INFORMATION CENTRIC ONLINE COMMUNITY -
A USE CASE FOR BOGAZICI UNIVERSITY

by

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Submitted to the Department of Computer

Engineering in partial fulfillment of

the requirements for the degree of

Bachelor of Science

Undergraduate Program in Computer Engineering

Boğaziçi University

Spring 2019

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ACKNOWLEDGEMENTS

ABSTRACT

INFORMATION CENTRIC ONLINE COMMUNITY - A USE CASE FOR BOGAZICI UNIVERSITY

In our technological era, it is very important to offer and preserve online information flow among community members. Community members use various online platforms for specific services but generally these platforms are apart from each other. The lack of a general platform to integrate these online platforms results in loss of time and communication problems. In this project, our aim is to create an application that preserves time limited relationship between online community entities and that allows faster and reliable communication between related users. Our goal is to implement and establish a group platform for Bogazici University use case in order to offer a general platform for communication between students, departments, instructors, groups and other Bogazici University entities.

Keywords: online community, communication, information flow, group relation, university

ÖZET

BİLGİ MERKEZLİ ÇEVİRİMİÇİ TOPLULUK - BOĞAZİÇİ ÜNİVERSİTESİ İÇİN BIR KULLANIM ÖRNEĞİ

Teknolojinin ön planda olduğu çağımızda, topluluk üyeleri arasında çevrimiçi bilgi akışını sağlayan bir platform sunmak ve bu akışı korumak çok önemli. Topluluk üyeleri çevrimiçi iletişimi sağlamak amacıyla çeşitli platformlar kullanıyor, ancak genellikle bu platformlar arasındaki bilgi akışı yok ve bu platformların entegre olacağı ortak bir platform sunmak zor. Çevrimiçi platformları bir araya toplayamamak büyük veri kaybı ve iletişim sorunlarına yol açıyor.

Bu projede amacımız, çevrimiçi topluluklardaki varlıklar arasındaki zaman kısıtlı ilişkiyi koruyan ve ilgili kullanıcılar arasında daha hızlı ve güvenilir bir iletişim sağlayan bir uygulama oluşturmaktır. Boğaziçi Üniversitesi kullanım vakası için bir anons sistemi uygulayarak okuldaki öğrenciler, bölümler, eğitmenler ve kulüpler gibi yapılar arasında iletişim için genel bir platform sağlamayı hedefliyoruz.

Anahtar Kelimeler: çevirimiçi topluluk, iletişim, bilgi akışı, üniversite

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1. INTRODUCTION AND MOTIVATION

We are aware of the fact that discontinuity between various online tools used in communities results in lack of information transfer and communication problems. Also most of the time, user lists used in such systems are hand controlled and updating these lists are time consuming.

In this project, our aim is to create a general mobile platform that offers group communication by preserving time limited relations between community entities. Online community application that we aim to have offers a system that keeps history of the relevant information and provides useful data to its users. Since our system design is general, the platform can be used for any online community after relations are determined by the system admins.

Our motivation to implement and establish such platform for Bogazici University is to show how it can be applied to similar online communities. With such application in place, a community can always keep the relation information within and wrong user experience that results in missing out important or relevant information as a result of using multiple platforms can be minimized.

2. STATE OF THE ART

2.1. General Overview

In order to address online community communication problem, we have started by doing research for our use cases. We have discussed with instructors and students to elicitate requirements of the system. Also we held a meeting with BIM officers to discuss about infrastructure of online platforms used in Bogazici University.

BIM Infrastructure Meeting

In our meeting with IT Department of Boğaziçi University(BIM) we have discussed the system that school is currently using and BIM's initiatives and projects about the school systems. We have learned that the main systems that school uses such as OBIKAS, library service, personnel service are all made by third party companies. As a result of this approach, no service can be linked to another. This causes a lack of data standard and organizedly stored information.

PROJECT SERVICES SUMMARY

- Members can login with their credentials. Optimally in the future, they would be able to login with their OBIKAS credentials.
- When user logs in, they are navigated to Homepage.
- At **Homepage**, members would have service cards. Currently we have 'My groups', 'Important phone numbers', 'Recent announcements' and 'Cafeteria' services.
- Under **My groups**, user can view their registered groups.
- By selecting a group, user can view announcements and comments made in the group. Also if the user has **Admin** or **Authorized** roles, they can make new announcements, otherwise they can make comments under announcements.
- Under **Important phone numbers**, users can find important phone numbers in the community.
- Under **Recent activities**, users can find recent announcements and comments made in their groups.
- Under **Cafeteria**, users can view the food menu.
- At the navigation bar, user can choose 'Homepage', 'Search' or 'Profile'.
- At **Search** page, user can search public groups by name.
- At **Profile** page, user can view their recent activities and their user information.

2.2. Use case scenarios

User Profile 1

User 1	Eda Öztürk
Age	19
Profile	Prep student at Bogazici University living in Kilyos Campus.
Goal	She wants to have information about events in Bogazici University and she wants to receive information from student clubs in order to be more active and social.

User Story

As a student, I should be able to access the information about social groups and events happening in Bogazici University so that I can join the events and meetings that I am interested in.

Acceptance Criterias

- Login, and search for social groups of Bogazici University.

- Check announcements of public groups.

- Subscribe for notification from such groups.

User Profile 2

User 2	Selen Uzunhasan
Age	40
Profile	Instructor at Bogazici University.
Goal	As an instructor, she wants to make announcements and give updates to students in her class via her mobile phone.

User Story

As an instructor, I want to make announcements to students about my course in order to inform them about the latest updates.

Acceptance Criterias

- Login, and select the course group.

- Make announcement and add attachments.

User Profile 3

User 3	Ahmet Öztürk
Age	42
Profile	Department Officer at Bogazici University.
Goal	As a department officer, he wants to be able to inform all students at the department about problems and changes.

User Story

As a department officer, I should be able to make an announcement to students in my department in order to inform them about latest updates.

Acceptance Criterias

- Login, and go to department group.

- Make announcement and add attachments.

2.3. User requirements

Glossary

- User: Any person that is a member of the online community system. Users can have various roles in the system, namely student, instructor, assistant and/or group admin.

- Group: Groups can describe any existing relation that is part of the online community. For example, class groups, academic groups, student clubs etc.

- Announcement: Members of a group can make announcements. Announcements represent the main source of information in the relevant community.

- Community: Associated users that share certain interests in common.

- Unauthorized Group Member(UGM): A user who can view and comment the announcements in the group.

- Authorized Group Member(AGM): A user who has the UGM authorization and who can make announcements in the group.

- Admin Group Member(Adm): A user who has AGM authorization and who can remove/add users and can change roles of users in the group.

1. **Functional Requirements**
   1.1. **User Requirements**
     1.1.1. **Users**
       1.1.1.1. Users shall be able to subscribe to public groups
       1.1.1.2. Users shall be able to create groups.
       1.1.1.3. Users shall be automatically subscribed to mandatory groups.
       1.1.1.4. Users shall be able to sign in to the system by their community credentials(OBIKAS for Boğaziçi University).
       1.1.1.5. Users shall be able to have multiple roles.
     1.1.2. **User Roles**
       1.1.2.1. User roles shall be temporarily assigned to users.
       1.1.2.2. **Student Role**
         1.1.2.2.1. Students shall be subscribed by default to groups of classes they

are taking.

1.1.2.2.2. Students shall be able to see the announcements from their advisors.

1.1.2.2.3. Students shall be able to access the department groups and university's general announcements by default.

1.1.2.3. **Instructor Role**

1.1.2.3.1. Instructors shall be subscribed by default to groups of classes they are teaching.

1.1.2.3.2. Instructors shall be able to have admin access to their course and advisory groups.

1.1.3. **Group Roles**

1.1.3.1. **Unauthorized Member**

1.1.3.1.1. Unauthorized members shall be able to see the announcements in groups that they are enrolled in.

1.1.3.1.2. Unauthorized members shall be able to reply to the announcements with comments in groups that they are enrolled in.

1.1.3.2. **Authorized Member**

1.1.3.2.1. Authorized members shall be able to make announcements in groups that they are enrolled in.

1.1.3.3. **Admin**

1.1.3.3.1. Admins shall be able to add users to their groups.

1.1.3.3.2. Admins shall be able to delete users from their groups.

1.1.3.3.3. Admins shall be able to change role of users in their groups.

2. **Nonfunctional Requirements**

2.1. **Security**

2.1.1. System shall be secure.

2.2. **Availability**

2.2.1. The application is expected to have Android and iOS client.

2.2.2. The language of the application shall be in English.

2.2.3. In case of lack of internet connection, services saved in the phone memory should be rendered.

2.4. RESTful API
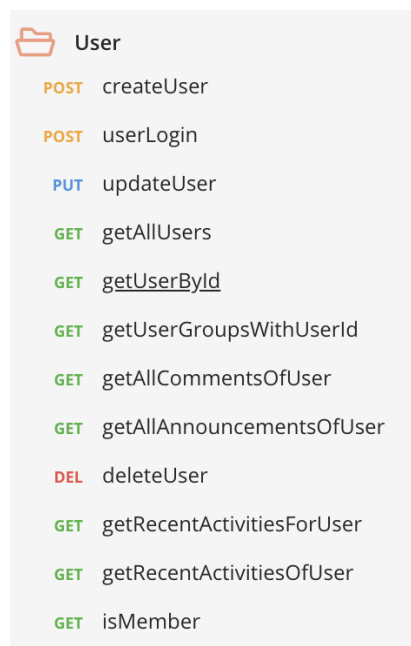
All API endpoints and their descriptions can be found here:
https://documenter.getpostman.com/view/1939921/S1Lx1okp

Project offer User, Group, User-Group relation, Announcement and Comment backend services.

User services:

Some of the user services namely createUser, userLogin are for creating mock database planned to be retrieved from OBIKAS similar system. Other services aim to retrieve relevant and convenient information for user.

UserGroup services:

User group services are used for delivering user group relations existing in the platform. User group relations can be served using these endpoints, also the relation role and status can be changed using these services.

Group services:

Groups can represent any relational structure between community entities. In our use case for Bogazici University, groups can be departments, school course groups, research groups, clubs or other type of groups created by community members. Members can be subscribe to public groups, also members are automatically being subscribed to groups regarding their information retrieved from OBIKAS system.

Announcement and Comment services:

Any admin or authorized member of the group can share announcements in the group, hence can reach and inform group members anytime. Group members can interact by commenting to the announcements.

2.5. Technologies

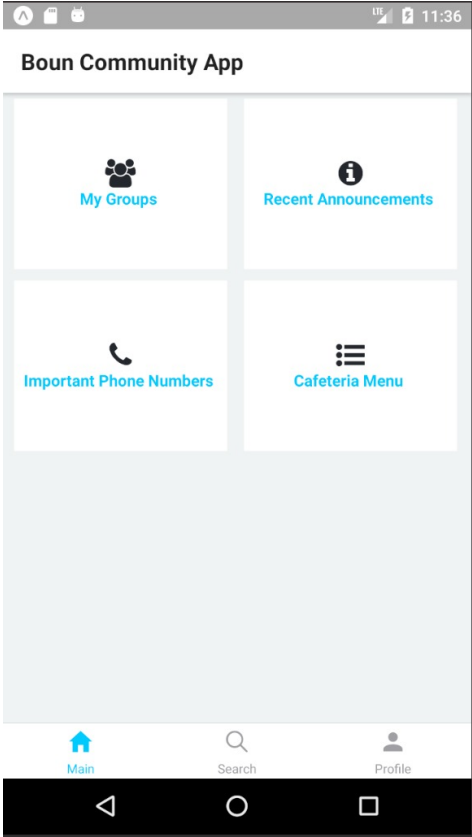|	
Mobile	React Native
Backend	Node.js
Database	MySQL

3. SCREENSHOTS

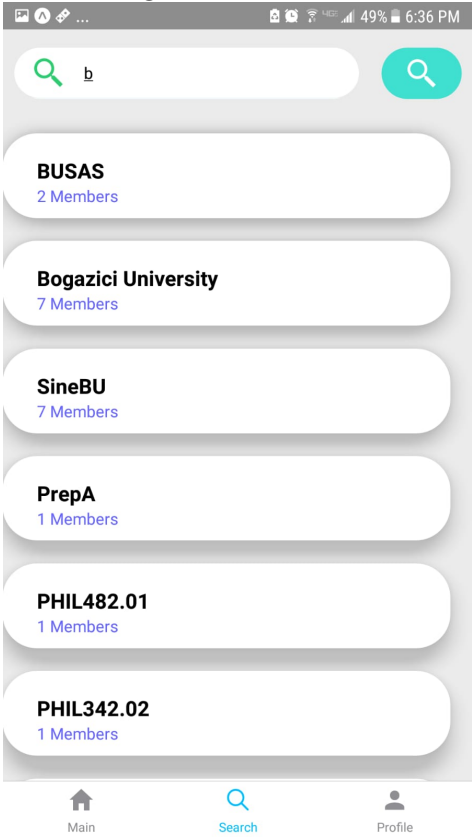Figure 3.1. Login
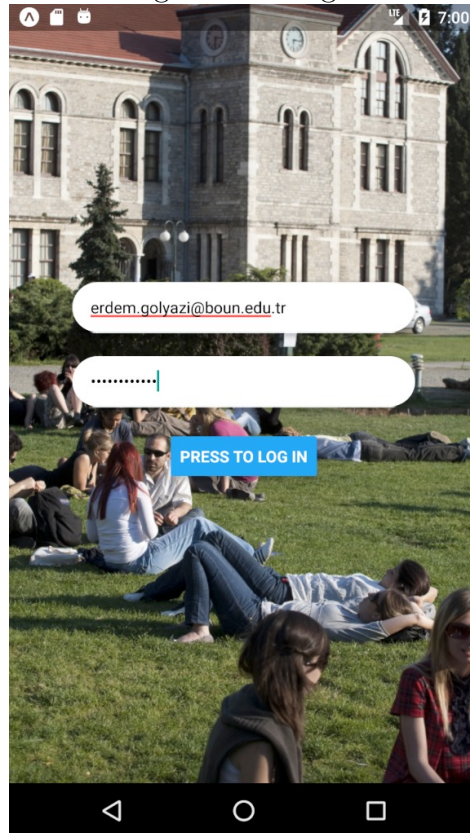
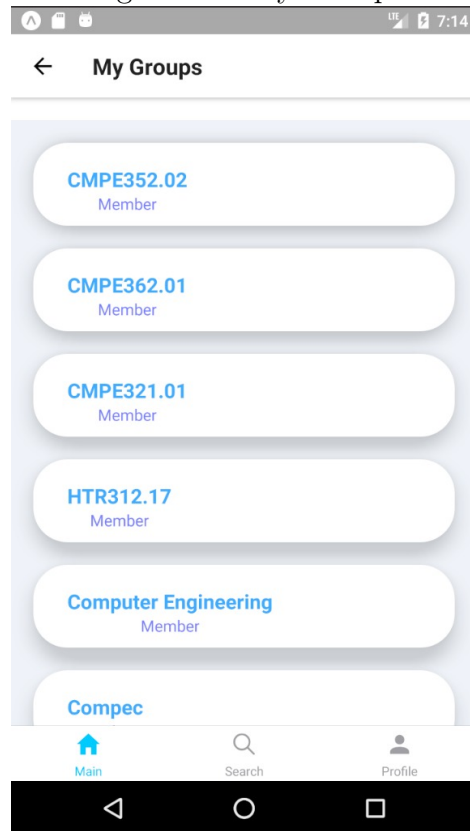Figure 3.2. Homepage

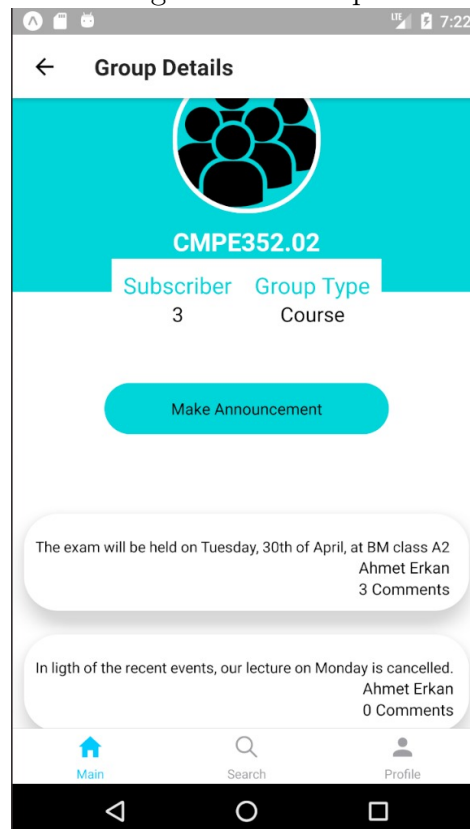
Figure 3.3. Search

Figure 3.4. My Groups

Figure 3.5. Group

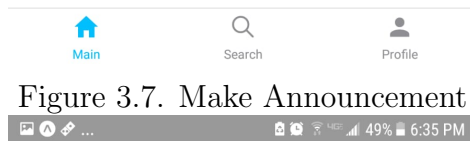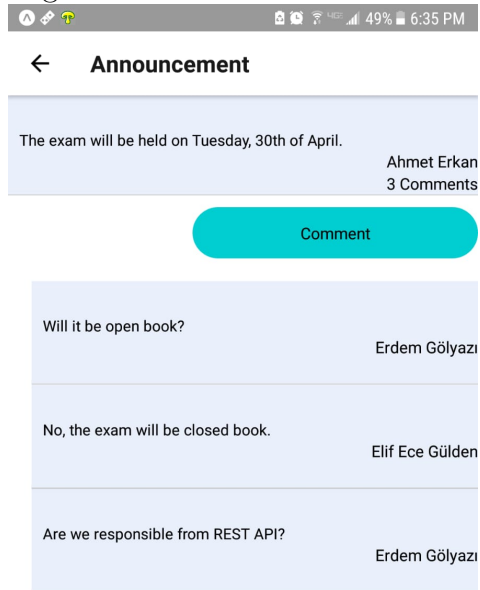Figure 3.6. Announcement Detail

Figure 3.7. Make Announcement

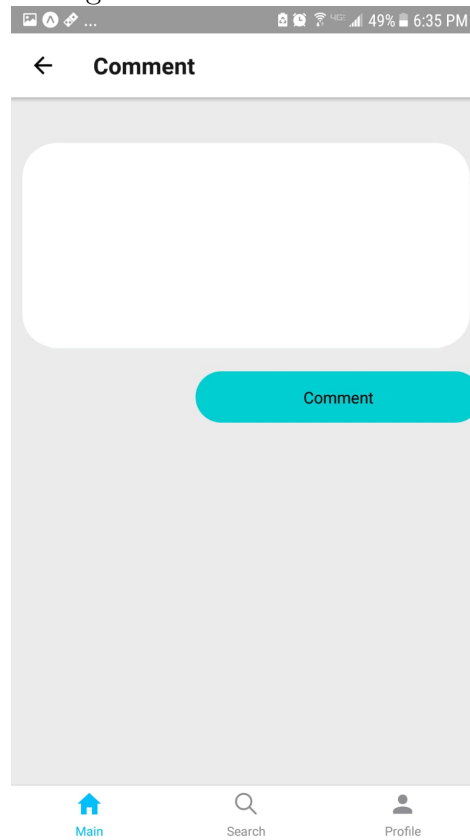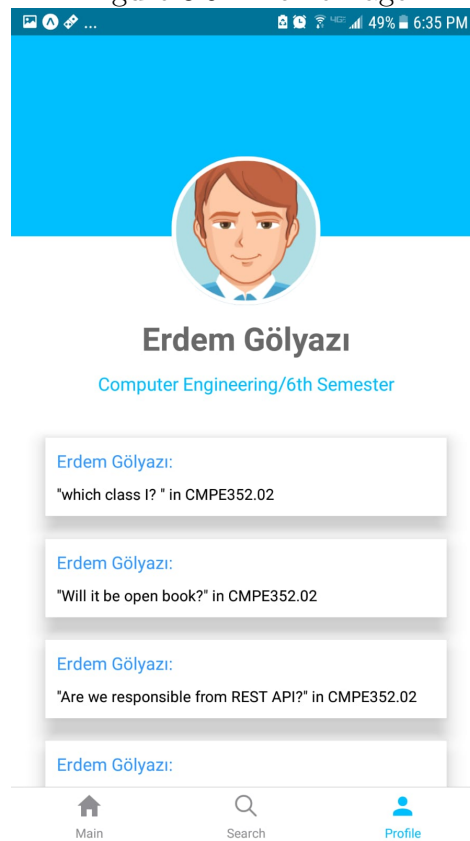Figure 3.8. Make Comment

Figure 3.9. Profile Page
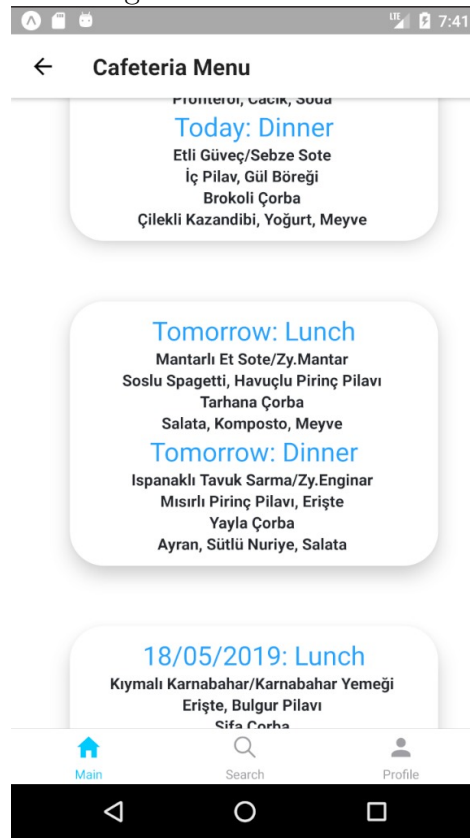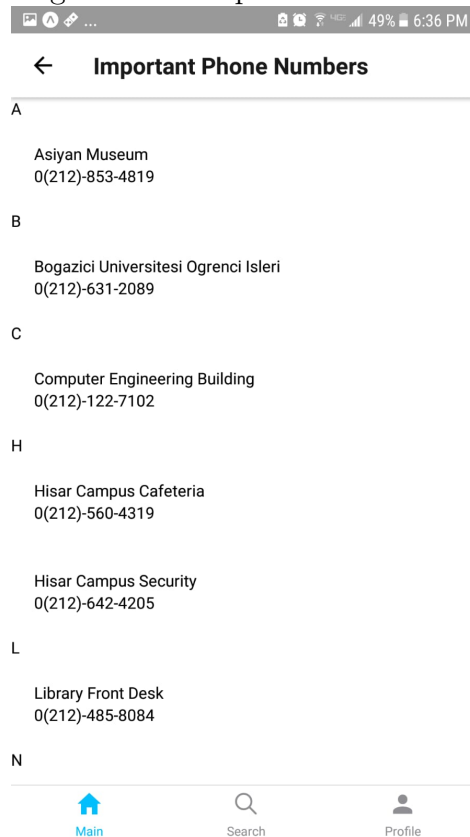
Figure 3.10. Cafeteria

Figure 3.11. Important Numbers

4. CONCLUSION AND DISCUSSION

Online communities can have limitless features and applications, and require great knowledge to understand existing services. With this project we aimed to find a solution to information and service separation problem existing in online communities. In our use case for Bogazici University, we offer a general mobile platform for members where they can reach their courses, clubs, announcements, news related to their concerns and interests. Our goal is to create a customizable general platform by integrating third party services to our system and also offering group structure to convey information flow between related users.

5. FUTURE WORK

Along with our researches and meetings, we have prepared several future work proposals related to our project.

(i) **Integration with OBIKAS**

Our application structure is created for customizable API calls, user services can be customized to retrieve user information from OBIKAS

(ii) **Automatically creating user group relations depending on existing time dependent associations in OBIKAS**

Following the user information obtained from OBIKAS, the entity relations would be updated each semester. Example: When a student enters a new semester, they automatically get subscribed to their related course groups.

(iii) **Clustering important third party services used by community members**

These separate third party services can be mail system, library and similar for Bogazici University.

(iv) **Providing a customizable notification service**

A notification service can be implemented for announcements, new activities and calendar activities.

(v) **Offering most used registration services**

These services can be document request, gpa calculator and academic records.

(vi) **Creating user calendar**

User calendar concept can automatically include course schedule, exam dates, project deadlines and academic calendar.

In this project our focus was to create a platform for members to reach right information in convenient and fast manner. Hence customization of the application regarding user's habits and interests would be a great development for the project.