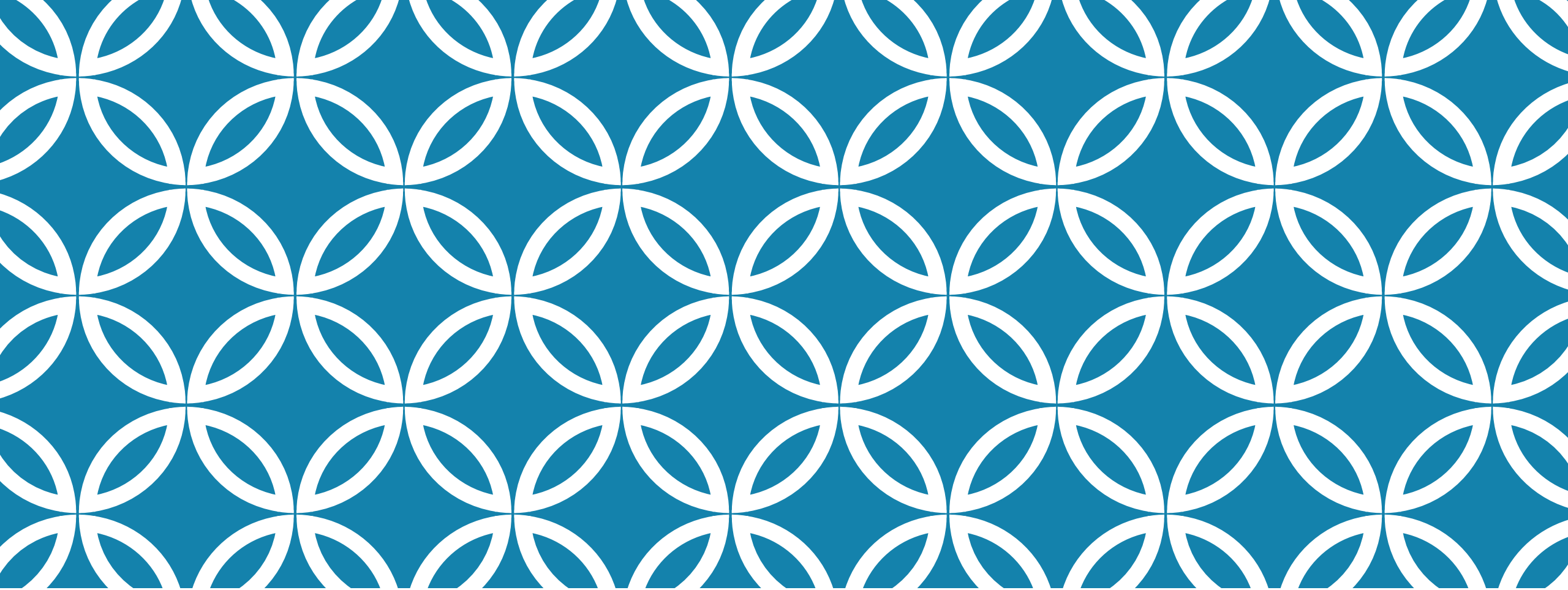


# TODD.AI

(An An ML approach for Connecting Parents to Toddler's Needs)

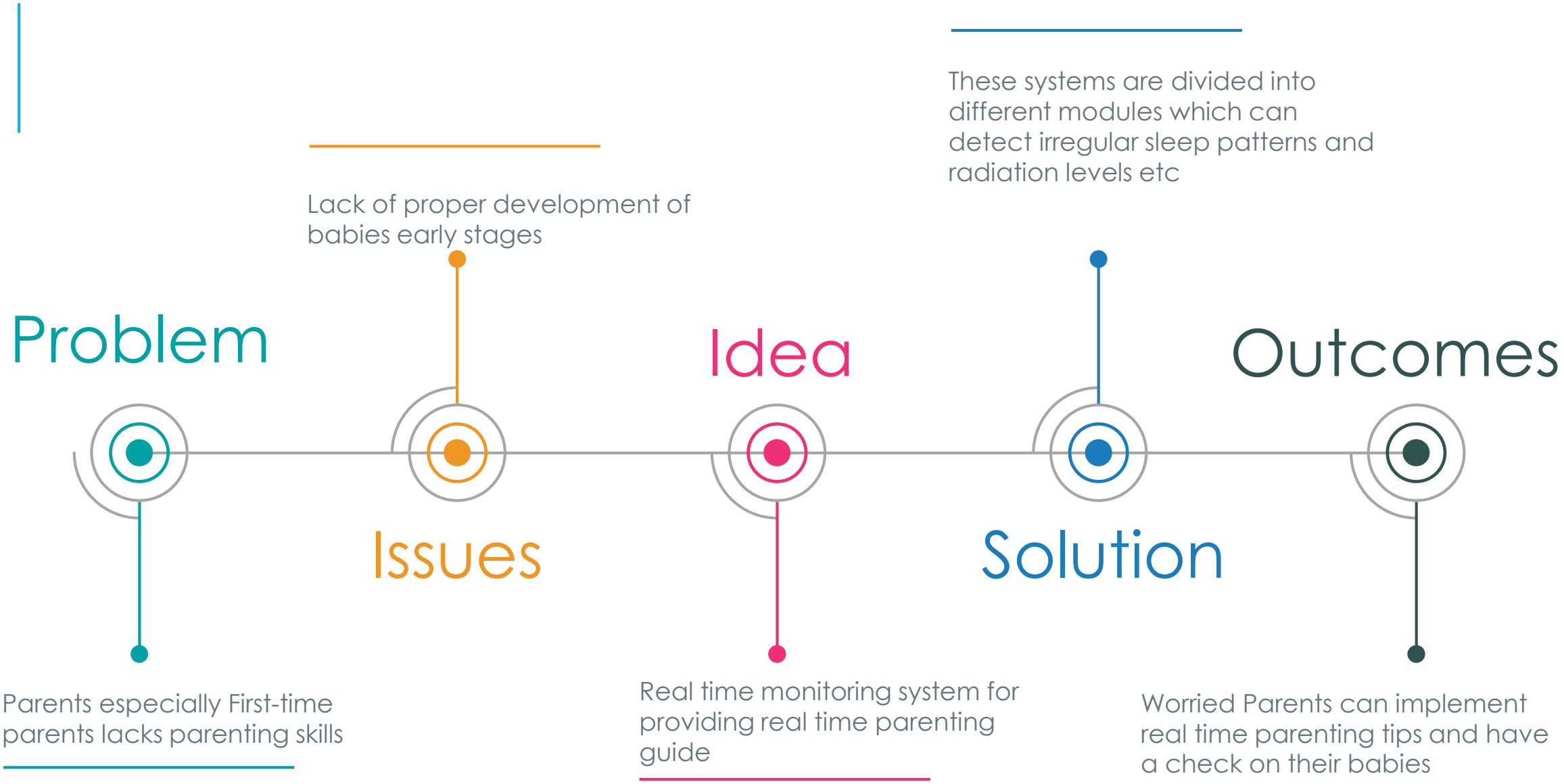
# PROBLEM ?

*Raising a family away from family is very hard and a problem which parents can't ignore especially for first time parents . There are numerous parents which doesn't have proper parenting guide and due to busyness of their schedule they can't really give too much attention to parenting. So , managing work and parenting becomes so difficult .*

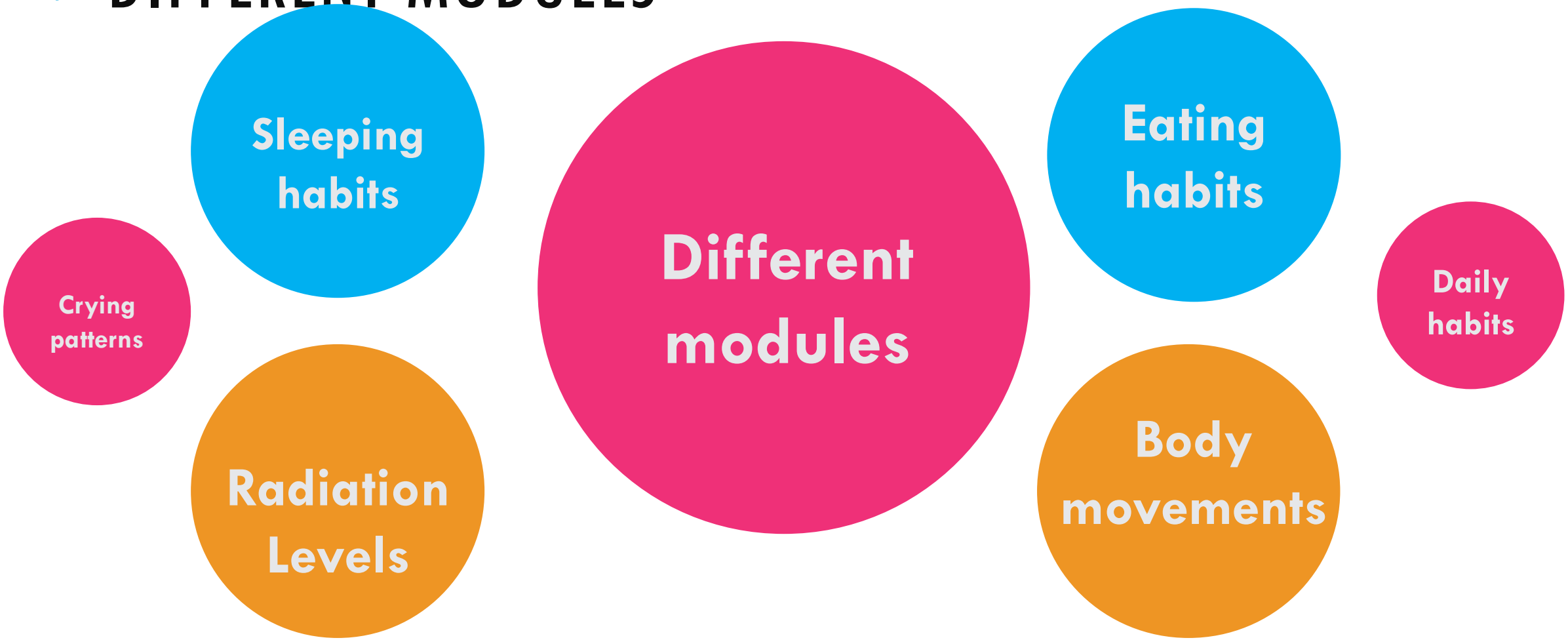
*Parents can't necessarily detect the emotions of their babies and they usually remain confused with their baby needs, this really creates hustle and lack of development in baby's early stages of development.*

# SOLUTION

*So , to bridge the gap between parents and their babies need , we propose a solution of real time monitoring system equipped with ML algorithms for babies and showing useful insights and ready to implement tips that can parents do in real time. So we have divided our real time system in different modules . One module of this system will detect sleeping patterns of babies and alert the parents when irregularity of sleep patterns is consistent . Another module will detect radiation level in babies surrounding and hence alert parents if radiation levels are significantly higher . Another modules will detect irregularities in eating patterns*


Problem
Parents especially First-time parents lacks parenting skills
Issues
Lack of proper development of babies early stages
Idea
Real time monitoring system for providing real time parenting guide
Solution
These systems are divided into different modules which can detect irregular sleep patterns and radiation levels etc
Outcomes
Worried Parents can implement real time parenting tips and have a check on their babies

# WE DIVIDED OUR MONITORING SYSTEM INTO DIFFERENT MODULES



# SLEEPING MODULE

01

## DATA ACQUISITION

DETECTING BABY'S SLEEP AND IT'S DURATION OF SLEEP

## ANALYSIS USING AI

CHECK FOR ANY IRREGULARITIES IN SLEEPING PATTERN AND PREDICTS REGULARITY SCORE

02

03

## ALERTING PARENTS

ALERT PARENTS WHEN REGULARITY SCORE DEVIATION FROM CERTAIN POINT IS CONSISTENT

# DATA ACQUISITION

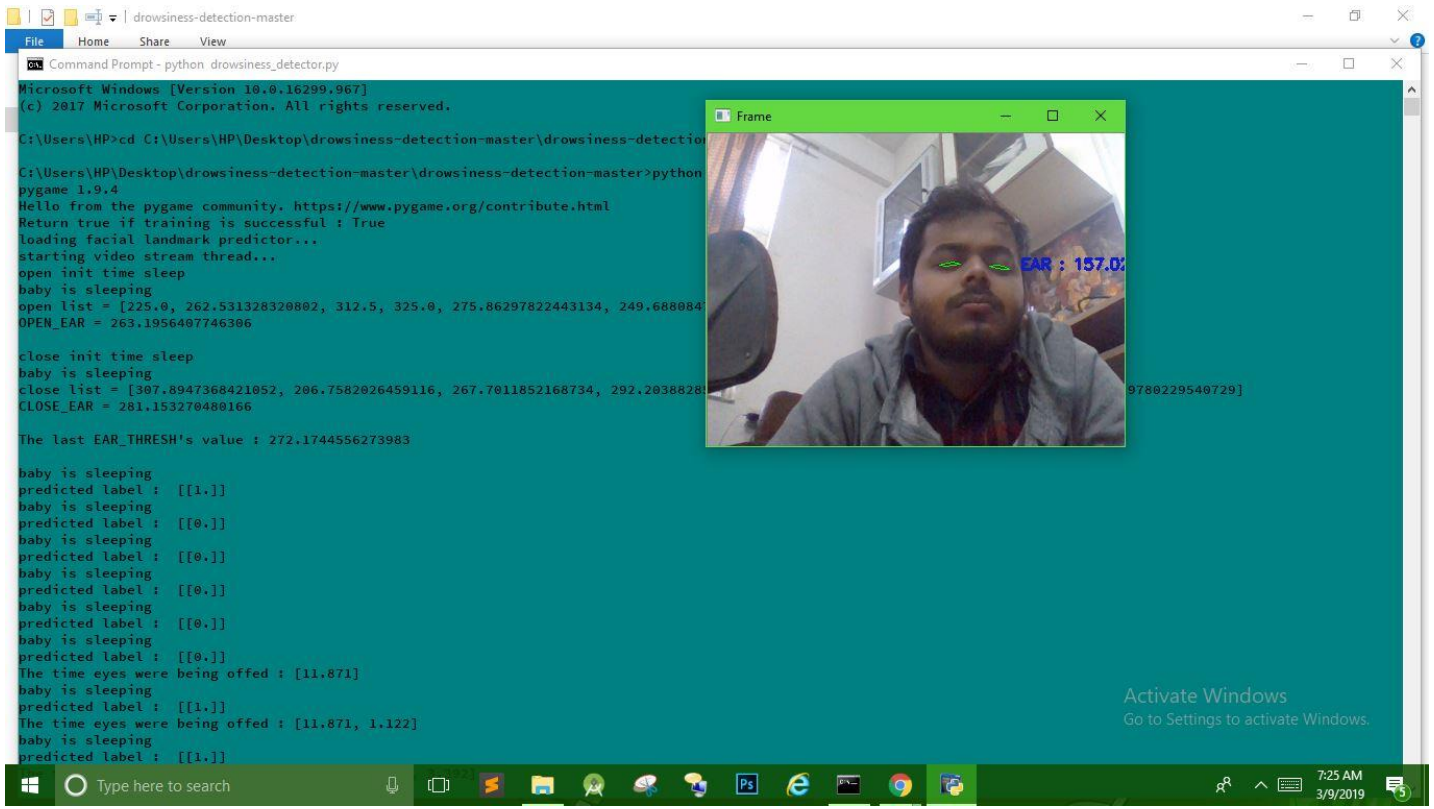
We will acquire two inputs which will

Fed into ML system to predict output

(Irregularity score)

Data acquired is as follows

- Sleeping duration
- No. of interval of sleep



# ORIGINAL DATASET

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FIELD1 | FIELD2 | FIELD3 | day down | time dow | day up | time up | FIELD8 | FIELD9 | FIELD10 | FIELD11 | FIELD12 |
| 2 | 18/06/201 | 18/06/2015 | 19:59:00 | 0 | 19:15 | 0 | 19:59 | | 18/06/201 | 18/06/201 | 0.802083 | Start date |
| 3 | 18/06/201 | 18/06/2015 | 22:35:00 | 0 | 22:10 | 0 | 22:35 | Not Past M | 18/06/201 | 18/06/201 | 0.832639 | 18/06/201 |
| 4 | 19/06/201 | 19/06/2015 | 04:38:00 | 1 | 0:01 | 1 | 4:38 | | 19/06/201 | 18/06/201 | 0.923611 | |
| 5 | 19/06/201 | 19/06/2015 | 09:01:00 | 1 | 5:43 | 1 | 9:01 | | 19/06/201 | 18/06/201 | 0.940972 | |
| 6 | 19/06/201 | 19/06/2015 | 15:39:00 | 1 | 13:50 | 1 | 15:39 | | 19/06/201 | 19/06/201 | 1.000694 | |
| 7 | 19/06/201 | 19/06/2015 | 22:36:00 | 1 | 22:01 | 1 | 22:36 | | 19/06/201 | 19/06/201 | 1.193056 | |
| 8 | 19/06/201 | 20/06/2015 | 00:22:00 | 1 | 23:20 | 2 | 0:22 | Past Midn | 19/06/201 | 19/06/201 | 1.238194 | |
| 9 | 20/06/201 | 20/06/2015 | 03:02:00 | 2 | 1:21 | 2 | 3:02 | | 20/06/201 | 19/06/201 | 1.375694 | |
| 10 | 20/06/201 | 20/06/2015 | 05:31:00 | 2 | 3:17 | 2 | 5:31 | | 20/06/201 | 19/06/201 | 1.576389 | |
| 11 | 20/06/201 | 20/06/2015 | 10:30:00 | 2 | 7:15 | 2 | 10:30 | | 20/06/201 | 19/06/201 | 1.652083 | |
| 12 | 20/06/201 | 20/06/2015 | 13:27:00 | 2 | 12:27 | 2 | 13:27 | | 20/06/201 | 19/06/201 | 1.917361 | |
| 13 | 20/06/201 | 20/06/2015 | 18:27:00 | 2 | 17:57 | 2 | 18:27 | | 20/06/201 | 19/06/201 | 1.941667 | |
| 14 | 20/06/201 | 20/06/2015 | 19:36:00 | 2 | 18:45 | 2 | 19:36 | | 20/06/201 | 19/06/201 | 1.972222 | |
| 15 | 20/06/201 | 20/06/2015 | 20:36:00 | 2 | 20:00 | 2 | 20:36 | | 20/06/201 | 20/06/201 | 2.015278 | |
| 16 | 20/06/201 | 20/06/2015 | 22:06:00 | 2 | 21:00 | 2 | 22:06 | | 20/06/201 | 20/06/201 | 2.05625 | |
| 17 | 20/06/201 | 21/06/2015 | 03:58:00 | 2 | 23:50 | 3 | 3:58 | Past Midn | 20/06/201 | 20/06/201 | 2.126389 | |
| 18 | 21/06/201 | 21/06/2015 | 08:26:00 | 3 | 6:07 | 3 | 8:26 | | 21/06/201 | 20/06/201 | 2.136806 | |
| 19 | 21/06/201 | 21/06/2015 | 10:20:00 | 3 | 9:35 | 3 | 10:20 | | 21/06/201 | 20/06/201 | 2.229861 | |
| 20 | 21/06/201 | 21/06/2015 | 13:57:00 | 3 | 11:45 | 3 | 13:57 | | 21/06/201 | 20/06/201 | 2.302083 | |
| 21 | 21/06/201 | 21/06/2015 | 17:57:00 | 3 | 17:35 | 3 | 17:57 | | 21/06/201 | 20/06/201 | 2.4375 | |
| 22 | 21/06/201 | 21/06/2015 | 22:27:00 | 3 | 22:05 | 3 | 22:27 | Not Past M | 21/06/201 | 20/06/201 | 2.51875 | |

# REFINED DATASET

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Day | No_of_times | Sleep_frac | Irr_score |
| 2 | 0 | 2 | 0.082143 | 0.56160725 |
| 3 | 1 | 5 | 0.763095238 | 1.822321429 |
| 4 | 2 | 9 | 1.08452381 | 3.063392857 |
| 5 | 3 | 6 | 0.504761905 | 1.878571429 |
| 6 | 4 | 6 | 0.607142857 | 1.955357143 |
| 7 | 5 | 8 | 1.48452381 | 3.113392857 |
| 8 | 6 | 5 | 0.551190476 | 1.663392857 |
| 9 | 7 | 5 | 0.567857143 | 1.675892857 |
| 10 | 8 | 5 | 0.66547619 | 1.749107143 |
| 11 | 9 | 8 | 0.633333333 | 2.475 |
| 12 | 10 | 7 | 0.873809524 | 2.405357143 |
| 13 | 11 | 7 | 0.852380952 | 2.389285714 |
| 14 | 12 | 6 | 0.670238095 | 2.002678571 |
| 15 | 13 | 3 | 0.382142857 | 1.036607143 |
| 16 | 14 | 5 | 0.595238095 | 1.696428571 |
| 17 | 15 | 3 | 0.479761905 | 1.109821429 |
| 18 | 16 | 5 | 0.6 | 1.7 |
| 19 | 17 | 6 | 0.79047619 | 2.092857143 |
| 20 | 18 | 5 | 0.771428571 | 1.828571429 |
| 21 | 19 | 8 | 0.910714286 | 2.683035714 |
| 22 | 20 | 4 | 0.575 | 1.43125 |

# IRREGULARITY SCORE

Now , the data we acquired from the live video is used to calculate irregularity score

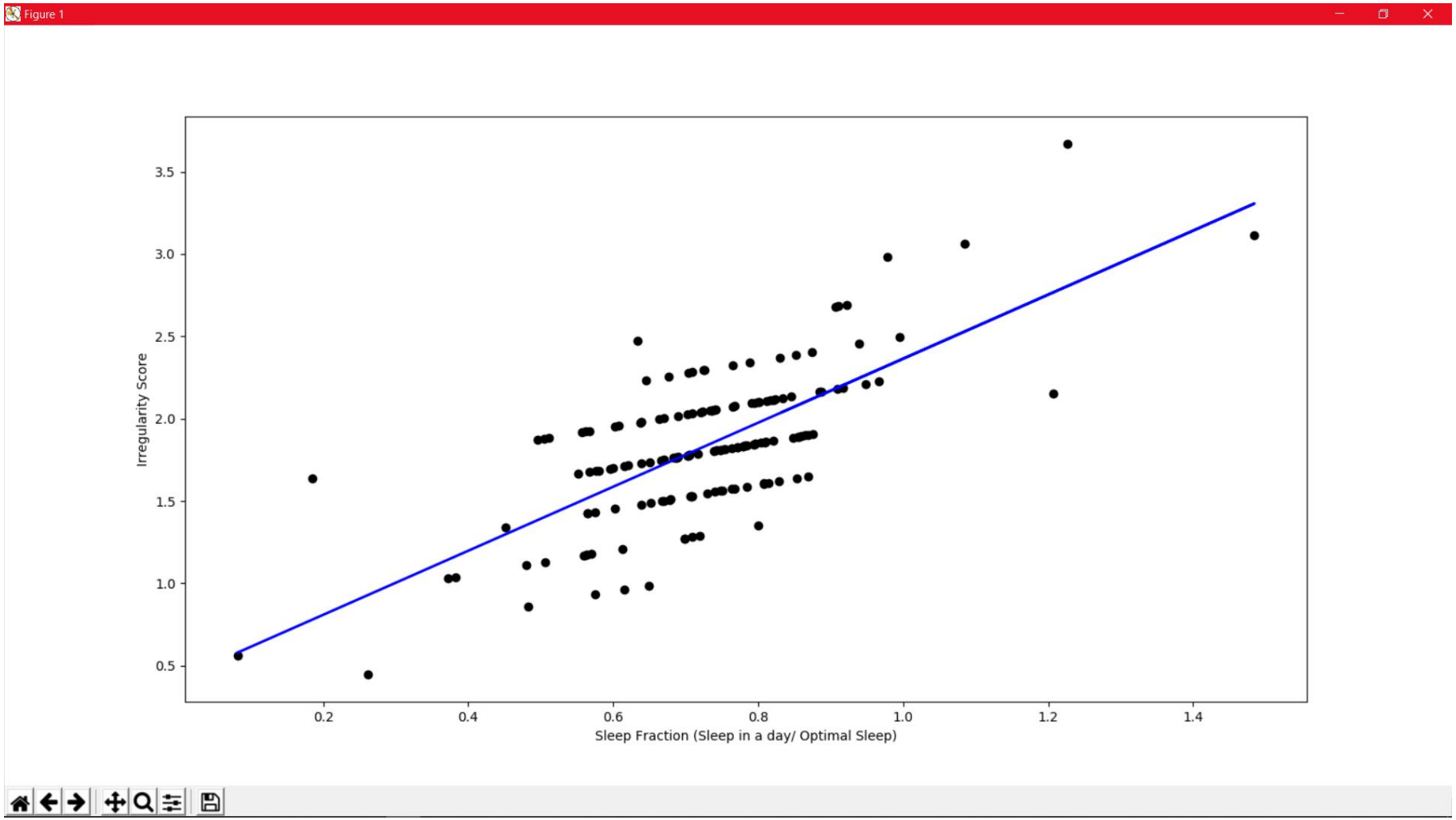
Irregularity score is defined as

$$IR = (1 * \text{no. of interval of sleep} + 3 * \text{sleep duration}) / 4$$

Sleep duration : Minutes baby sleeps in a day / optimal sleep of baby

This score is assigned to each day and that help to analyse whether baby is deviation consistently from optimal score

# VISUALIZATION OF PREDICTIONS



# WORKFLOW

**Finding irregularity score**

System will fed input to ml algorithm to find IR

0

**Irregularity score**

System will calculate IR

1

**CONSISTENT DEVIATION**

If irregularity score is deviating consistently , we will alert parents

2

**TIPS AND INSIGHTS**

Tips and useful insights will be given to parents

3

**VISUALIZATION**

Analysis chart will be designed for better understanding

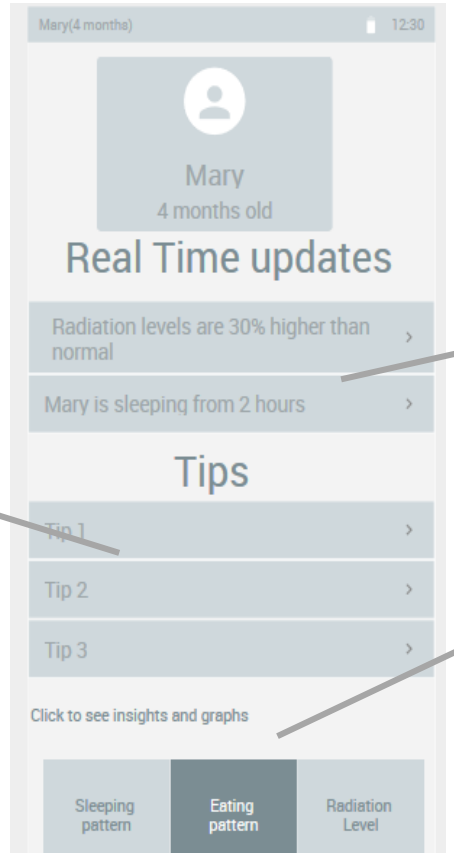
4

This is how we implemented our first module and likewise we will implement different module to help parents at different levels and situations

# WEB APP

Another part of the project is from user point of view is to give good User experience

By showing data in charts and providing simplistic and ready to implement solutions

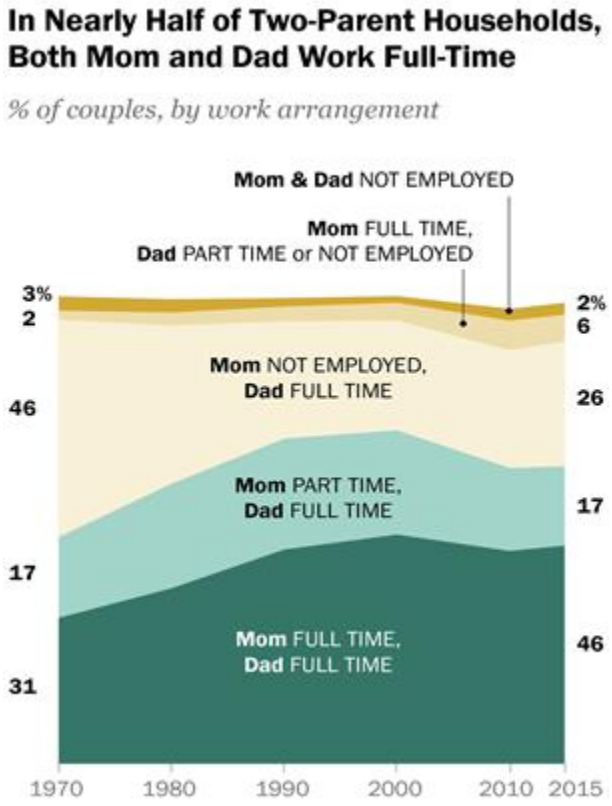



Ready to implement tips

Real time updates

All modules

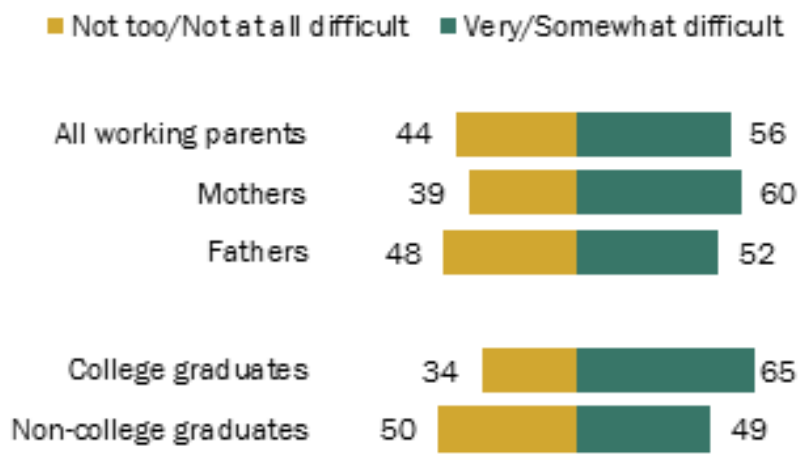
# USING TODD.AI AS PRODUCT




According to data collected by Pew research center 46% of parents are both working and 68% parents live far away from families . So todd.ai have a huge market potential .

## Six-in-Ten Working Moms Say Balancing Job and Family Is Difficult

*% saying it is ____ for them to balance the responsibilities of their job with the responsibilities of their family*



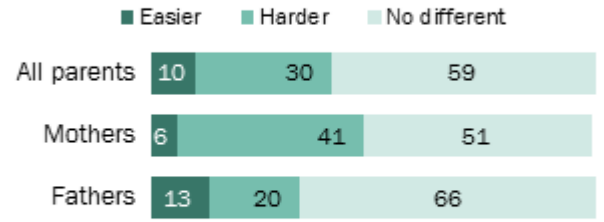

Note: Based on all full- or part-time working parents (n=1,411). College graduates are those who have a bachelor's degree or more education. "Don't know/Refused" responses not shown.

Source: Pew Research Center survey of parents with children under 18, Sept. 15-Oct. 13, 2015

PEW RESEARCH CENTER Q33

## Moms More Likely to Say Parenting Interferes with Career Advancement

*% who say being a working parent has made career advancement ...*




Note: Based on all full- or part-time working parents (n=1,411). Voluntary responses of "Depends" and "Don't know/Refused" not shown.

Source: Pew Research Center survey of parents with children under 18, Sept. 15-Oct. 13, 2015

PEW RESEARCH CENTER Q34

Todd.ai will definitely help moms and especially first time moms who wants to pursue their carrer