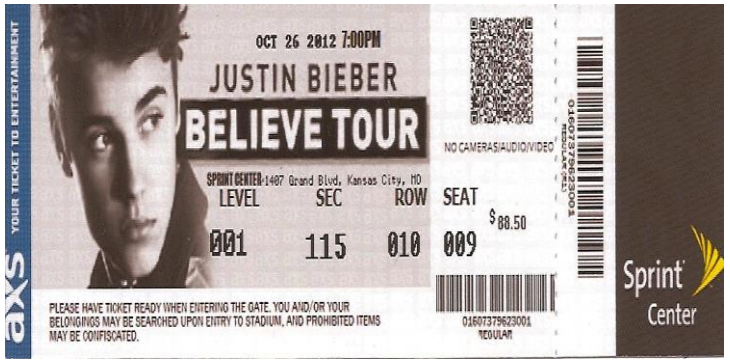
Image Based Reminder

Design concept:

- Majorty of the reminders are text-based notes with a time alarm. However, it is not enough to handle nowadays complex lifestyle. We proposed to develop an application that could provide user vivid reminders by inputting photos. It is enable to save user plenty of time and improve reminder's deficientness.

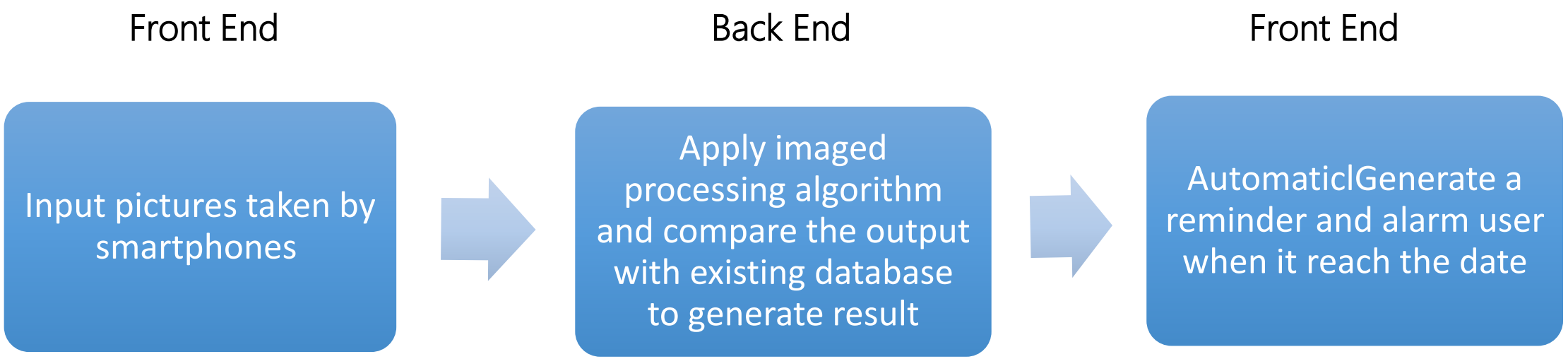
Real life Examples



Reminder #1
Justin BieBer
2012-10-26
001-115-010

Reminder #2
Broccoli
Suggest expiration date:10

High level design flow



Design innovation

- We will mainly focus on the **image processing algorithm.** The algorithm will have two catagroies: **Imaged base**(human, animal, food) and **Text Base**(extracted from photo).
- Machine learning will also be applied during the pre-loading stage.
- Since the algorithm requires a huge amount of calculation, GPU acceleration will be used to improve the performance of the algorithm.
- A simple webserver and mobile application will be designed.

Design innovation

- The team will select OpenCV(C++ Version) to implement the image processing algorithm ,since it is a open source library and it has the acceleration support for OpenCL from AMD or Cuda from NVidia.

Design Challenge and potential solution

- The backend requires a large amount of data. It will take long time during the matching stage. If machine learning is applied, the amount of data will grow as well..
- In order to optimize the matching stage, GPU acceleration, Multi-threading will be the potential hardware solution. However, internal category based on the Image type will be considered. For example, Imaged base or text base(extract text). More research and discussion need to be done.

Preparation need to be done.

- Do some research about the OpenCV regards to the performance of Cuda or opencl.
- Find some research papers regards to the image processing.
- Is there a difference between text capture and object capture in the image processing? –solve the category issue