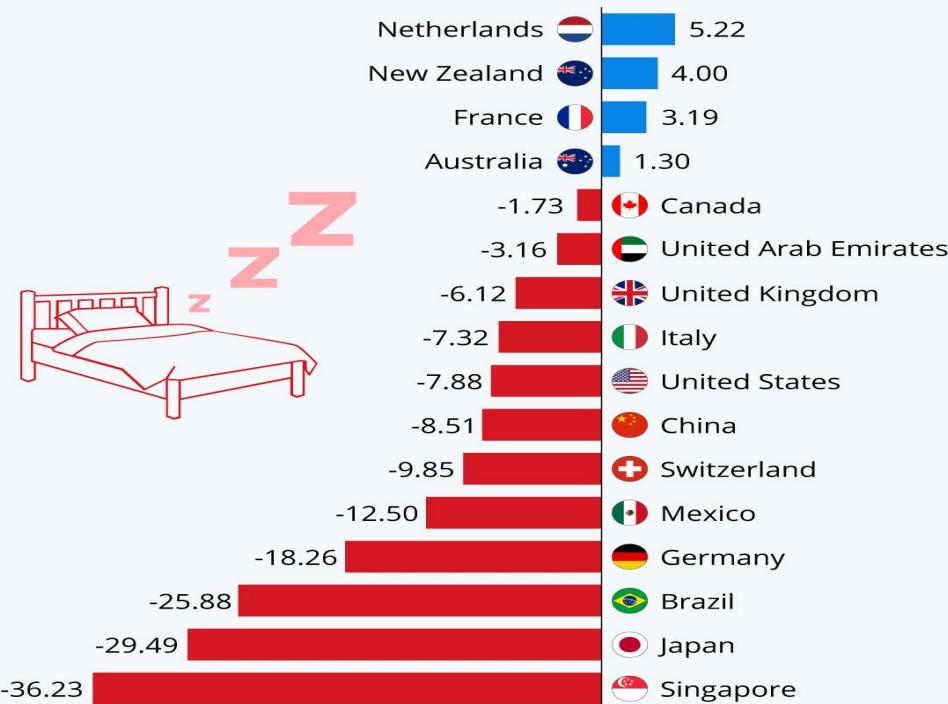
Market Research Surveys



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Who's Getting The Most Sleep?

Minutes above and below eight hours of sleep in selected countries



Latest available data: 2016
Source: Science Advances



statista

<https://www.statista.com/chart/4845/countries-in-which-people-are-getting-the-most-sleep/>

More Work, Less Sleep: How Life in Lockdown Evolved

Change in average minutes spent on activities per day in Great Britain* (28 Mar-26 Apr 2020 to 20-28 Mar 2021)



* Things that people refer to as their main activity at any given point in time
Adults aged 18 years and over
Source: Office for National Statistics



statista

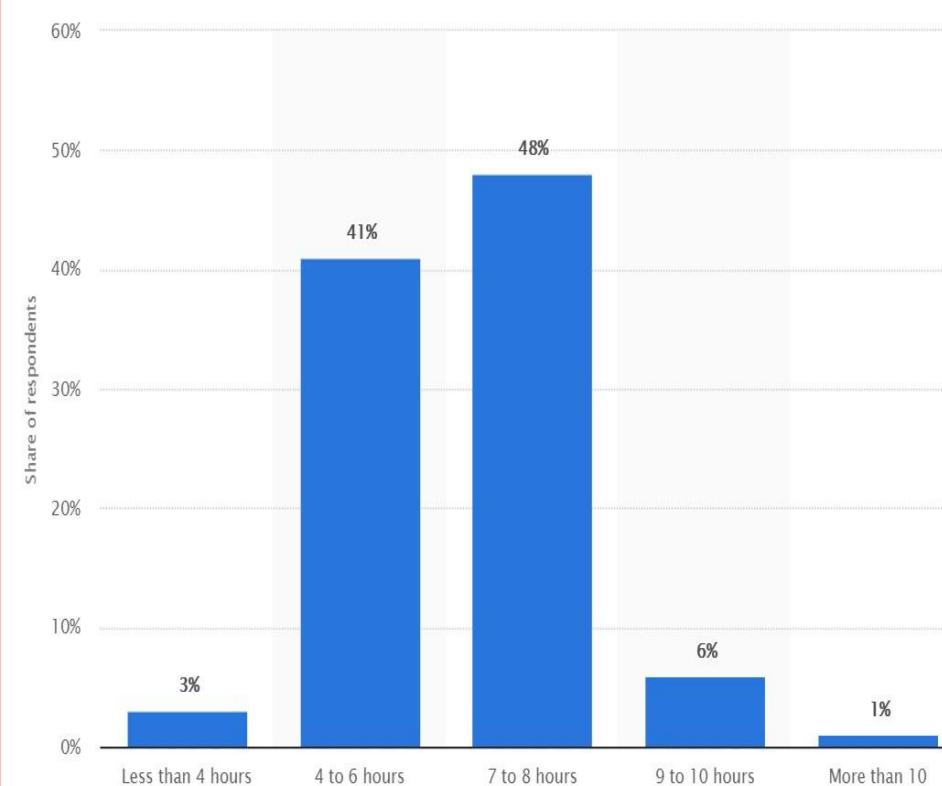
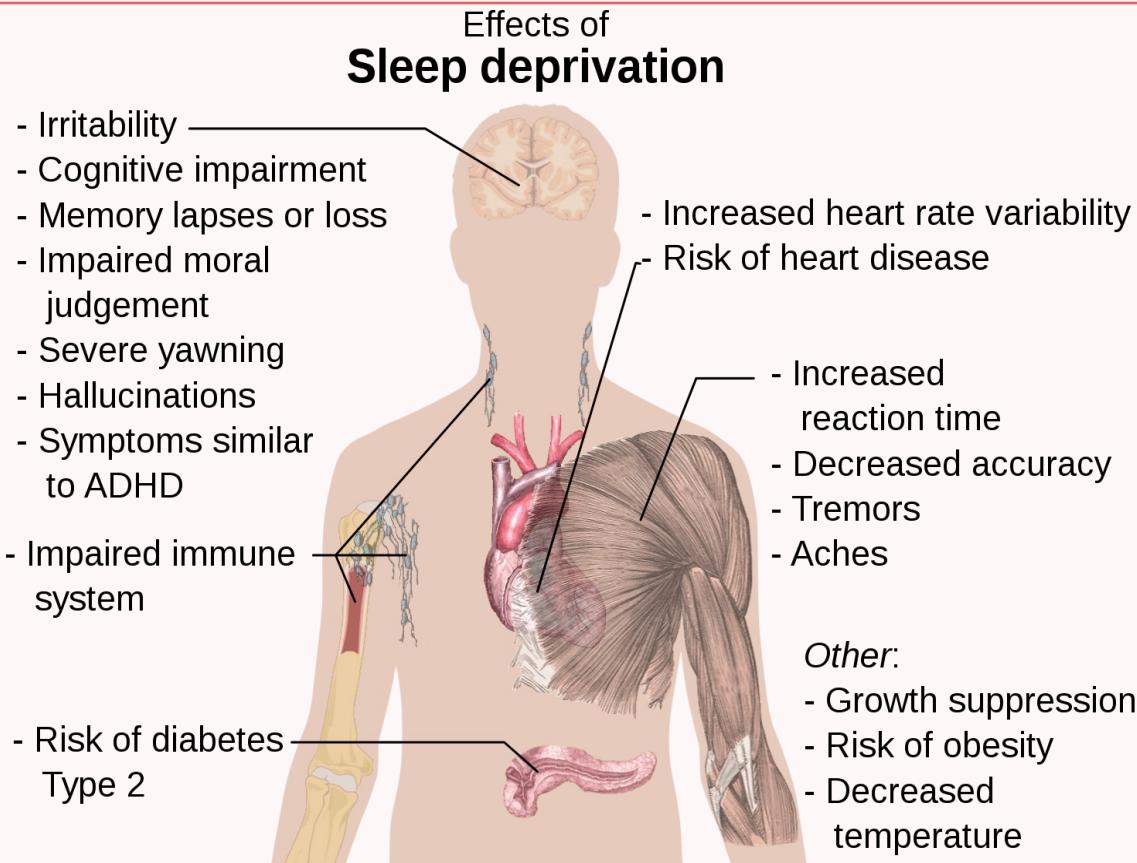
<https://www.statista.com/chart/25158/change-in-time-spent-activities-in-lockdowns-gb/>

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44% of respondents have less than 7 hours of sleep per day in Singapore



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© Statista 2021

https://en.wikipedia.org/wiki/Sleep_deprivation

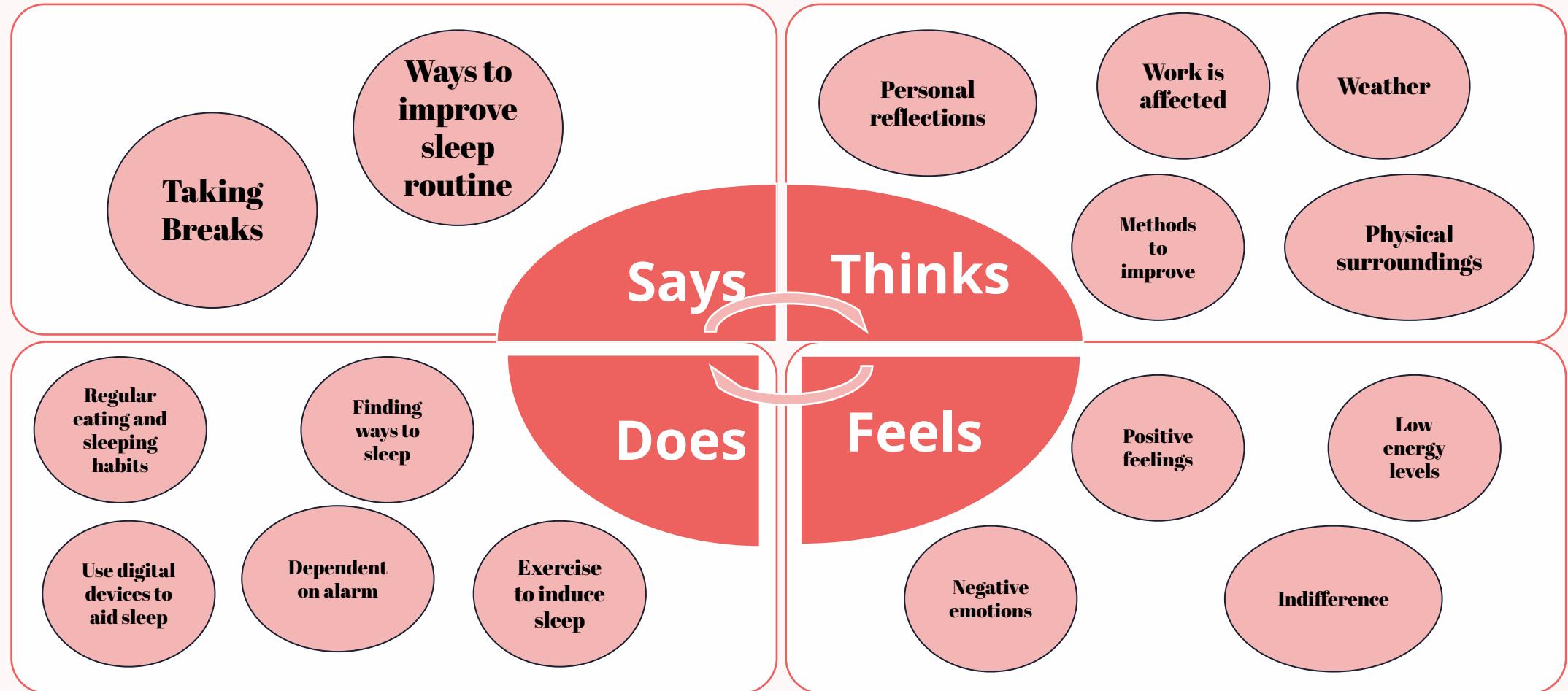
<https://www.statista.com/statistics/959557/average-daily-sleeping-hours-singapore/>

Empathy Map



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Persona

Name:	Marie
Age:	40 years old
Location:	Singapore
Education:	Degree
Job:	Executive
Family:	Married, children
Work Experience:	16 years



Persona's Motivations & Needs



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Motivations	Goals	Needs
<p>Have balanced time between family and work</p> <p>Feel more restful</p> <p>Be present with colleagues and family members at the right time</p>	<p>Increase work productivity</p> <p>Improve routine to sleep better</p> <p>Improve dietary habits</p>	<p>Sufficient uninterrupted sleep (>7 hours)</p>

AS-IS Scenario Map (Doing)



WORK FROM HOME SLEEP ROUTINE

Before Sleep

- 1 hour before:
- Avoided taking naps
 - Stayed away from caffeinated drinks

10 minutes before:

- Listened to music
- Did light exercises
- Prayed
- Watched videos on phone

During Sleep

- Had toilet breaks
- Drank water
- Tried going back to sleep

After Sleep

- 10 minutes after:
- Watched videos and read news on phone
 - Checked phone
 - Snoozed alarm

AS-IS Scenario Map (Thinking)



WORK FROM HOME SLEEP ROUTINE

Before Sleep

- 1 hour before:
- Uncompleted work tasks, meetings
 - Personal tasks to complete

- 10 minutes before:
- “Will I be productive at work tomorrow?”

During Sleep

- Dreams
- “I must go back to sleep as I will have a long day when I wake up”

After Sleep

- 10 minutes after:
- Dreams
 - Ability to focus on work tasks

- Several hours after:
- Possible reasons for not getting a good sleep
 - Lifestyle changes and benefits

AS-IS Scenario Map (Feeling)



Before Sleep

- 1 hour before:
- Sleepy
 - Tired
 - Unable to function 100% for the day
- 10 minutes before:
- Indifferent, normal

During Sleep

- Worried
- Frustrated
- Confused

After Sleep

- 10 minutes after:
- Sleepy
 - Tired
 - Lazy

- Several hours after:
- Normal
 - Hopeful, not as helpless
 - Satisfied and refreshed

User Pain Points



Difficulties falling asleep



Unable to find ways to fall asleep quickly

Work stress and anxieties



Unable to find ways to relieve stress

HMW Statements



WORK FROM HOME SLEEP ROUTINE

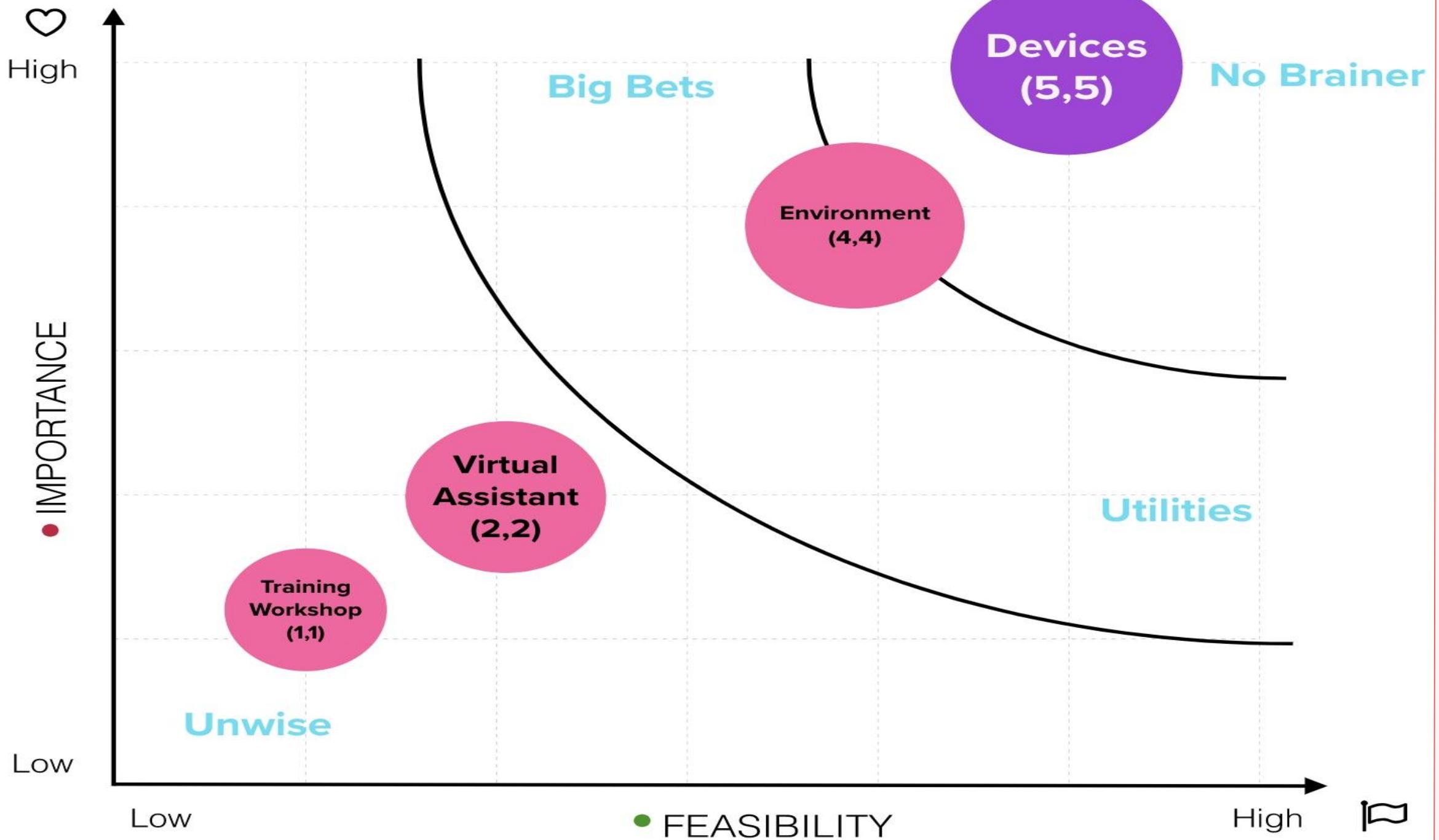
Original HMW

- How might we **improve sleep routine for adults working from home** so that **they can enhance productivity at work?**

Reframed HMW

- How might we **enable adults working from home to find ways to fall asleep easily**, so that **they can enhance their focus fo the next day?**

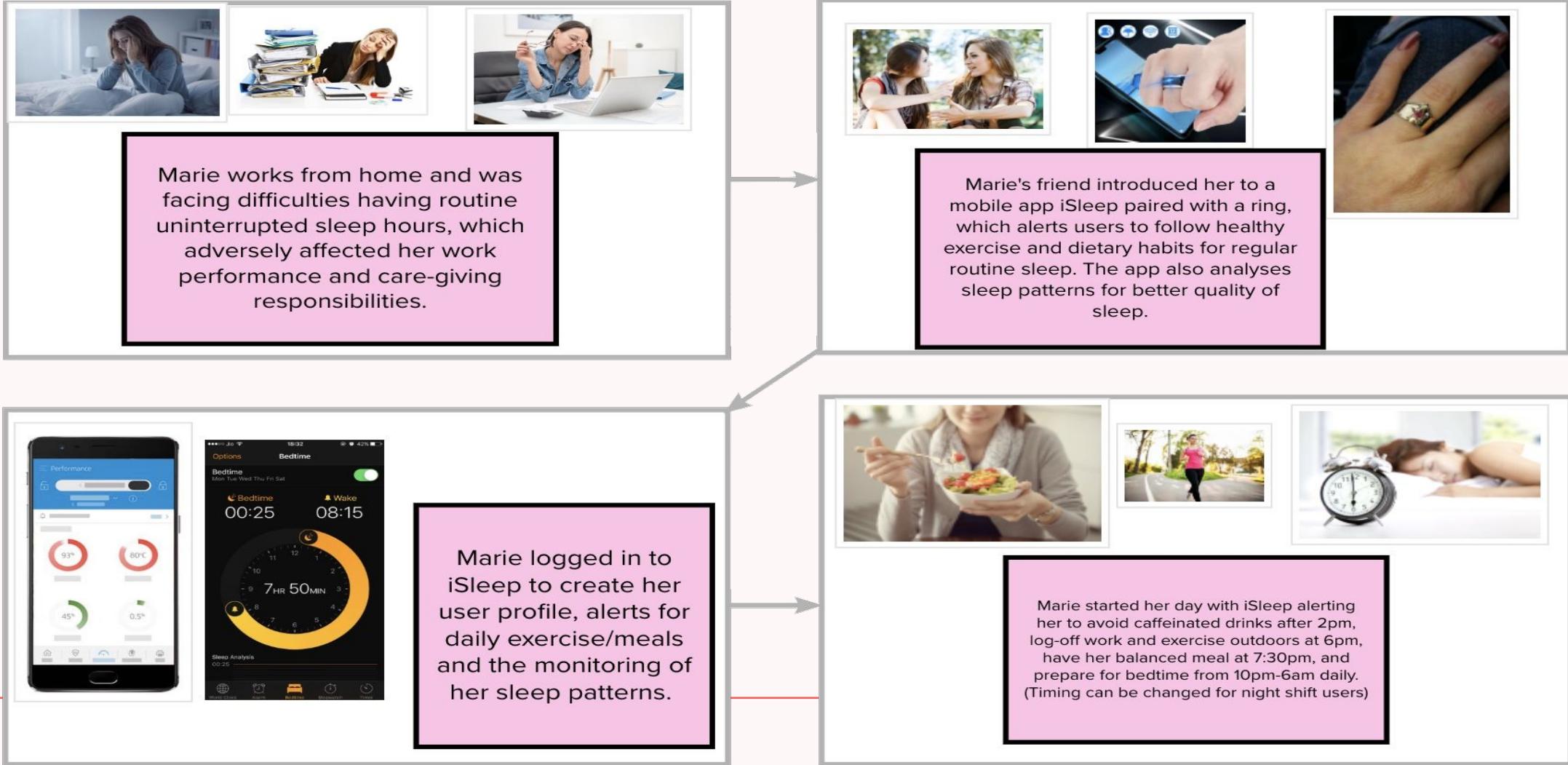
Idea Prioritization



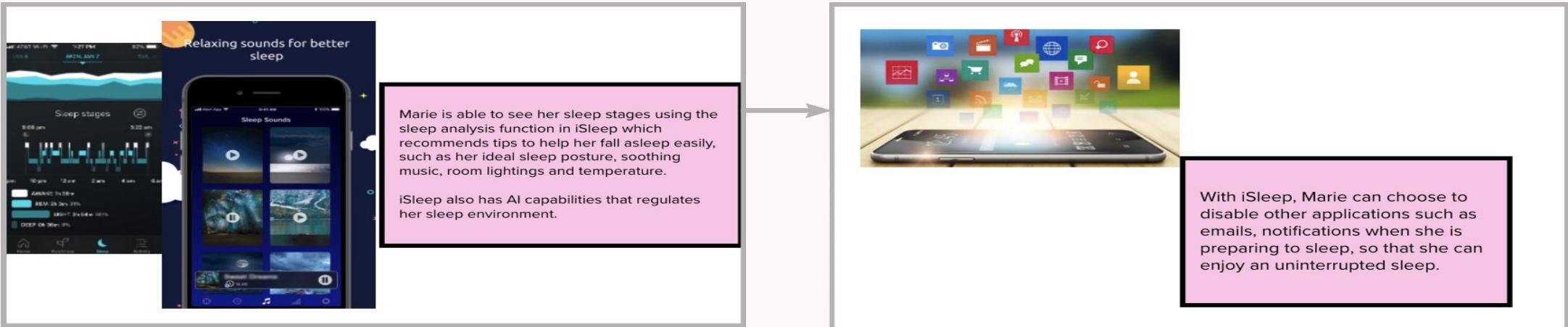
Master Storyboard



WORK FROM HOME SLEEP ROUTINE



Master Storyboard (cont'd)



Hill Statement



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WORK FROM HOME SLEEP ROUTINE

Who (User)

Adults working from home

What (Enablement)

enhance exercise and dietary habits for routine sleep hours

Wow (Market Value/ Differentiation)

so that users can fall asleep within 30 minutes and enjoy at least 6 hours of uninterrupted sleep daily

Assumptions & Risks



Assumptions

1. Users able to WFH regularly
2. Users want to change daily routine
3. Data secured and encrypted in cloud storage
4. Sufficient resources for R&D
5. Sleep data samples are available from research

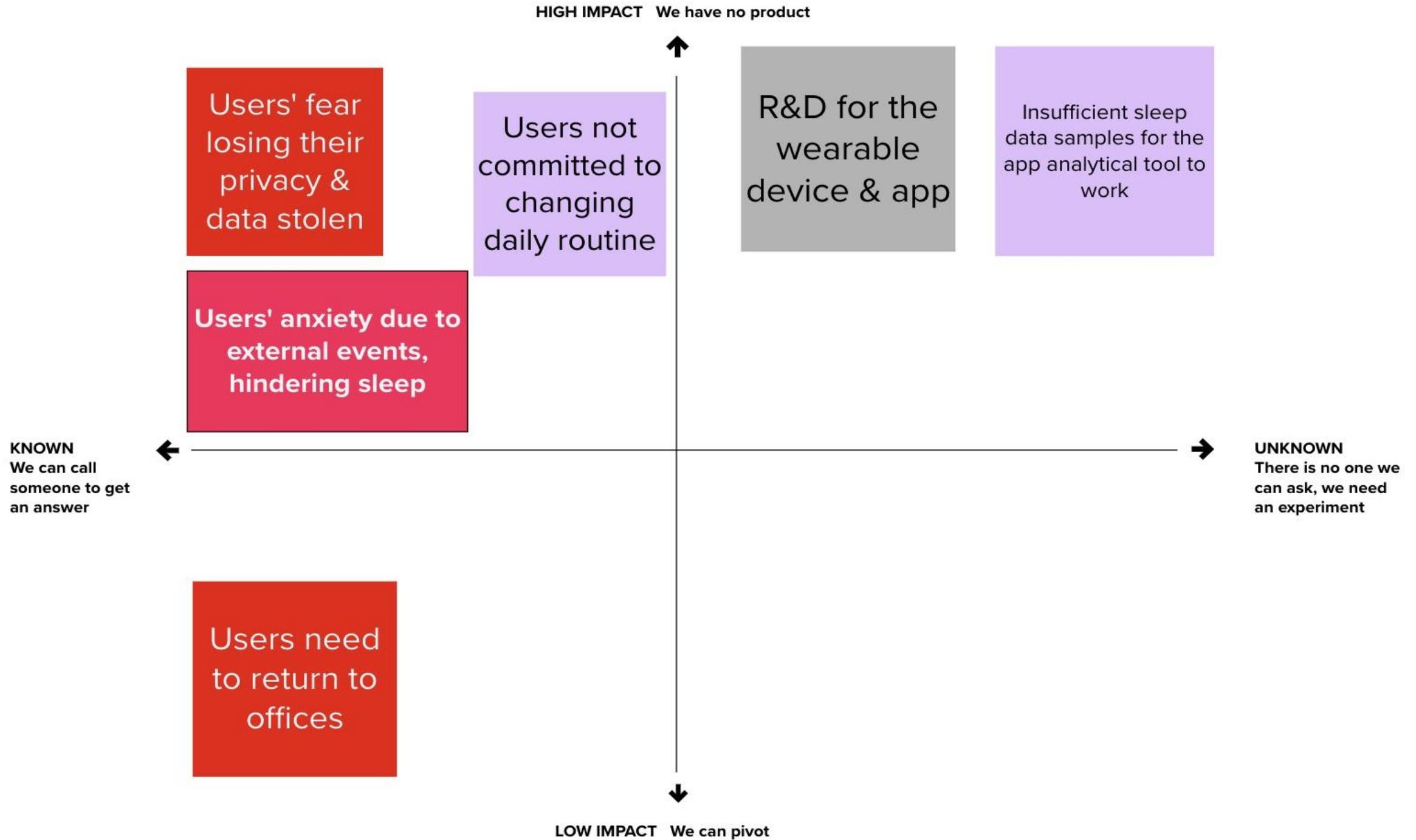
Risks

1. Users have to return to office
2. Users not committed to changing daily routine
3. Users fear for losing personal data
4. R&D for wearable device and app
5. Insufficient sleep data samples for app analysis

Mitigation

1. App can be used at home or at office
2. Highlight advantages of leading healthier lifestyle
3. Assurance provided to users by implementing data policy and securing users' data through continuous security awareness
4. Secured VC funding & expertise for R&D
5. Collaboration established with NUS Sleep & Cognition Laboratory

Risk Prioritization



To-Be Scenario Map



	~Morning~	~Afternoon~	~Night~
Doing	So refreshing & a hot coffee/tea to start the day, looking forward to do the to-do list	Better focus at work that started off with lunch on time with a healthy meal plan, reminder to self that no coffee after lunch	Early & light dinner with warm shower, reminder to self to switch off all notifications & play a 15 minutes soothing music
Thinking	What a great sleep and going to have a healthy breakfast, after which review the to-do list	With a healthy lunch, the ability to be more productive at work	What a long day at work it was & with many positive response / compliments
Feeling	Feeling energized and hopeful to start the day with the to-do list and be disciplined	Feeling more motivated & fulfilled, confidence to be able to reconnect with people/friends	So relaxed after the soothing music and feeling tired finally... (zzz... within 30mins)

MVP: Statement & Hypothesis



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Problem Statement

- iSleep is developed to address a need for adults working from home to fall asleep easily. However, the initial take-up rate was slow.
- We suspect that potential users are concerned with data privacy and security.

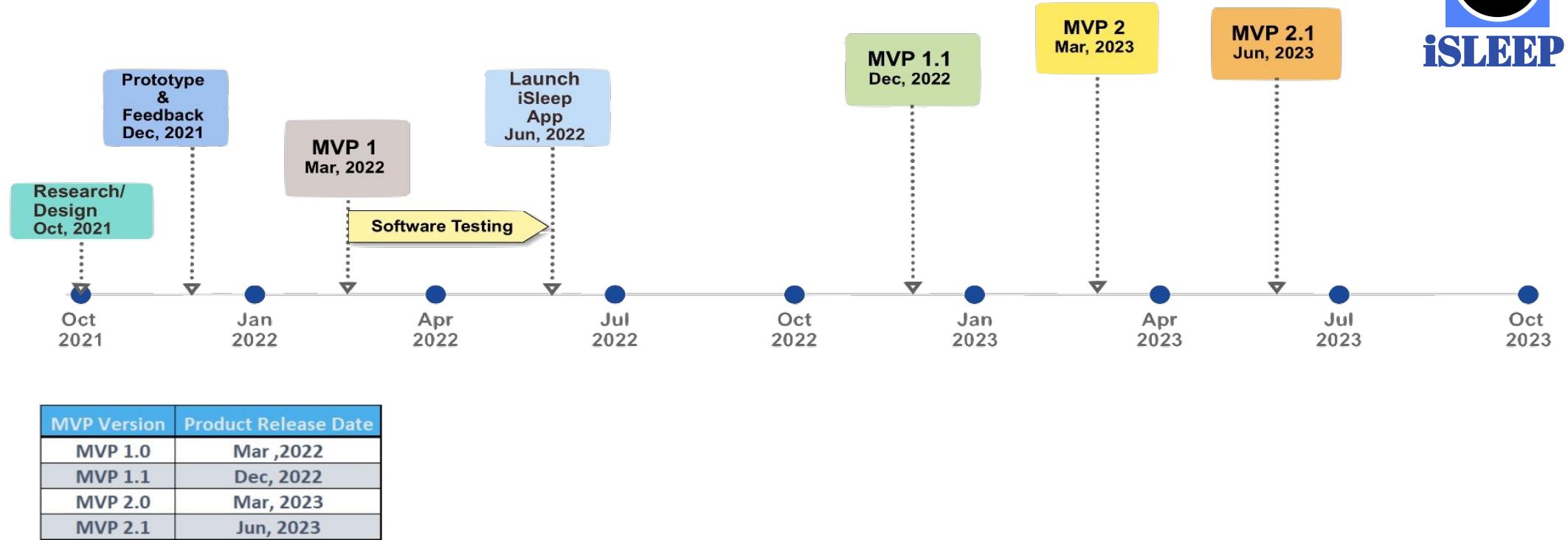
Hypothesis

- Users may want assurance of data privacy and security on the platform.
- A dedicated section will emphasise actions taken to be PDPA-compliant and to secure and protect data

Test

- Dedicated policy on data privacy and security accessible from the dashboard with full disclosures of security actions taken.

iSleep's Two-Year Action Plan



Minimum Viable Product: RoadMap

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MVP Goals & Future Goals



MVP 1 Goals

1. Scheduling alerts, suggested activities, and sleep analysis
2. Users are comfortable using the app as it is PDPA compliant and has data security
3. iSleep will collaborate with NUS researchers to improve accuracy of sleep analysis. Sufficient data to train a superior machine learning model that customises recommendations for better sleep
4. Free trials and unlocking of loyalty rewards to entice users to subscribe to monthly/annual plans

MVP 1.1 Future Goals

1. Enhancement of sleep analysis feature based on more in-depth data collected from the wearable device and machine learning used to better understand users' sleep experiences
2. Enhanced security measures to keep users' data and health history protected
3. Patented technology that complements the sleep analysis feature
4. Users renewing annual subscriptions can try beta versions of additional features

MVP Goals & Future Goals



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MVP 2 Goals

1. Introduction of other wearable devices for abilities to track users' sleep patterns and health monitoring
2. Evolution of an ecosystem that supports iSleep users' community to sleep better
3. Market services to global clients from Korea, UK & Dubai
4. Expand language selection such as French, Korean, Tamil, Hindi, etc.

MVP 2.1 Future Goals

1. Develop tracking patch for more comfortable method of collecting users' data
2. Tele-therapy & tele-medicine referral to medical specialists for consultation
3. Consent agreement finalisation with more countries
4. Use AI to build NLP capabilities in the app to translate into international languages



WOW!



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Sleep's Product Prototype

iSleep's Product Prototype - User Sign-Up



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The image displays five smartphone screens illustrating the iSleep user sign-up process:

- Hello:** Welcome to iSleep. Let us enter slumber land together... **Register** button highlighted.
- User Consent:** Thank you for bringing us into your life. Your data will be used for the purpose of providing you with the optimal solution to help you sleep better. We understand your concerns regarding data privacy. We are fully committed to ensuring that your data are stored and used in a secured and responsible manner. **I agree** button highlighted.
- Registration:** Profile setup screen. Fields include: Name: Marie Diana Jacob, Age: 30, Designation: Data Scientist, Email Address: marie_dj@gmail.com, Password: *****, Preferred schedule: Day, Membership plan: Monthly: \$38.88 (selected), Annual: \$418.88, Card Details: Number: **** * 8293, CV: 830, Name: Marie Diana Jacob, Expiry Date: 12/25. **Next** button highlighted.
- Dashboard:** Hi Marie! Share your current working lifestyle for us to set up your notification alerts. Working hours: 8:30AM to 5:30PM. Need caffeine? Options: Yes (radio button selected), No. Coffee / tea time: 8:00AM to 10:00PM. Exercise: 6:00PM to 8:45PM. Dinner time: 7:00PM to 8:00PM. Bedtime: 10:00PM to 6:00AM. **Submit** button highlighted.
- Dashboard:** Dashboard screen with icons for Sleep, Journal, Statistics, and Account. A yellow bar at the bottom says "Our data policy".

iSleep's Product Prototype - User Experience (Day 1)



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Dashboard

Journal Feature

Percent of Goal	Time in Bed
104%	07:54 hrs
Time to Sleep	Actual Sleep
37:26 min	07:17 hrs
Time Awake	Sleep Efficiency
37:04 min	92%
Light Sleep	Deep Sleep
04:15 hrs	03:02 hrs

Dinner Alert

Bedtime Alert

Music Selection

iSleep's Product Prototype - User Experience (Day 2)

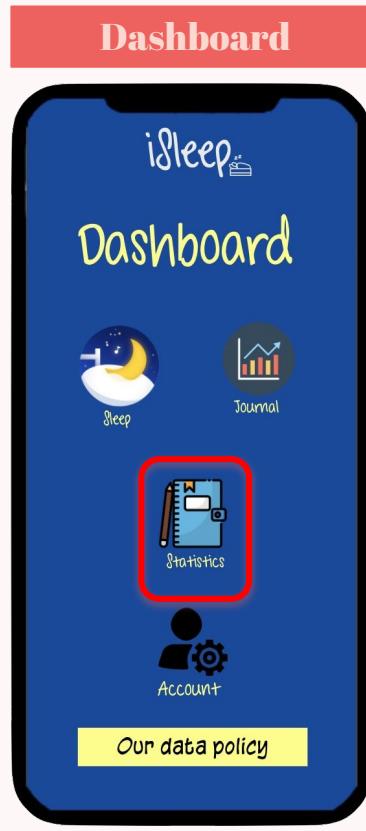


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Morning Greeting



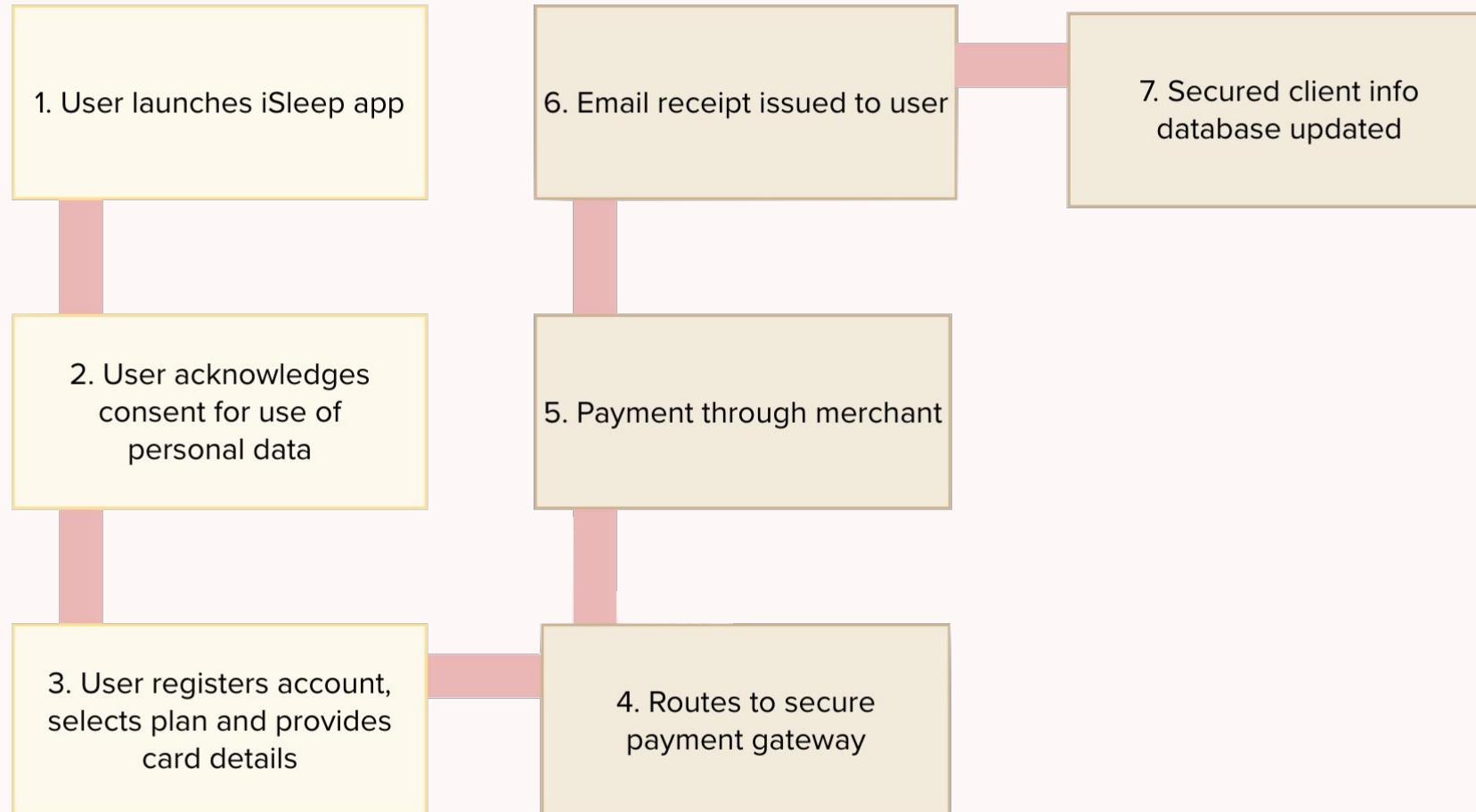
Dashboard



Statistics Feature



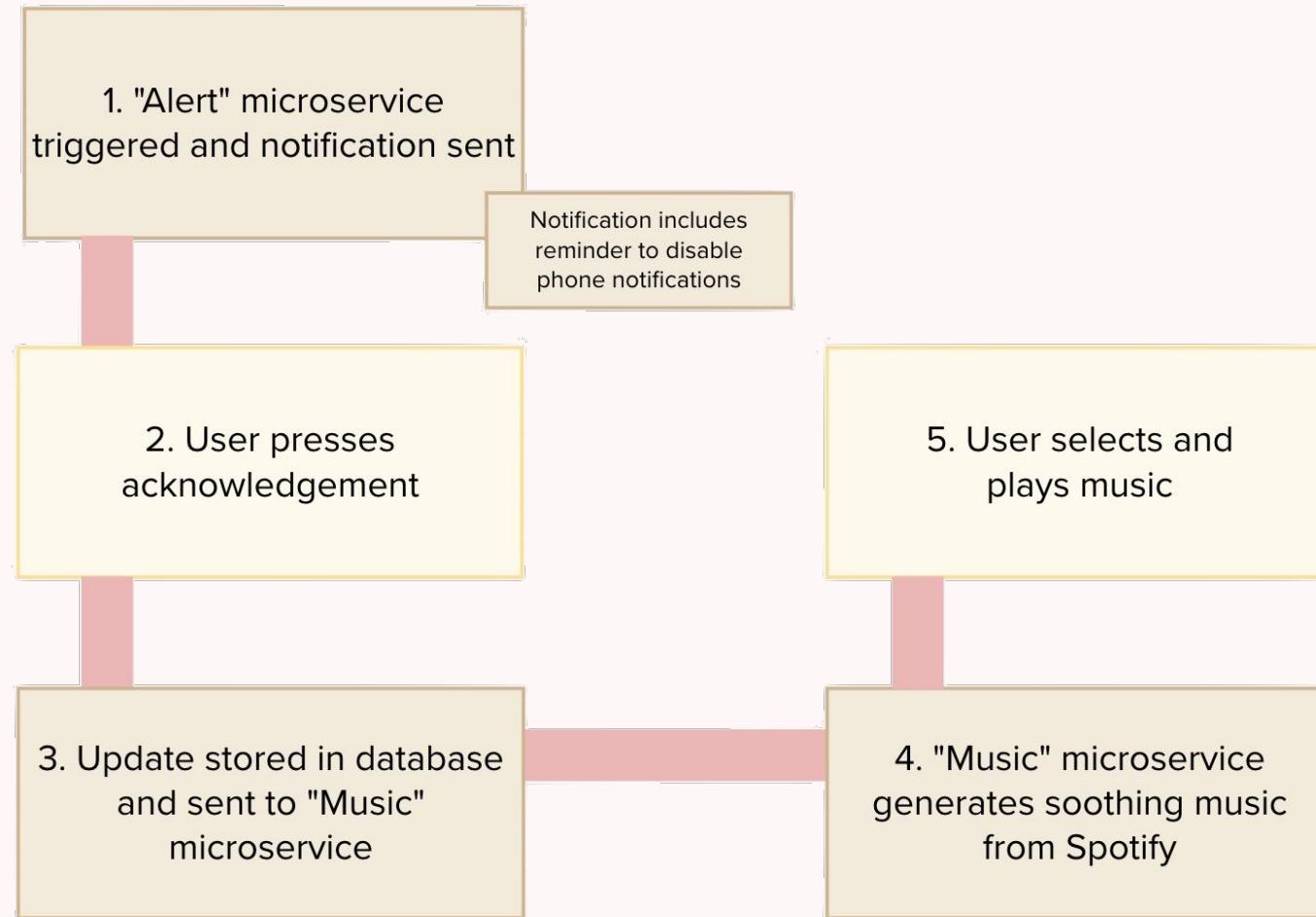
Logical Dataflow: User Sign-up



Logical Dataflow: User Experience Before Bedtime



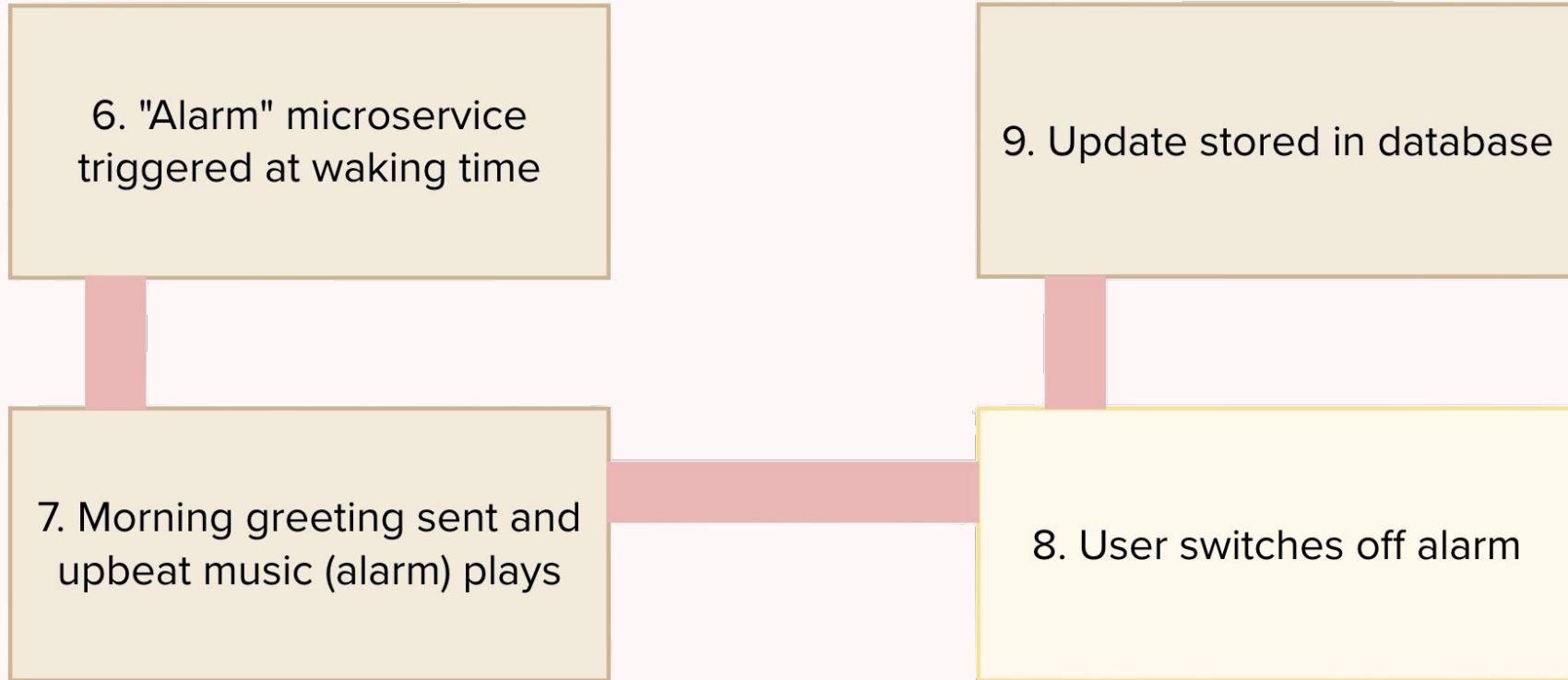
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Logical Dataflow: User Experience After Bedtime

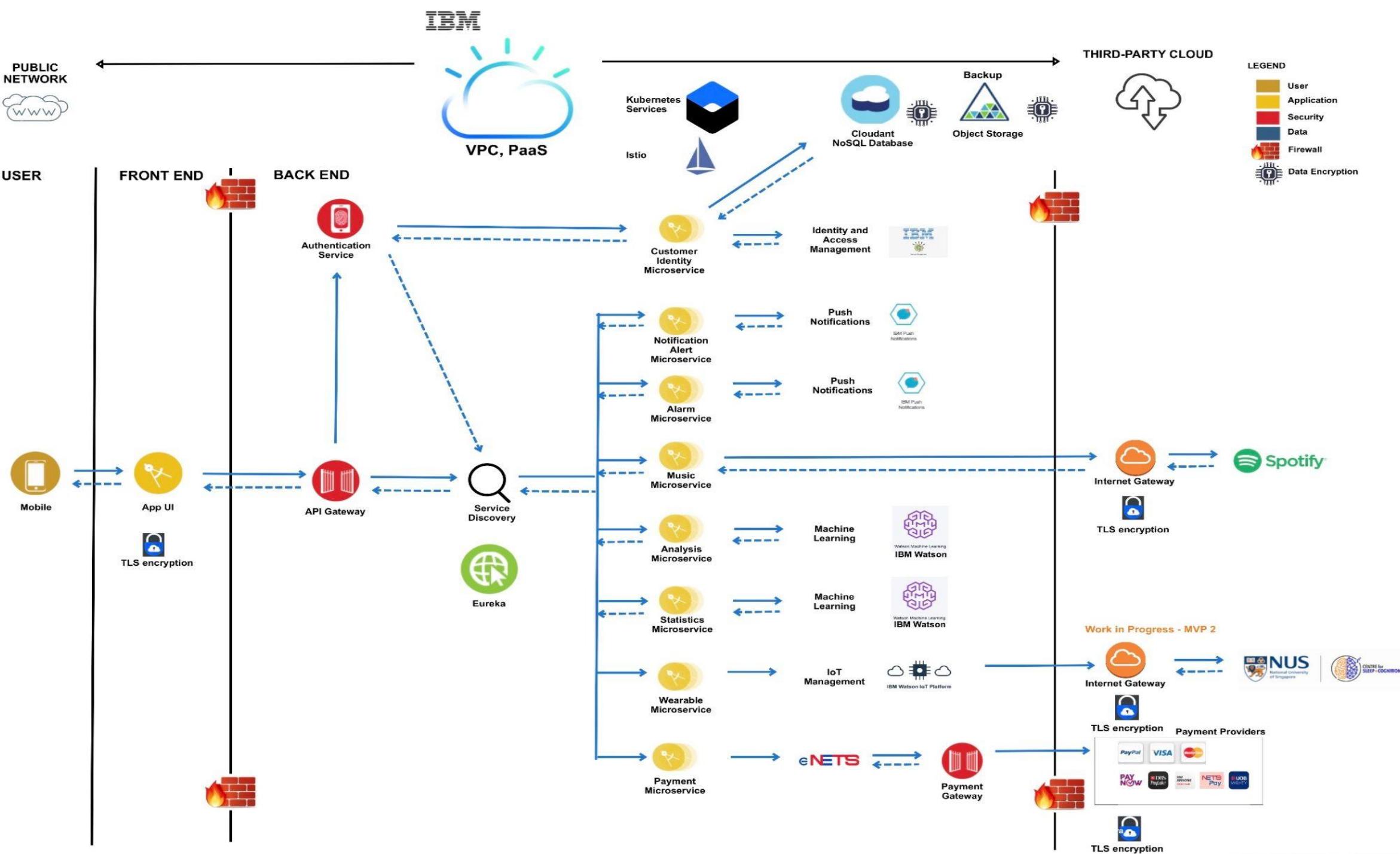


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Cloud & System Architecture

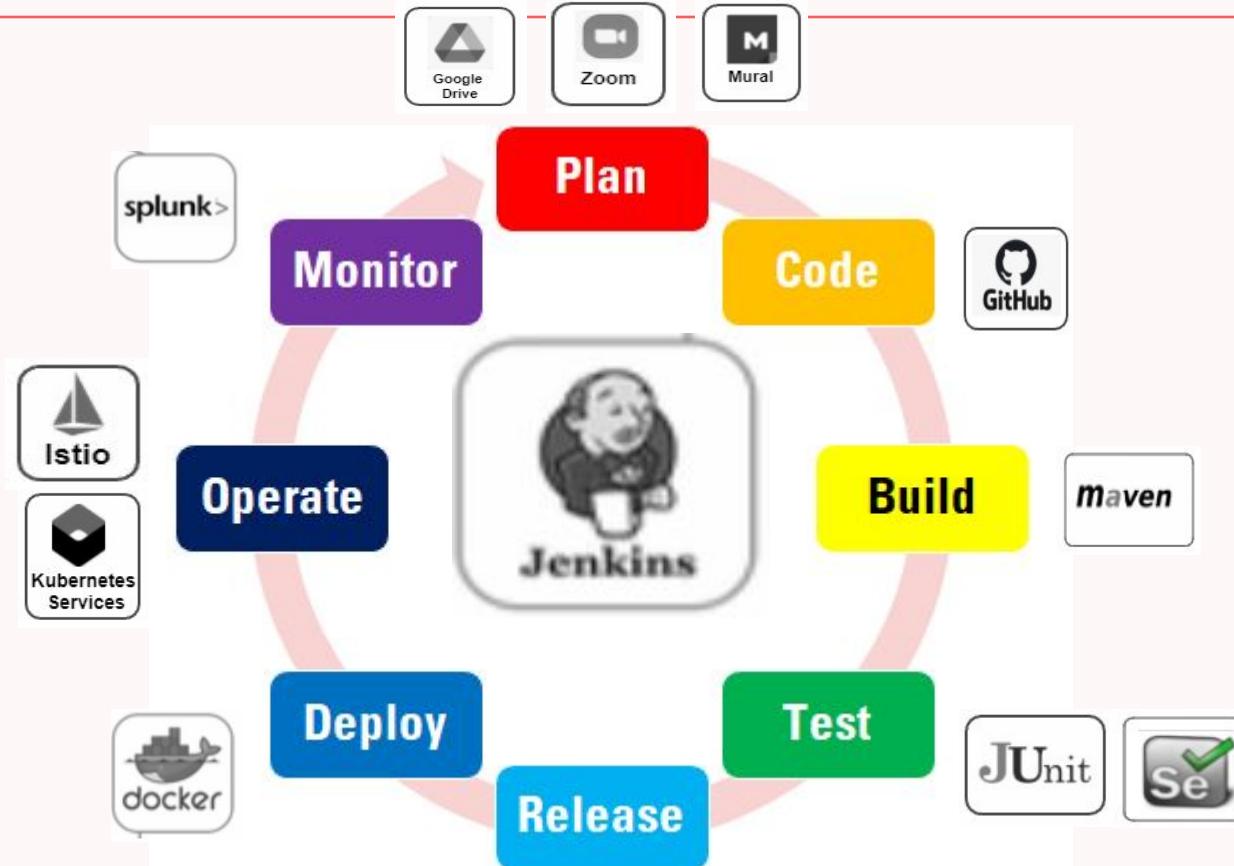
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DevOps SDLC & Tools Selection



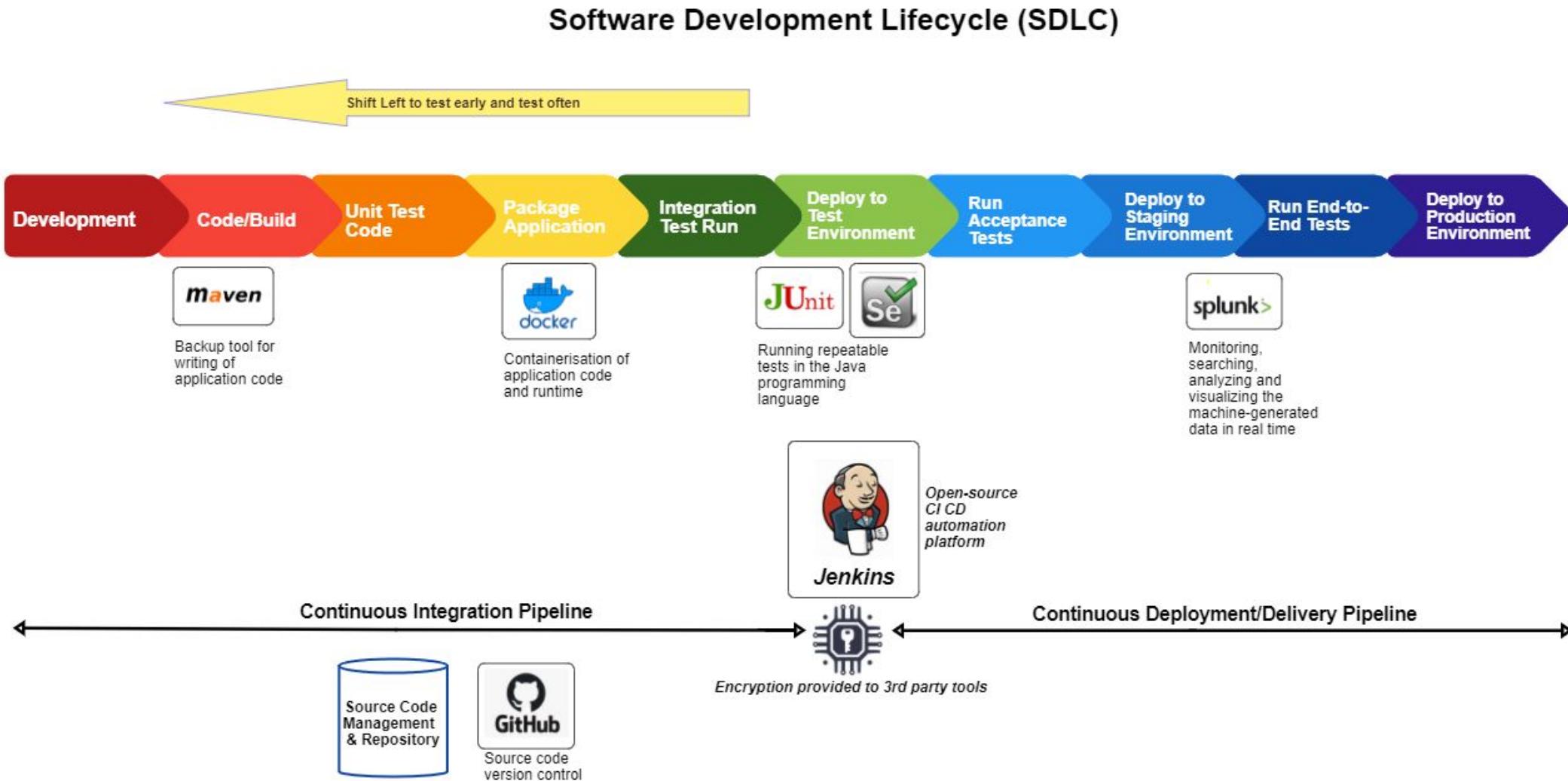
Objective: to achieve agility and automation



CI/CD Pipeline with Security Components



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Benefits of Cloud Computing



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Business scalability and flexibility

User-centric

Quality of security

Savings

Documentation control and monitoring



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Project Summary

Objective: Improve Sleep Routine for Adults Working From Home

iSleep is an innovative AI solution to enhance dietary, exercise and sleep routine for adults working from home

- Fast growing global sleep tech devices market

Unique Selling Proposition:

- Proprietary AI technology customised for each user's culture
- Collaboration with NUS Sleep and Cognitive Laboratory for diagnostic evaluation and tele-consultations with specialists at affordable value

Cloud Solution & DevOps:

Low costs of cloud services, while placing our users' needs at the very core of our business

Future Goals:

- Launch iSleep by June 2022
- Future releases from end 2022, with comprehensive sleep and health analysis with data gathered from the wearable device

Learning Reflections





Loretta
AI Specialist



Siang Khim
Business
Intelligence
Developer



Fazeria
Analytics
Consultant



Joel
Insights Analyst



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iSleep (Team 4)

Thank You



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