

# EVALUATION ASSIGNMENT – 1

CS 5760 – HUMAN COMPUTER INTERACTIONS AND USABILITY

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TEAM 3: E2BIG

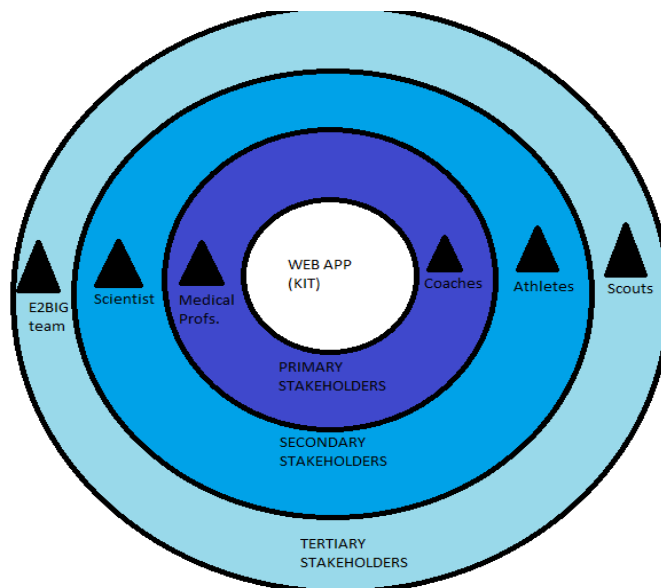
## APPLICATION DESCRIPTION

The objective of the web application is to allow its users to record and upload videos of athletes so that it can be later analyzed by medical professionals regarding the possible risks of an ACL (Anterior Cruciate Ligament) injury. The intended users of this app are primarily coaches from the Upper Peninsula region of Michigan, but it can be used by other people such as the parents of an athlete. The whole body is to be captured while recording the video from the front of the athlete. Medical professionals would later assess these videos and provide relevant feedbacks to the coaches about the risk of injury. They can even suggest preventive measures to make the athlete less prone to it. The athlete's performance is quantified and feedback is sent through the web application.

## ENVIRONMENT

The environments that the user would be in while using the application could include gymnasiums across the UP, college or high school campuses, users' homes or a medical clinic. The gymnasiums could be a place where the coaches would record the vertical drop tests of the athletes. After recording they would upload their video to the web server from where the medical professionals would be able to access them and then analyses them later for any ACL injury risks. The medical professionals could also access these videos while being at their homes, and then provide their feedbacks after analysis.

## STAKEHOLDERS



In the onion model for the stakeholders, the innermost ring is the actual product i.e. the web application to be developed by E2BIG. The primary stakeholders for the application are the coaches and the medical professionals. The secondary stakeholders include those who do not

affect the application directly such as the athletes and the scientist, Erich Petushek. The tertiary stakeholders include the E2BIG development team, the UX consultants (grad students) and possibly the scouts for the athletes. Further details about their roles is given below:

- **Primary:** The high school and college coaches of various sports in the UP and the medical professionals are the primary stakeholders for the application. They are also the primary users of it. The coaches would need the application to record and upload the videos to the server whereas the role of the medical professional would be to analyze the video and provide valuable feedback to the coach about the risk of an ACL injury.
- **Secondary:** Athletes and Erich Petushek (scientist) could be among the various stakeholders who are not directly related to the web application. The athletes are the subject to the videos that their coaches record, and hence benefit from the feedback by the medical professionals. They don't use the application themselves, but the working of the application is focused around them. Scientists can use the data collected by the application for their research.
- **Tertiary:**
  - Scouts: The application would help them in scouting of healthy players and would tell them about the risks with a certain athlete.
  - Development team: The development team is mainly responsible for the creation of the application per the requirements. Thus, they are among the tertiary stakeholders, who would have a significant interest in the success of the application.
  - UX consultants/grad students: The graduate students act as consultants for the E2BIG team, and would later test the usability of the entire application.
  - Professor: The professor of the course is also a tertiary stakeholder since the success of the application would be beneficial for the students in his course.

## STAKEHOLDER INFLUENCE TABLE

ROLES	GOALS	INFLUENCE
<b>Coaches</b>	Making sure that their athletes are fit and taking preventive measures to reduce the risk of an ACL injury	A simple and reliable application ( influences the design of the application)
<b>Athletes</b>	Learn about the chances of them getting injured and thus using preventive measures to perform better	Makes the app implement a detailed feedback system
<b>Medical Professionals</b>	Provide feedbacks based on the videos and suggest different ways such as exercises to the athlete to prevent injuries.	Contribute to a healthier and fit society

<b>Development team</b>	To learn how to make a web application, and to learn how to work in a team. Also, complete this project to earn good grades.	Write better code, and balance the project with other coursework
<b>Scientists</b>	To obtain and analyze the data for further research	Better research work with future scope, Influences the application to have data integrity
<b>Professor</b>	The quality of work produced by the students would reflect the professor's hard work and expertise on the topic.	The assessment and grading of the students' work.
<b>UX Consultants/grad students</b>	To help the development team with the design of the application and test its usability	Influence the design of the application and make it more user friendly

## SUMMARY OF THE STAKEHOLDER GOAL INFLUENCE TABLE

As can be seen from the table, all the different stakeholders have different goals and different motivations from each other.

- 1. Coaches:** The goal of the coaches is to train athletes and win tournaments while ensuring that all the athletes are fit. He can motivate the athletes to perform better and work with them on their weaknesses and strengths to make them achieve their goals. Some of the possible things that influence a coach are the expectations of the university/school and the community, to perform better during sports events. The performance of the team, could be related to the effectiveness of the coach. The coaches influence the design of the application majorly since it would be made keeping in mind that not every coach would be technologically literate.
- 2. Athletes:** The goal of the athletes is to perform and give their best at the sports events that they participate in. Also, they want to remain in peak shape, without any injuries so that they don't miss out on any games or perform poorly. Possible motivators for athletes, maybe his own or his parents' expectations of him making a good career out of sports. Another motivator could be the community or fans, who might expect the athlete to always perform good on the field and not get injured often. The athletes influence the application by having a detailed feedback system built into it which would give suggestions to the athlete about preventive measures.
- 3. Medical Professionals/Doctors:** Their goal is to ensure that their patients are healthy and fit. Their profession is the biggest influencers on their goals, which makes them motivated to find preventive ways for injuries or diseases. They thus, focus more on the prevention than the cure. By suggesting preventive measures and providing detailed feedbacks they contribute to a healthier society.
- 4. Scientist:** The goal of the scientist is to gather data for further research. Possible motivations for him could be the expectation of the university or the funding institution for better research results. The scientist influences the integrity of the data.
- 5. Development team:** The goal of the development team could be credits, hands on experience or good grades through the successful completion of the project. Influences

for them could be the expectations of their course instructor or the scientist. Another factor that motivates them could be the pressure to get a decent job after their education. They hence influence the quality of the application, because that would help them as an experience later.

6. **Professor:** The professor's goal is to provide an opportunity to the students to get some experience and work in teams. The students' work could be reflective of the professor's expertise and knowledge, and thus the expectations of the university could be one of the possible motivations for the professor. He influences the assessment of the course project and the grades of the students.
7. **UX Consultants:** The grad students influence the design of the application by sharing their knowledge of the domain with the development team.

## PERSONAS

### Primary users

1. Name: James Kirk  
Age: 54  
Residence: Houghton  
Job title: Basketball coach  
Description: James Kirk is a basketball coach in one of the high schools in the UP. He is not very tech savvy and prefers using simple applications on his cellphone. He is determined to nurture the talent of the various athletes who are in the team, and wants them to succeed in sports in college later.
2. Name: Lily Jacobs  
Age: 30  
Residence: Ironwood  
Job title: Doctor  
Description: Lily Jacobs is a medical professional specializing in sports medicine. She often uses a tablet to read medical articles and to stay updated with the current research in sports medicine. She is very used to the modern day applications, and can learn new applications very quickly. She is determined to make sure that her patients are fit and suggests ways to prevent injuries.

### Secondary users

1. Name: Anant Upadhyay  
Age: 18  
Residence: Houghton  
Job title: Athlete  
Description: Anant plays as a point guard in Michigan Technological University's basketball team. He is currently majoring in Computer science. He aims to make a career out of the sport he plays and works very hard to impress scouts. He takes care of his health so that his performance does not deteriorate.
2. Name: Allen Walker  
Age: 19

Residence: Marquette

Job title: Student

Description: Walker is a Humanities student in Northern Michigan University. He wants to be a part of the soccer team at his university and is working hard to get fit for the tryouts. He regularly goes to the gym and asks one of his athlete friends to teach him some exercises for that. He is very tech savvy and owns a fitness tracker, which he uses when he trains.

## SIMPLIFIED HIERARCHICAL TASK ANALYSIS

- Home
- Login/ Sign up
  - Upload video (coach level view)
  - Video upload help (coach level view)
  - Browse messages (both coach and doctor level view)
  - Browse videos (doctor level view)
  - Feedback system (doctor level view)
  - Questions and response system (doctor/coach level view)
- Incorrect login/ Forgot password
- Help (about the application)

## SUMMARY OF SIMPLIFIED HTA

- **Home:** The home screen would be the first page that the user would see when he opens the application. It would have the space to enter the username and password to login the application, or a signup feature (for new users).
- **Login/Sign Up:** The information about an individual's health is to be kept confidential, hence no unauthorized user can view the videos. The login would include a username and password for recurring user. The signup feature would register new users.
- **Upload video:** The coaches can upload the videos of the athletes. This would be the coach view, since only coaches would be able to upload the videos to the database.
- **Video upload help:** Not all the coaches who use the application may be technologically literate. Hence simplified instructions on how to upload a video could be found under this.
- **Browse messages:** The coaches and the doctors can browse their message histories with different individuals. This is thus, for both the doctor and the coach view.
- **Browse videos:** This would be available to the doctor, and he can browse the videos from the database in which they were uploaded. This will not be present in the coach view.
- **Feedback system:** This would be available in the doctor view, so that he can provide feedback based on his analysis of the video.
- **Questions and response system:** The coaches can ask questions or doubts from the doctor and the doctor can answer all the queries through this feature. This would be important, because there may be instances when the coaches want to pose a query.
- **Incorrect login/Forgot password:** This feature would be available to both the views and would be used in case any of the users types his username/password incorrectly, or forgets the password.
- **Help:** This section would include how to navigate the application and frequently asked questions (FAQs)

## **Appendix**

The notes that were recorded after two appointments with the scientist can be found at the following links:

Appointment 1 notes:

<http://www.csl.mtu.edu/classes/cs4760/www/projects/s17/group3/www/meeting-notes/interview%20notes.pdf>

Appointment 2 notes:

<http://www.csl.mtu.edu/classes/cs4760/www/projects/s17/group3/www/meeting-notes/interview%20notes.pdf>