

Introduction

IRB is an acronym for Institutional Review Board. From UW -Superior website, "The purpose of the Institutional Review Board is to safeguard the welfare and protect the rights of individuals who participate as subjects in research sponsored by [the] institution." An IRB Proposal is the document that a researcher must fill out to get approval to start research; this contains a description of the research that they want to perform.

Community Need

The UW - Superior IRB currently manage proposals manually. The IRB proposal system automates some parts of the IRB review process like matching reviewers to submitted proposals. The system helps the IRB to filter unnecessary proposals by guiding the researchers to determine if they need to submit an IRB Proposal. It also helps the researchers determine the type of IRB Proposal they need to submit.

Development Process

For development, we used a Spiral Model - Software Development Life Cycle, while also implementing some Agile Software development practices. For this system, we had two spirals and we modified the spiral phases based on our end-goal.

Prototype V0.1 – IRB Funneling Process

Funneling Process is a term which refers to a series of questions a Researcher answers in order for the IRB system to determine their level of review and the type of IRB Proposal document they need to fill and submit. In the first development spiral, we implemented a prototype of the IRB Funneling Process. Below are the different phases and what we accomplished:

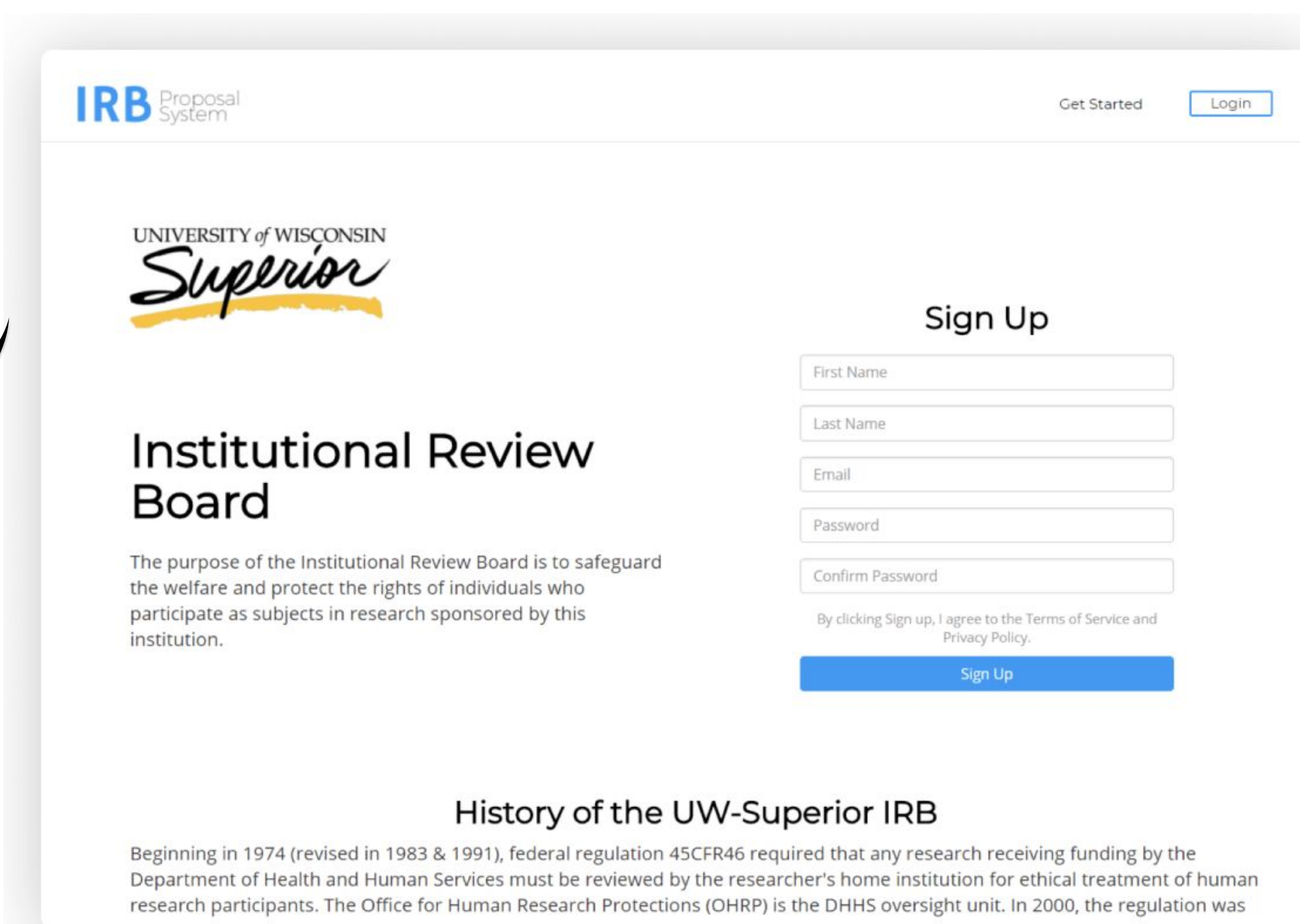
- **Phase 1 - Requirement Gathering & System Specification:** We had meetings with our client, the IRB Chair, to discuss the system's functionality. And we created a System Requirement Specification Document.
- **Phase 2 - Implementation:** We developed a prototype of the IRB funneling process.

Overview

The IRB Proposal System is a project management application that keeps track of all the tasks a researcher and reviewer need to get done for a proposal to be approved. This System helps a researcher go through the funneling process to determine the type of proposal they need to fill and submit for review. After the funneling process, an IRB Proposal Project is created by the System. It contains the list of tasks the researcher needs to complete to submit a proposal for review.

The System automatically assigns a reviewer to review a proposal when the researcher completes all the tasks in the IRB proposal Project. A reviewer is assigned based on the type of proposal that was submitted by the researcher and who last reviewed a proposal.

The admin has rights to see all the completed IRB Proposal Projects and submitted proposals in the System. The admin can also give and remove privilege level to a user to make them a reviewer or admin.



IRB Proposal System Website Homepage

Tools and Technologies

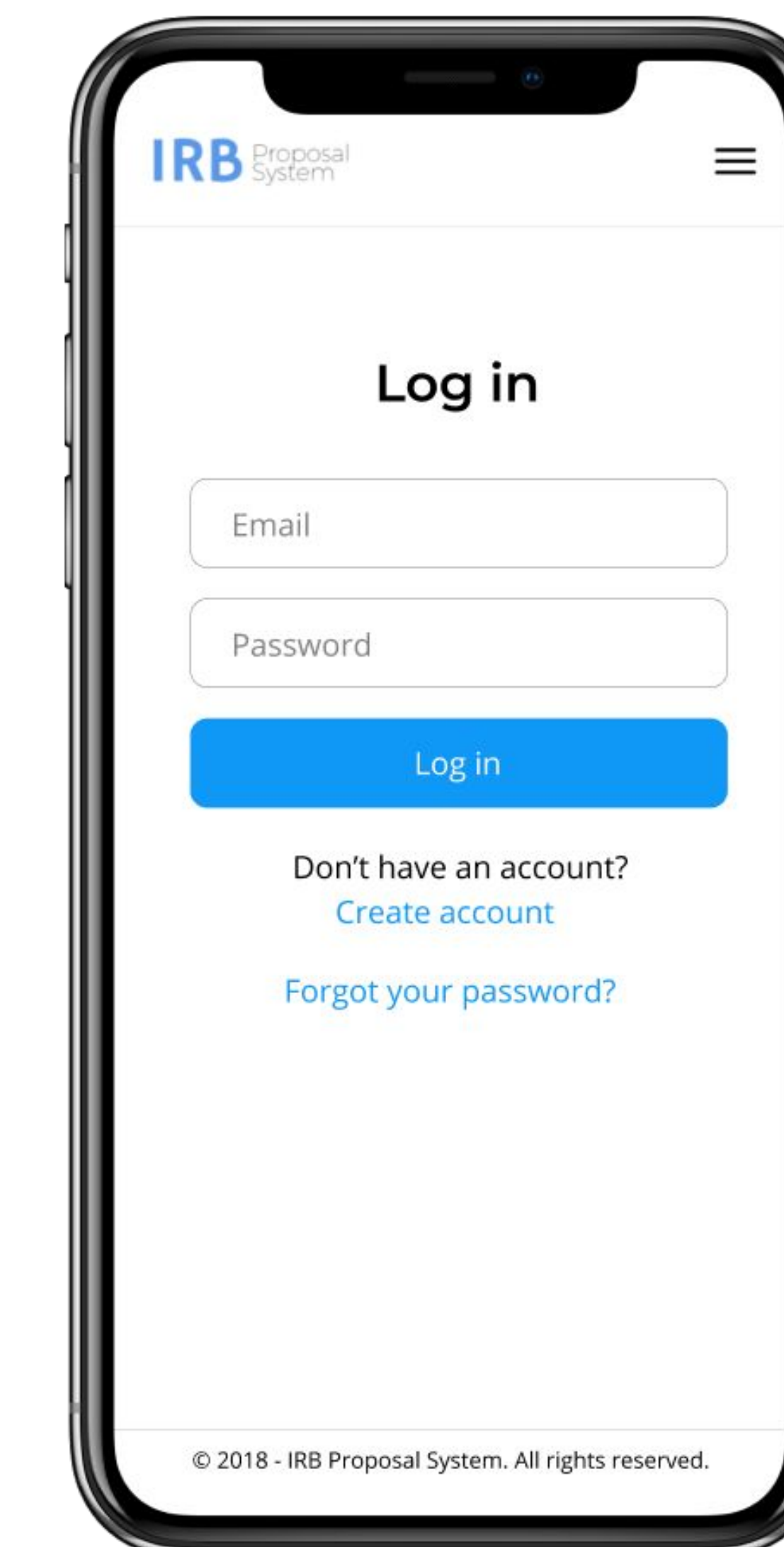


Prototype V1.0

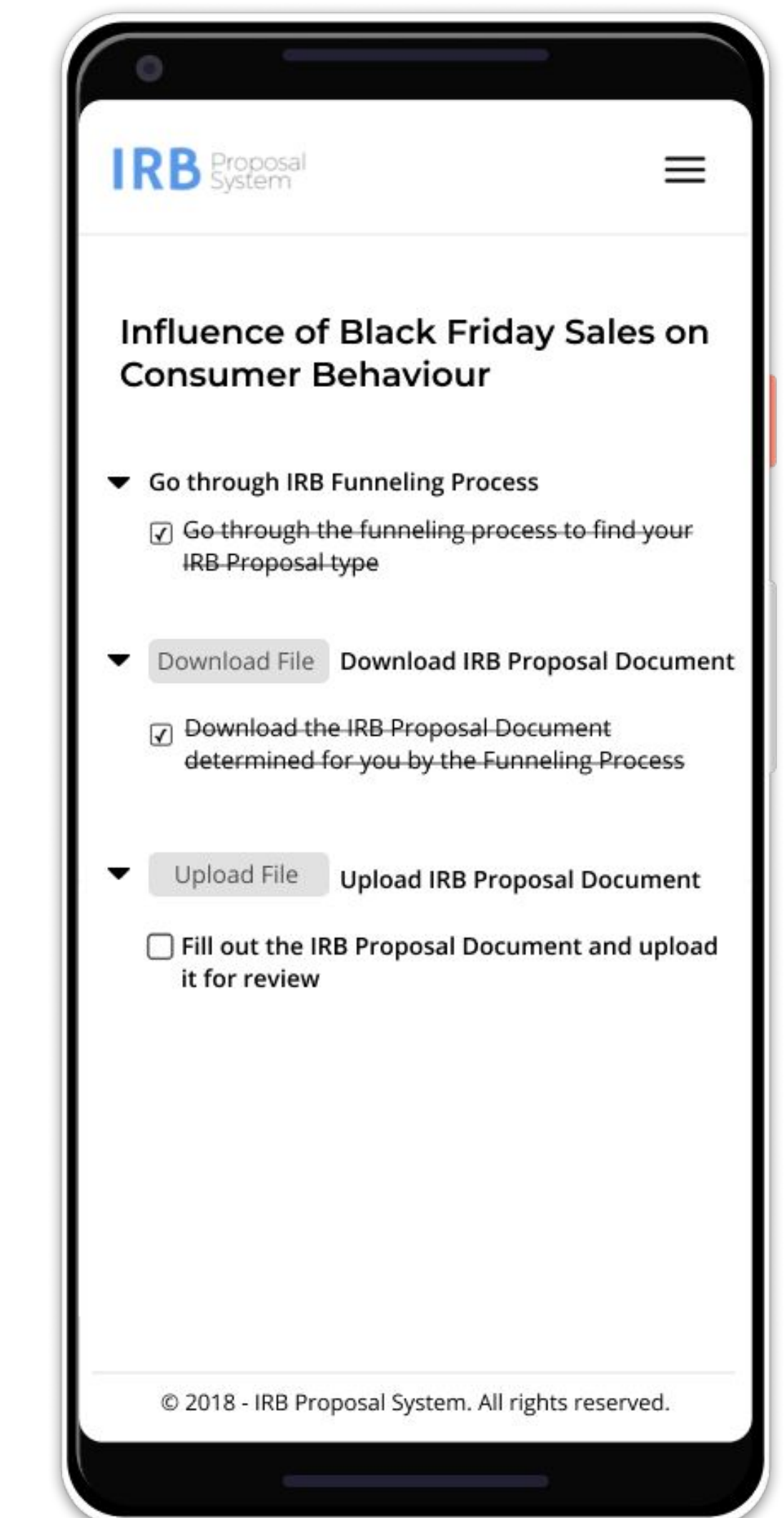
Our goal for the second spiral was to develop a prototype that performs the major functionalities specified in the system requirements document. Below are the different phases and a brief description of each phase:

- **Phase 1 - Requirement Gathering & System Specification:** We revised our specification document to meet the needs of our client, and we held more client meetings to get feedback.
- **Phase 2 - System Architecture design:** We built a loosely coupled 3-tier system using MVC.
- **Phase 3 – Implementation:** We developed a prototype of the IRB Proposal System.
- **Phase 4 – Testing:** we performed and created test cases, and carried out software inspection/code reviews.

Spiral 2 - Round 1



Mobile View - Login



Mobile View – Proposal Project

Learning Outcomes

Working on this project gave us the opportunity to apply concepts we learned in previous courses: Agile software development, building web applications with C#, MVC design pattern, and using tools like JIRA and Git. We developed practical skills that are useful in the industry like deploying a web application using Microsoft Azure, communicating with clients, working in a team, and how to integrate different technologies and frameworks together.

Spiral 1 - Round 1