**PROJECT TITLE:** **Project Phase-I – Problem-Solution fit** **TEAM ID:PNT2022TMID26995**

Define CS, fit into

### 1. CUSTOMER SEGMENT(S) — CS

Any swimmers and kids/elderly people who are at the initial stage of swimming can use this project to safeguard themselves from accidental drowning by the help of this device and pool lifeguard.

### 6. CUSTOMER CONSTRAINTS — CC

In this a best Pulse Rate sensor is used to detect the pulse rate of every swimmer it helps to prevent fro drowning accident .

### 5. AVAILABLE SOLUTIONS — AS

Prediction process take place only after drowning But we used Deep learning algorithm for Pulse rate detection so that there is a chance for predicting the drowning accident at earlier stage

**Merits :** predict before drowning under water

**Demerits** : If network is not available then it doesn't give a result .

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Explore AS,

Focus on J&P, tap into BE, understand

### 2. PROBLEMS — J&P

- Beginners, often feel it difficult to breathe underwater which causes breathing trouble which in turn causes a drowning accident in swimming pool
- As water is much denser than air, so there is much more resistance preventing people from being able to move through it quickly and freely so sometimes even the experienced people will find difficulty to swim .

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### 9. PROBLEM ROOT CAUSE — RC

- The main problem is an alert is being sent to Lifeguard only after the person is drowned down .
- however, they cannot save a person before drowning down

### 7. BEHAVIOUR — BE

- Saving people life
- Take effective action in emergency situation
- Attentive and energetic

Focus on J&P, tap into BE, understand

Identify strong TR &

### 3. TRIGGERS — TR

1. Detect the pulse Rate of swimmer
2. Send an alert message to the LIfeGuard
3. Helpful for earlier prediction of drowning

### 4. EMOT IONS: BEFORE / AFT ER — EM

Before the detection of active drowning there were many drowning accident worldwide after this ,they can only save the drowning person after he/she is drowned down by sending an alert to Lifeguard

### 10. YOUR SOLUTION — SL

- Swimming is one of the best exercise that reduce the stress but because of certain reason the drowning accident take place
- In our project we used pulse rate detection so there is an chance for earlier prediction and help to avoid the drowning accident.

### 8. CHANNELS of BEHAVIOUR — CH

1. ONLINE
   1. Accurate pulse rate detection

8.2 OFFLINE

Unaccurate pulse rate detection

Extract online & offline CH of



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