

USER MODELS AND UI PROTOTYPE

SOFTWARE DESIGN AND IMPLEMENTATION

ENPM - 613

TEAM - 4

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INDEX

1. PERSONAS DESCRIPTION

[1.1 PERSONA 1 - TYPICAL USER](#)

[1.2 PERSONA 2 - SPECIAL NEEDS USER](#)

[1.3 PERSONA 3 - ATTACKER](#)

2. USER INTERFACE FLOW MODEL

3. STORYBOARDS

[3.1 TYPICAL USER - ENROLLING TO COURSES](#)

[3.2 SPECIAL NEEDS USER - REGISTERING TO COURSES & CHECKING QUIZ DEADLINES](#)

[3.3 ATTACKER - FALSE IMPERSONATION AND UNAUTHORIZED ACCESS](#)

PERSONAS DESCRIPTION

1. PERSONA 1 [A TYPICAL USER]

Persona: A typical Student using the ELMS Platform: Skillsberg

Persona Name: Michael Paul

Persona Title: Undergraduate Student At University Of Maryland - College Park pursuing Computer Engineering

Description: Michael Paul is a 19-year-old undergraduate student pursuing his Bachelor's in Computer Engineering at the University Of Maryland - College Park. Michael wants to learn French as he is planning to pursue his masters in a prestigious university in France. He is looking for a suitable platform where he can browse and register for such language-specific courses and gain some experience in them.

Goals and Needs:

- **User-Friendly Interface:** Michael needs a platform which has an intuitive and easy-to-navigate user interface to ensure a smooth learning experience.
- **Register For Courses:** He needs a platform where he can easily browse all the available courses, and check the course content to appropriately decide if he wants to enroll into the course. On deciding to enroll for it the user should be easily allowed to register himself and access the course materials
- **Access Course Materials:** He wants easy and quick access to all the course materials for the course he has enrolled to, that includes lecture notes/slides, and multimedia resources.
- **Progress Tracking:** He wants to track his progress as he proceeds forward with the coursework. He wants a platform where he would be able to check his completed modules and assignments and the ones that are still due for completion and be eligible for a certificate after the course completion.
- **Communication with Instructors and Students:** He wants a platform which allows him to easily communicate with the other learners and the

instructors. He values and desires options like a discussion board, and group messaging to get her doubts solved in a timely manner.

- **Assignment Submission:** He needs a straightforward process for submitting and tracking his assignments. He desired a system that provides confirmation and feedback on his assignments and quizzes

Pain Points:

- **Complex Navigation:** Michael finds it very frustrating when he has to spend too much time and effort to figure out where and how to find the information and the pages he needs when the system's navigation is overly complex
- **Bad User Interface and Experience:** He does not feel motivated and engaged enough to be consistent in using the platform on a daily basis to complete his coursework due to a bad user experience and interface provided by the system.
- **Unclear Instruction:** Unclear Instructions and lack of guidance on how to perform the basic operations and how to use some features can be a source of frustration for Michael
- **Course Material Quality:** Irrelevant and bad Quality course material can be a factor that could lead to disappointment for Michael and lead him to not completing the course work in the given time

Scenario: Michael, an academically inclined individual, navigates to the SkillsBerg eLearning platform with a keen interest in acquiring proficiency in the French language. Upon arrival, he encounters a user-friendly interface and proceeds to access the course offerings. He then goes through the coursework, finds his interest and decides to enroll to the "French" course. Michael will then be redirected to the enrolled courses page, granting him immediate access to the inaugural course module. Now that he's officially enrolled in the course, he can complete the modules, perform timely assignments, and master the course.

2. PERSONA 2 [A SPECIAL USER]

Persona: A Special Student using the ELMS platform: Skillsberg

Persona Name: Sarah Graham

Persona Title: A Graduate student at University of Maryland pursuing Software Engineering

Description: Sarah Graham is a 23-year-old Graduate student at the University Of Maryland pursuing her Masters in software engineering. She is also a special needs student who experiences cognitive difficulties. She is currently looking for a platform to learn Spanish that best suits her needs and could provide an engaging and interactive platform for her to grasp the basic concepts effortlessly.

Goals and Needs:

- **Accessible Learning:** Sarah requires an ELMS system that is fully accessible which includes a barrier-free learning environment which supports features like screen readers, keyboard navigation
- **Adjustable Settings:** Sarah desires a platform that allows them to adjust text size, colour schemes and contrast for readability and comfort
- **Technical Support:** She would highly appreciate a platform that provides proper technical support for users with special needs to address accessibility issues and provide assistance when needed. She values resources like disability service contact information and guidance on accessing features within the ELMS
- **Extended Time:** Sarah might require some extended time for the completion of her assignments and assessments. The platform must accommodate these preferences based on individual needs
- **Access to Resources in Alternative Format:** Sarah would highly appreciate if the platform supports access to the course material in alternative formats (like audio-based media) based on the needs of the individual
- **Supportive Community:** Sarah could benefit and highly appreciate a supportive, collaborative and inclusive online learning community. This involves understanding and empathy from instructors and peers

Pain Points:

- **Complex Navigation:** A straightforward and well-organized user interface is very essential for Sarah. She could be frustrated if she is not able to navigate through the ELMS without much effort and obstacles and easily be able to access the course resources and other features.

- **Inaccessible Material:** Inaccessible documents or media can prevent Sarah from accessing and engaging with the given course content, leading to frustration and barriers to learning.
- **Limited Awareness:** In some cases, the professor or other members in the course may not be aware of Sarah's needs which might lead to misunderstanding or exclusion

Scenario: Sarah, a special needs user with a learning disability, is on a quest to learn Spanish at her own pace. She then discovered SkillsBerg eLMS which offers extended deadlines for students with special needs, ensuring they have the time and support required for successful language acquisition. Impressed by the platform's accessibility features and understanding of unique learning requirements, Sarah decides to enroll in a Spanish course, feeling confident that SkillsBerg will provide the accommodating and supportive environment she needs to achieve her language learning goals.

3. PERSONA 3 [ATTACKER]

Persona: Attacker

Persona Name: Sigma

Persona Title: An attacker trying to do harm or gain access to the system

Description: Sigma is a malicious hacker who targets software systems for various reasons including financial gains, disruption or revenge. He possesses advanced technical skills in programming, hacking and system exploitation. He is a highly persistent individual and doesn't give up easily after some initial failures. He likes to operate under the cover of anonymity, using tools to hide his identity and location thereby making it difficult to trace his activities

Goals and Needs:

- **Theft of Data:** Sigma's primary goal is to steal sensitive data from the system that might include the personal information of the students and staff. He may try to sell this information for later personal gain
- **Disruption:** Sigma may seek to disrupt the functioning of the ELMS platform in such a way that the students and staff are unable to access the system. This action might be due to an intent to harm or destroy the institute's reputation.

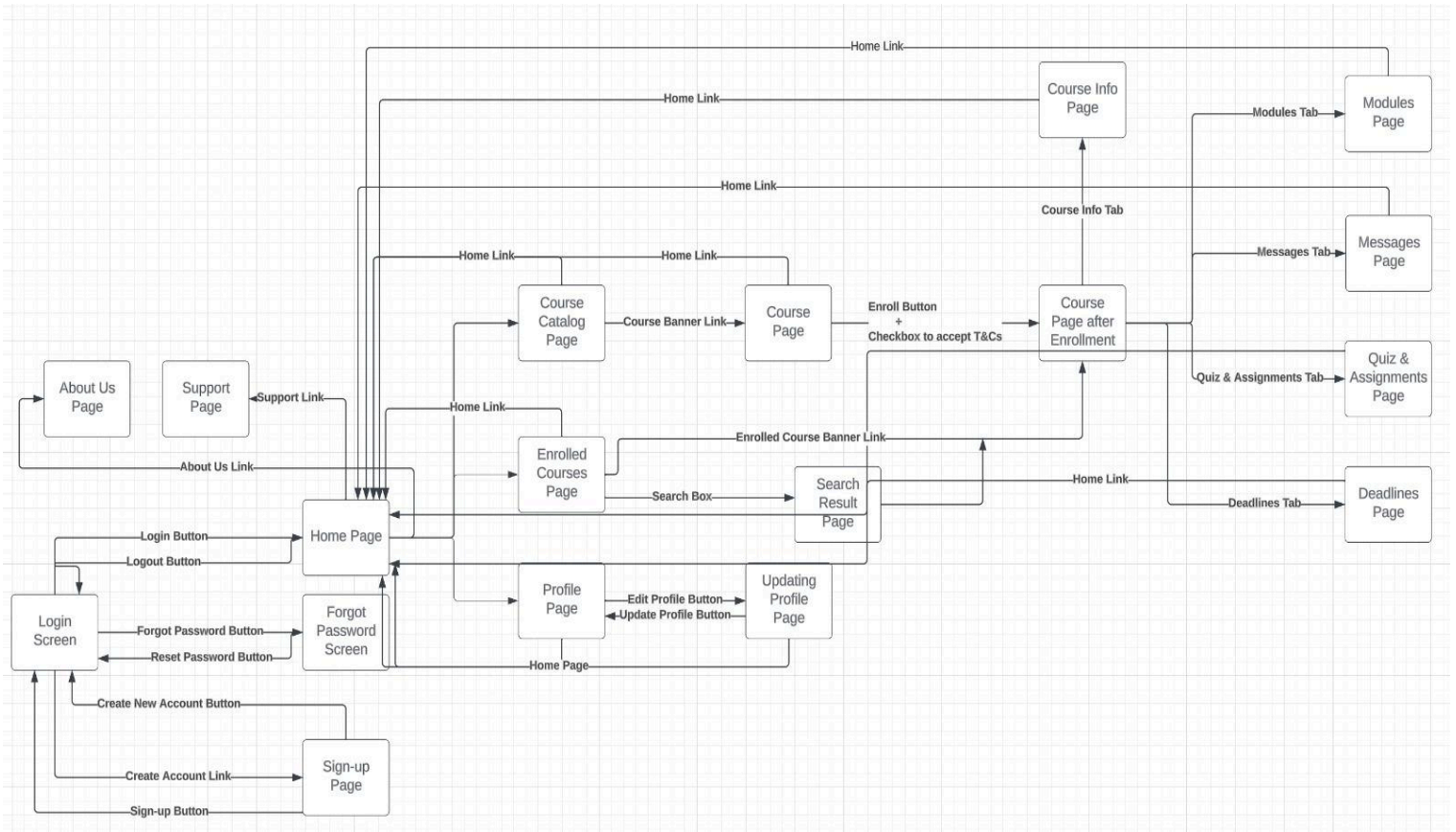
- **Financial Fraud:** There might be a case where Sigma might try to attempt some financial fraud by altering the payment or diverting the funds from the institution
- **Phishing and Social Engineering:** Sigma can use phishing emails, social engineering or create a duplicate page very similar to the ELMS to gain login credentials of the user
- **Exploiting Vulnerabilities:** Sigma is always on the lookout for security vulnerabilities in the system due to outdated software used or misconfigured settings

Pain Points:

- **Strong Security Measures:** Sigma is frustrated by security measures including two-factor authentication, intrusion detection
- **Increased Awareness:** Sigma faces a lot of growing challenges due to the increasing awareness among students and staff members about security risks like phishing and social engineering making it more difficult for Sigma to trick the users
- **Law Enforcement:** Legal consequences if caught and the possibility of a law enforcement investigation can be a major pain point for Sigma
- **Rapid Incident Response:** Constant monitoring by the ELMS administrator and being notified immediately when an attack has taken place prevent Sigma from his attempts to disrupt the system to gain access.

Scenario : Sigma, a cybersecurity enthusiast with ill intentions, creates a fake website closely resembling SkillsBerg eLMS, using a similar name and interface. With deceptive emails and phishing techniques, he lures unsuspecting users to this fraudulent platform. Once users land on the fake site, Sigma tricks them into entering their login credentials, unknowingly capturing their usernames and passwords. With this stolen information, he gains unauthorized access to the legitimate eLMS platform. Inside the eLMS, Sigma maliciously alters assignment deadlines for enrolled students, causing confusion and disruption to their learning experience. His actions threaten to compromise the integrity of the educational process.

USER INTERFACE FLOW MODEL



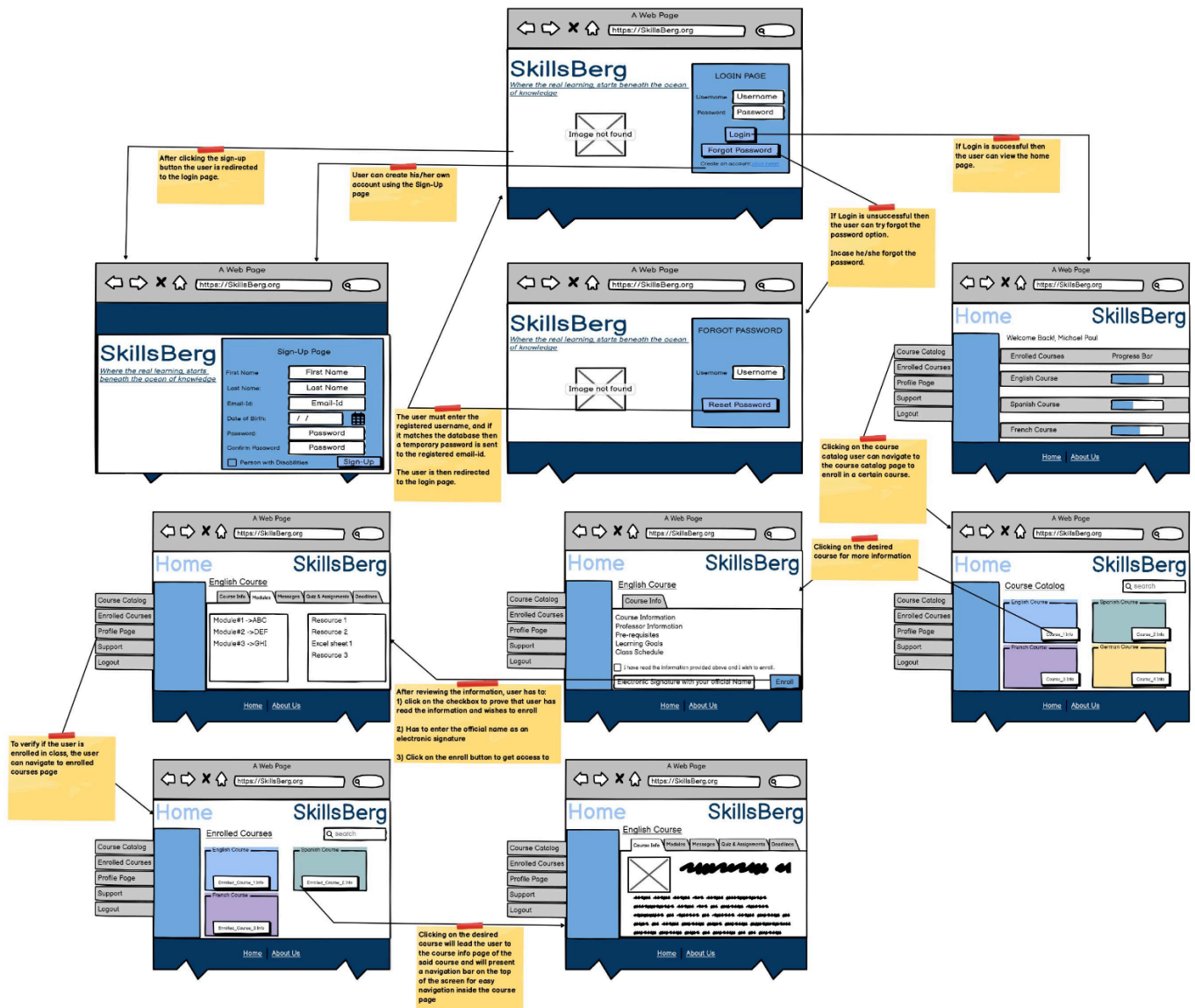
STORYBOARDS

→ SkillsBerg eLMS application prototype

1. TYPICAL USER - ENROLLING TO COURSES

Storyboard for the User's Course Enrollment

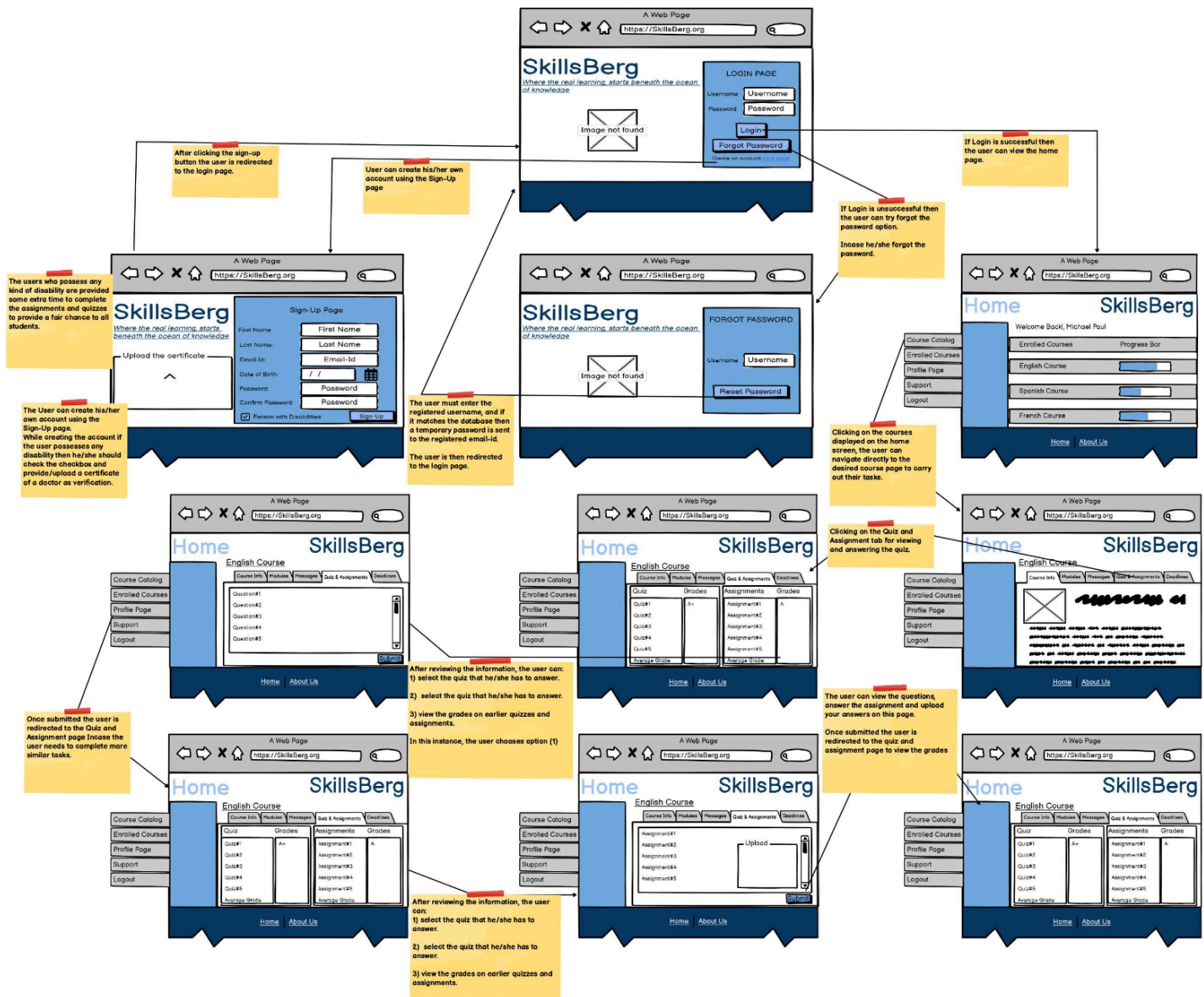
Storyboard for the User's Course Enrollment



2. SPECIAL NEEDS USER - REGISTERING TO SKILLSBERG

Storyboard for the Special User's Assignment submission

Storyboard for the Special User's Assignment submission



3. ATTACKER - FALSE IMPERSONATION AND UNAUTHORIZED ACCESS

