MICHIGAN STATE
UNIVERSITY

Team Meijer Project Plan

The Capstone Experience

Team Meijer

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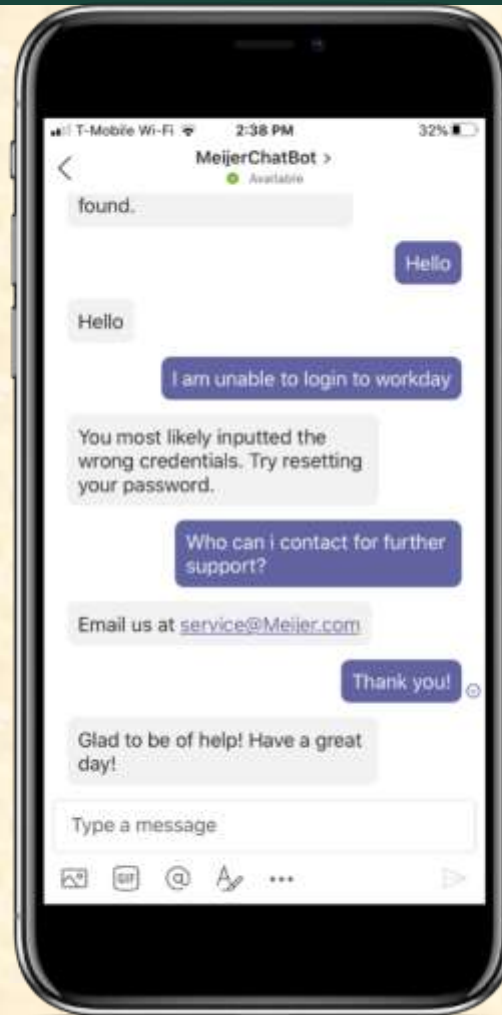
Fall 2020

From Students…
…to Professionals

Functional Specifications

- Automated internal support (for employees)
- Reduce workload for support technicians
- Learns as new problems arise
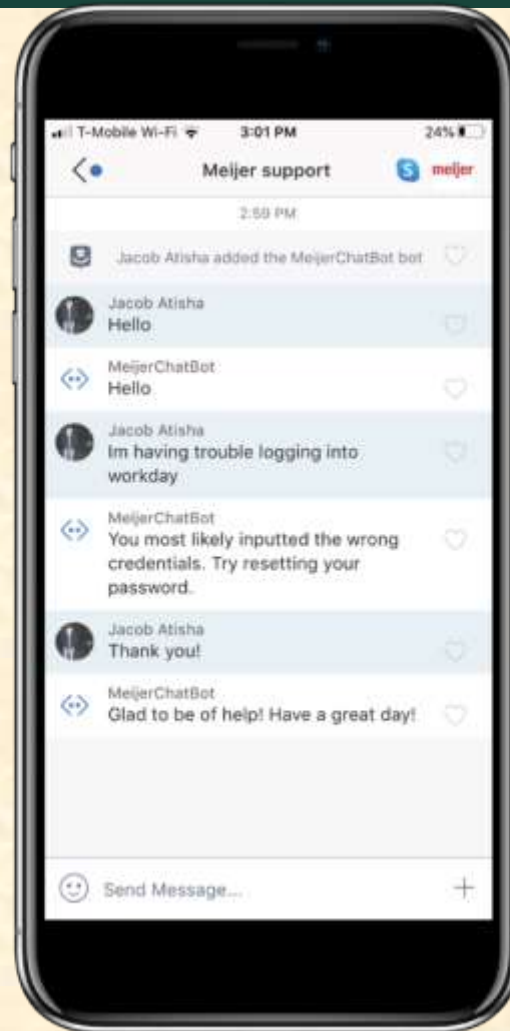- Knowledge Base built on existing support logs

Design Specifications

- Supports a variety of channels
- Simple user experience & easily accessible
- Text & speech recognition
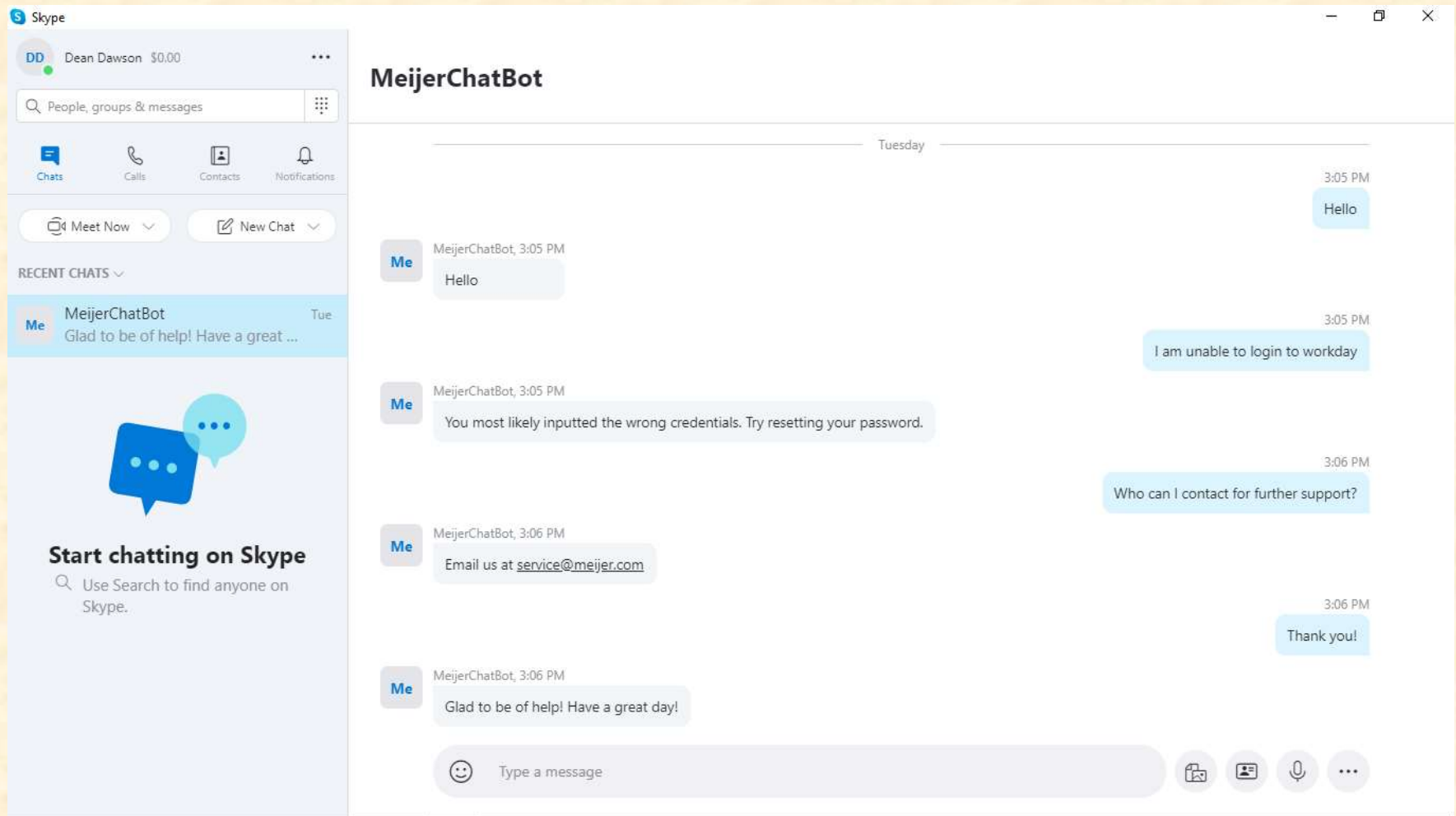- Human-like conversation
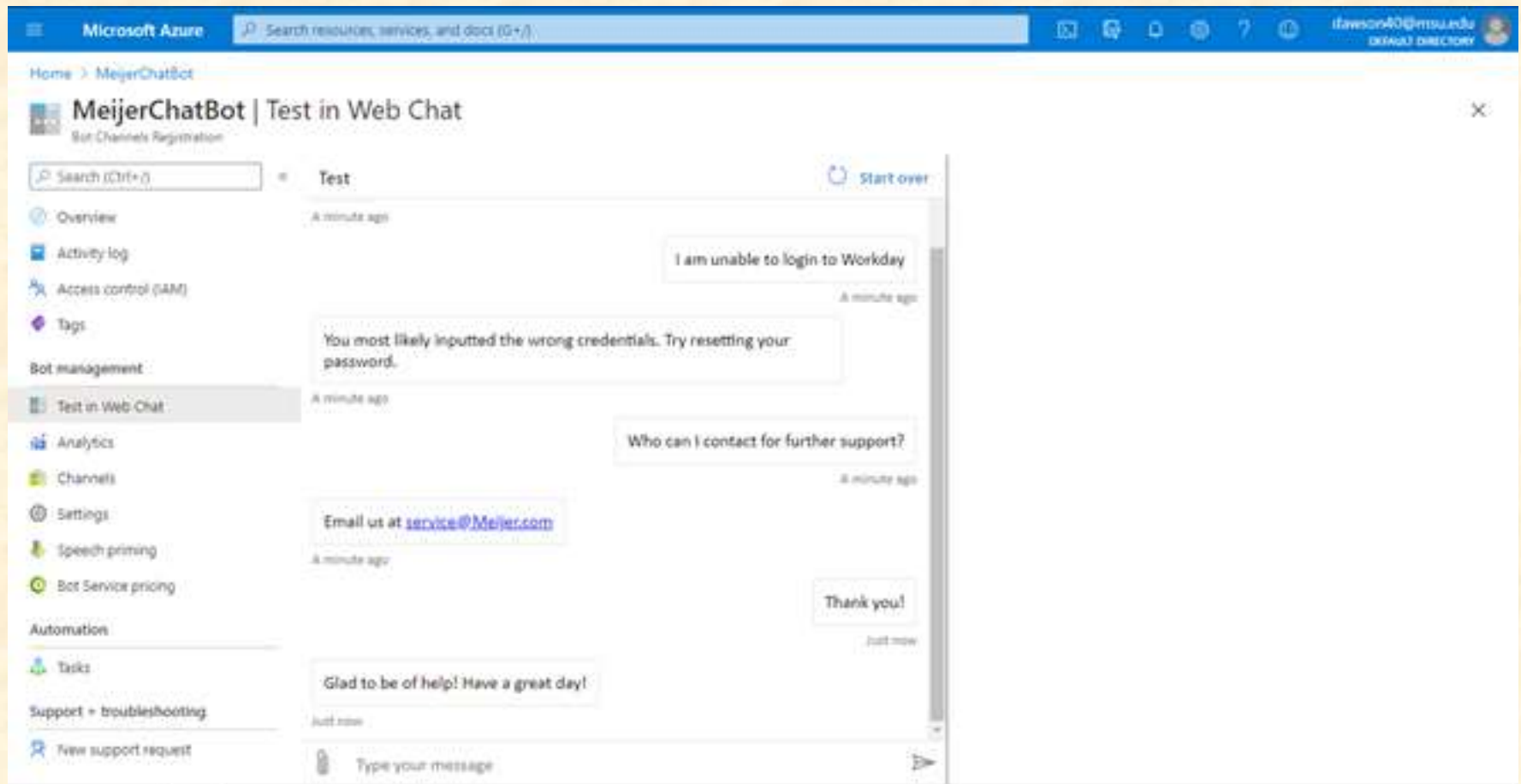
Screen Mockup: Microsoft Teams

Screen Mockup: GroupMe

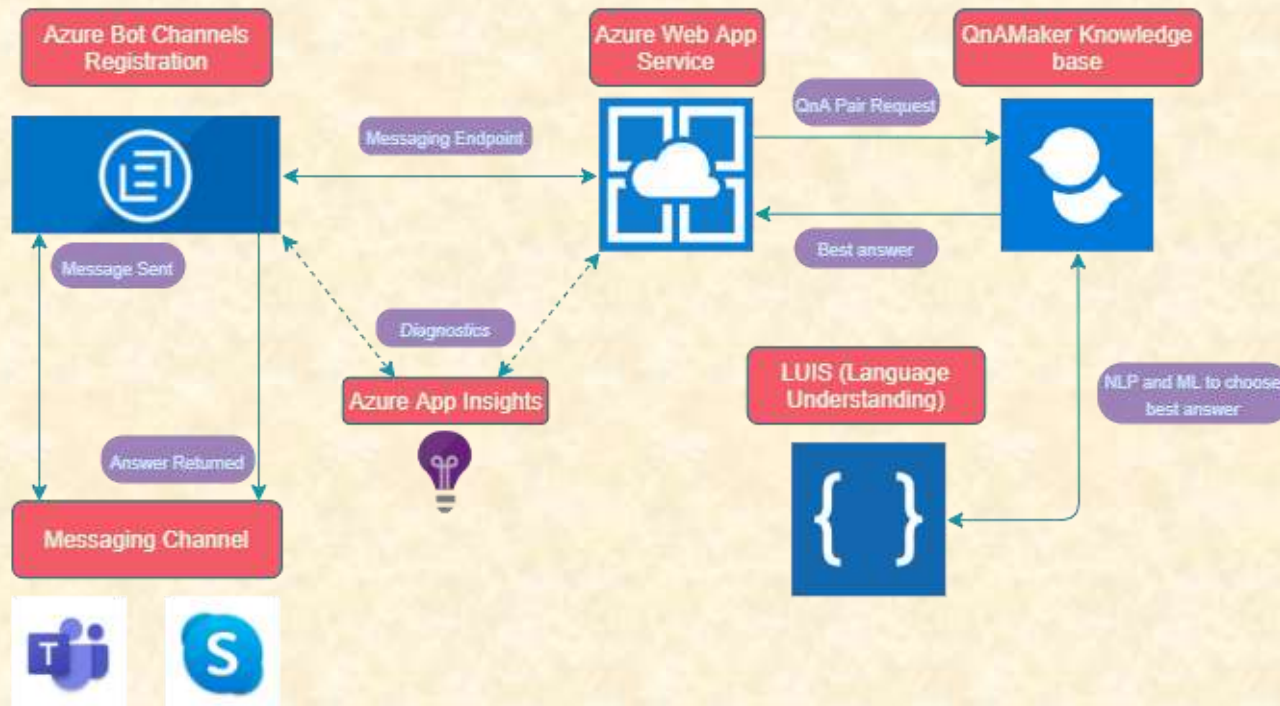# Screen Mockup: Skype

Screen Mockup: Web Application

Technical Specifications

- QnA Maker backend (knowledge base)
- LUIS (Language Understanding Intelligence Services)
- Microsoft Azure Bot Channels Registration
- Microsoft Cognitive Serivces
- Azure Application Insights (diagnostics)

System Architecture

System Components

Software Platforms / Technologies

- Microsoft Azure DevOps

- Bot Emulator

- Visual Studio

- .NET Core

- LUIS (Language Understanding Services)

- Git Version Control

- Excel

Risks

- **Risk 1: Redirection of Unknown Questions**
  - This scenario would arise given the case when a user asks a question that is currently not in the knowledge base to the chatbot.
  - <u>Mitigation</u>: Facilitate a workflow that allows for the intervention of an IT Helpdesk associate that can further assist the user, given the case when a question/incident could not be resolved by the chatbot.

- **Risk 2: Voice Chat Integration into Instant Messaging (IM) Platforms**
  - The open source APIs that are available are mostly provided via Python. Furthermore, some of the IM platforms that the chatbot will be hosted on does not support the capability of voice chat.
  - <u>Mitigation</u>: Clearly specify the platforms where voice chat will be available and research potential pipelines that may help with connecting Python APIs to C#.

- **Risk 3: Enabling Periodic Updates of Knowledge Base**
  - Without proper updates to the knowledge base, there will be an increasing number of unanswerable questions which must be avoided at all costs. The QnA Maker portal allows the developer to import only .tsv or .xlsx files which prevents directly linking Meijer's existing knowledge base over to this platform.
  - <u>Mitigation</u>: Create a pipeline that consists of the IT Helpdesk team updating a common excel file containing all questions and answers and the chatbot team automating the data load process that updates the QnA Maker knowledge base.

Questions?