

MEDICAL
INTELLIGENCE
SOLUTIONS FOR
BUSY LIFE
SCIENCE
PROFESSIONALS



The Next Phase Inc. Capstone Internship

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TODAY'S DISCUSSION

- About the Company
- Project
- My Role during the Internship
- Technical Skills Developed
- Challenges
- Relevant Coursework
- What I have learned

TOPICS
TO
COVER



THE COMPANY

**PROVIDES CUSTOMIZED
SERVICE SOLUTIONS IN
MEDICAL RESEARCH**

- Emails
- Feeds
- Mobile Apps



MedIntelliBase[®]

GOALS

1. Upgrade automation codebase from Python 2.7 to Python 3.5.
2. Create user-friendly application that content managers can interact with effortlessly.
3. Redesign web templates on the automation website (UI) and increased search tool features.
4. Implement Push Notification Feature on both Android/iOS devices.

INTERNSHIP POSITION ROLES

- Front End Web Development
- Back End Web Development
- Mobile App Research

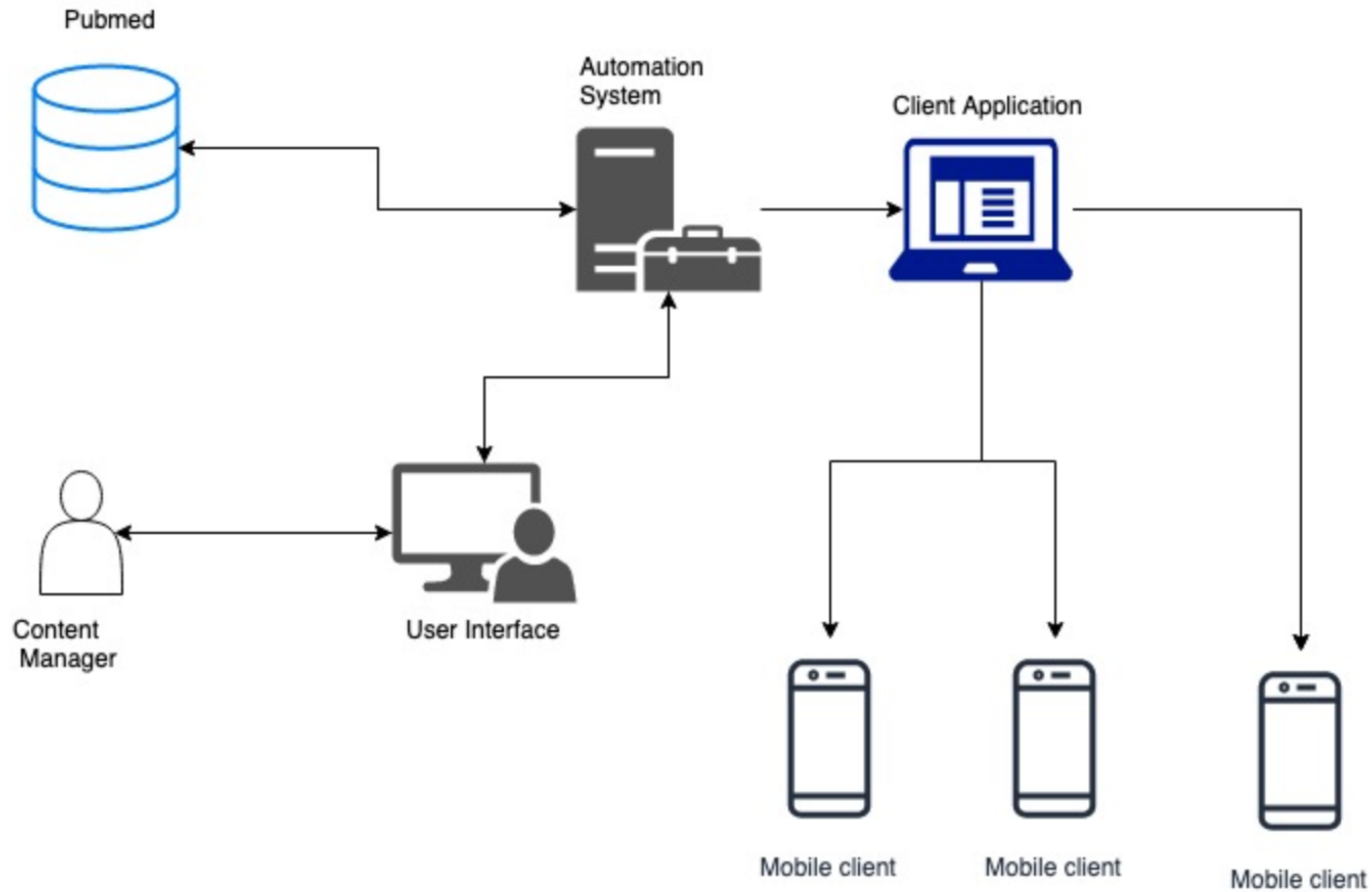
Tech Stack



ACCOMPLISHMENTS

1. Dissected code and document plugins, libraries, and/or APIs to debug any error condition encountered during testing. Migration from Python 2.7 to Python 3.5 is complex!
2. Created new features, functionalities and capabilities to redesign searchAbstracts, SearchQueries and getNewAbstracts templates.
3. Utilized Azure Notification Hubs and Firebase server to send customer push notifications across iOS/Android platforms.

Overall architectural view of the MedIntelliBase applications



High - Level Design



Debugging









```
Command Prompt - python manage.py runserver

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'30833746', '31249638', '30859222', '31170449', '31535572', '31173591', '31313488', '31114495', '31188875', '30896366']

<class 'str'>
Size of PMID given: 760
Size of PArticle returned: 0
Size of PMID returned: 0
#####33
current working dir. C:\Users\IT Member\Envs\local35\AutomationProject
#####33
result list size: 0
Abstract Pull Complete! Stats are as follows:
  Saved = 0 / 0 || Failed = 0 / 0 || Repeats = 0 / 0
[25/Oct/2019 11:32:41] "POST /abstracts/get HTTP/1.1" 200 5250
[25/Oct/2019 11:32:41] "GET /static/ZeroClipboard/ZeroClipboard.js HTTP/1.1" 404 1714
[25/Oct/2019 11:32:41] "GET /static/js/main.js HTTP/1.1" 404 1654
```


Redesign



Destination Site:  	Subject Area:  	Search Query:  	KeywordIDs:
MCA	MCA_Reptile Medicine	Lizards OR Snakes OR Lizard OR Snake	Iguanas : k20768350466718683156 Reptiles : k40401361284880142601 Python : k5466610013675867447 Lizards : k6633504420434156151 Snakes : k80789525634228681112
MIBA	Reptile Medicine	Lizards OR Snakes OR Lizard OR Snake	lizard : k10281787767784809875 virus : k1501938083932890134 python : k2940120831129469929 iguana : k4901829240963545410 medicine : k51337680852921153814 turtle : k572850938519213605 snake : k781405018... Show More >
TMIBA	TMIBA_Space Medicine	Medicine AND (Space OR Planet OR Star OR Lunar OR Solar)	Moon : k13559873682895892708 Planet : k23934318267261400987 Solar : k26673250403748340360 Lunar : k28926618341971739174 Star : k74236697066066237735 Space : k86451805491010053508 Medicine : k919549794. Show More >
Destination Site:	Subject Area:	Search Query:	KeywordIDs:

Push Notification



Xamarin Forms-> Initiate push notification
-> Firebase Server
-> App receives push notification.

CHALLENGES

- Using bottom-up approach to eliminate large sections of unnecessary code.
- Researching for related documents to Xamarin Forms when developing push notifications for iOS/Android.
- Learning to collaborate both in remote and in person.



WHAT HAVE I LEARNT?

DURING THE COURSE OF A 8-MONTHS INTERNSHIP

KEEP A LOG OF WEEKLY
TASKS, OBSTACLES AND
CHALLENGES

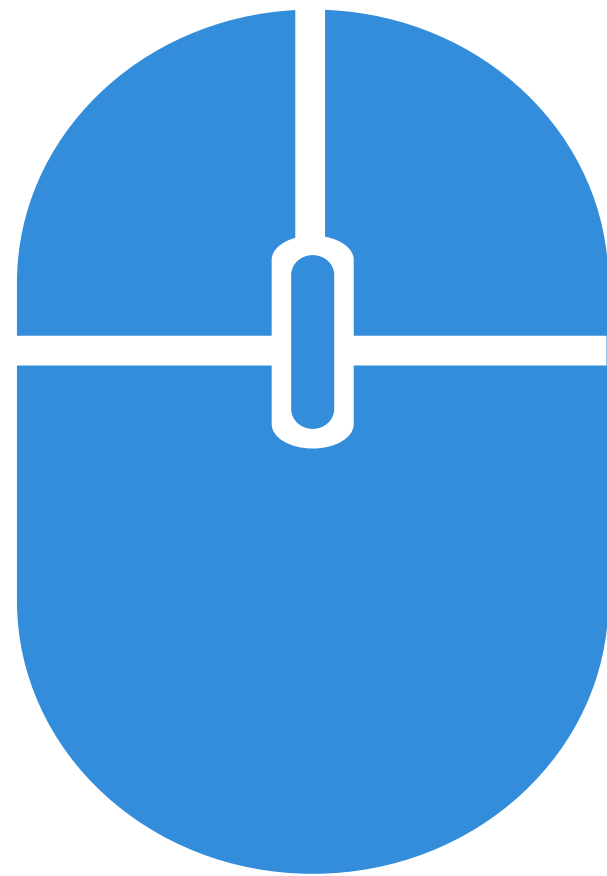
WORK IN AN
AGILE TEAM
STRUCTURE

PERFORM CODE
REVIEWS & PAIR
PROGRAMMING

DJANGO & PYTHON CODE
MIGRATION

XAMARIN PUSH
NOTIFICATIONS
RESEARCH

UI/UX DESIGN



RELEVANT COURSEWORK

Here are some of the classes that helped me during the internship.



CSS 301

Technical Documentation.



CSS 370

Loosely Coupled Design Patterns.



CSS 481

Web Template Design.



CSS 342/CSS343

Problem Solving Skills.

CSS 360

Agile Methodologies.

CSS 475

Object Relational Mapping.

**Thank you
MedIntellibase and
MinChen !**

CHELSEA IP

WORD OF THANKS





COMPANY OVERVIEW

MedIntellibase offers cloud and mobile software services that track medical and clinical research from industry that targets precise areas of clinical interest, and alert customers via Emails, Feeds and Mobile Apps.

- › Small and Agile, weekly standups.
- › Established in 1995.

OBJECTIVE

- › Upgrade automation codebase from Python 2.7 to Python 3.5 in 6 months.
- › Create user-friendly application that content managers can interact with effortlessly.
- › Redesign web templates on the automation website (UI) and increased search tool features.
- › Implement Push Notification Feature on both Android/iOS devices.

TOOLS AND LANGUAGES

Languages/ Frameworks: Python, C#, JavaScript, HTML5, CSS3, Django, SQL



Tools: Visual Studio Code, GitHub, GitHub Desktop, Skype, Discord, Google Drive, Visual Studio, FileZilla, Firebase

WHAT I HAVE DONE

Front-end

- › Involved in the development of application in using Python 3.7, HTML5, CSS3, Ajax, JSON, jQuery.
- › Created new features, functionalities and capabilities to redesign searchAbstracts, SearchQueries and getNewAbstracts templates.
- › Performed bug fixes in the advanced search tool JavaScript features.

Back-end

- › Extensively used Django technologies, including forms, templates and Relational-Mapping for communication with databases.
- › Performed code migration to refine the automation website from Python 2.7 to Python 3.5 for new prospective clients.
- › Rewrote parser functions in Python to retrieve keyword ID's from subject areas.
- › Dissected code and document plugins, libraries, and/or APIs to debug any error condition encountered during testing.

Mobile App Development

- › Utilized Azure Notification Hubs and Firebase server to send customer push notifications across iOS/Android platforms.
- › Integrated Firebase SDK's to handle all authentication and communication with the Firebase Realtime Database.
- › Tested push notifications on Android App by debugging an emulator that is configured with Google Play Services.

WHAT I LEARNED

- › Learned the importance of documentation, prioritization and adapting to project changes.
- › Learned to use Django framework within WebFaction hosting platform to search and deliver information from PubMed.
- › Learned how to develop minimum viable product features and gather feedback from content managers.
- › Learned how to create and maintain comprehensive documentation, plans and reports.
- › Learned how to properly utilize version control.

RELATED COURSEWORK

- › **CSS 342/343** – Problem Solving Abilities
- › **CSS 360** – Agile methodologies
- › **CSS 301** – Technical Documentation
- › **CSS 370** – Loosely Coupled Design Patterns
- › **CSS 475** – Object Relational Mapping/SQL
- › **CSS 481** – Web Template Redesign

ACKNOWLEDGEMENTS

Thanks to MedIntellibase for allowing me to apply my university learning in a real-world environment. I have gained valuable insight into the SWE role over the past 8 months.

Additional thanks to Professor Min Chen for her guidance and advice.