IMAGINE IOT
PROTOTYPE CHALLENGE

SMART KINDERGARTEN

Story

Summary

A kindergarten teacher needs a solution to monitor children’s day and to inform in real time parents how are their children.

Storyline

There are around 20 children in one group. At the end of a day parents want to know many things: if their children ate and how much, if they slept, how they behaved, if there succeed in something etc. For teacher it’s many things to remember. Besides sometimes parents came at the same time so it’s difficult to talk to them separately. Moreover some children stay at kindergarten more than 8 hours, and a teacher works 8 hours a day. When she leaves teachers who stays longer do not have enough knowledge. A system to pass all necessary information about each child to parents would help a lot a teacher and would give parents additional insights of their children’s day so that they can make best parenting decisions at home.
Persona One

Marta
Kindergarten Teacher

“I like when my children leave kindergarten with big smiles. At the end of a work day I’m exhausted but fully satisfied with my job.”

About

• 31, single, 5 years of experience as a teacher in kindergarten
• Very active with skills in art and music
• On a daily basis cooperates with one teacher help
• A main contact between parents and kindergarten

Responsibilities

• Organizing children’s playtime
• Teaching children new things
• Making sure children have ate meals
• Forwording most important information about children to their parents

Main Goals

• Making children learn new things and become more independent
• Making parents comfortable that they leave children in best hands

Needs

• I need to know if children will be present
• I need to have a plan for games and lessons for each day
• I need to remember all children’s daily activity

Pain Points

• Need to remember all children’s daily activity to forward to parents
• Handle conflicts between children
• Provide interesting games for children to learn by play
Point of View

As a Kindergarten teacher

I need a way to inform parents about their children’s day with as many details as possible
so that parents can make best parenting decisions at their homes
<table>
<thead>
<tr>
<th>ACTIONS</th>
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</thead>
<tbody>
<tr>
<td>• Come to work</td>
<td>• First children arrive</td>
<td>• Playtime in groups</td>
<td>• Nap time</td>
<td>• Dinner</td>
<td>• Playtime</td>
</tr>
<tr>
<td>• Check messages on kindergarten’s phone</td>
<td>• Breakfast</td>
<td>• Learning time</td>
<td></td>
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<td>Parents pick up their children</td>
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<th>MINDSET</th>
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<td>‘Rosie is in bad mood today, maybe we’ll play her favorite game’</td>
<td>‘I came up with great game for today’s lesson’</td>
<td>‘Katie changed her clothes by herself. Good job! I need to encourage his parents to work with him at home’</td>
<td>‘Rosie spilled soup on herself, need to remember to tell his parents we need more clean clothes’</td>
<td>‘Let’s try the same game that worked yesterday maybe children are not bored with it yet’</td>
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<td>‘Thomas got chicken pox and won’t be present today, need to remember to notify rest of parents’</td>
<td>‘We have eggs for breakfast, I think Kate doesn’t like eggs, need to figure out something for her’</td>
<td>‘Jamie learns so fast need to encourage his parents to work with him at home’</td>
<td>‘Jamie couldn’t sleep today, maybe because he didn’t bring his teddy with him’</td>
<td>‘Jamie ate broccoli today. That’s new!’</td>
<td>‘Can’t remember if Alex ate whole lunch or just half’</td>
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<td>• Kindergarten</td>
<td>• Parents directly</td>
<td>• Children</td>
<td>• Children</td>
<td>• Food</td>
<td>Parents Children</td>
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<td>• Parents via phone</td>
<td>• Children</td>
<td>• Toys</td>
<td>• Beds</td>
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<td>• Catering</td>
<td>• Other teachers</td>
<td>• Clothes</td>
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Prototype

IoT device for smart kindergarten is activity tracker/watch that every child would wear during the day. It measures things like:

- Arriving at kindergarten
- Activity – steps
- Sleep time
- Proximity sensor to other watches – to determine relations between children
- NFC reader – to receive actions from teacher
- Microphone – to add comments for actions
- Skin temperature - to react if child has fever and if it’s dressed according to the weather

Teacher records actions with different NFC tags are used on child’s smartwatch when certain event happens.

When child:

- Ate breakfast
- Ate dinner – meat
- Ate dinner – vegetables
- Ate dessert
- Achieved something special – learned new thing, helped a friend
- Wasn’t behaving very nice
- Learned a new thing
- Memo for parents

Each action can be enhanced with short details recorded with watch’s microphone. Message is later transformed via speech to text into comment.
Teachers View of a child with details of a day with data collected by child’s activity tracker

Jacob Clark, age 4  Present – arrived 08.34

Parents: Kate Clark, Thomas Clark

Contact phones: + 44 123 456 789 Kate, +44 987 654 321 Thomas

Allergy: gluten

Preferences: do not like yellow socks, sleeps with his teddy

Activities

- 3452 steps
- 10:23 Tied a shoe
- 14:45 Drew nice picture

Top 3 Friends
1. John
2. Kate
3. Peter

Messages 2

Other

1 h 32 min
12.02 -13.30

Avg. 36.8°C
Teachers view of a message from a parent that child will be absent

Kate Ross, age 3  Absent
Parents: Margaret Ross, Simon Ross
Contact phones: + 44 123 456 789 Margaret, +44 987 654 321 Simon
Allergy: none
Preferences: Pajamas must be pink

From: Margaret
Subject: Kate is sick
Message:
Kate got chicken pox, she will absent till 11.11.2016