Software Processes and Metrics
Group Project Assignment - Fall Semester, 2024

INTRODUCTION

The group project aims to put students applying the essential software engineering techniques to a small-sized project, confronting them with the main problems introduced by the application of these techniques to a purposefully broad problem.
With this approach, students will practice the techniques discussed during the theoretical classes but will also come across the main problems that software engineering comprises: definition of requirements, planning and team management, project metrics, process and product, etc.
The work is divided into 4 phases, corresponding to the main phases of software engineering: requirements, analysis, design and implementation. Each of these phases corresponds to a set of activities that translate into the production and delivery of a set of models and artifacts that will be subject to evaluation.

PROJECT DESCRIPTION

The goal of this project is to design and develop a persuasive crowdfunding platform that **encourages users to donate to charitable causes** by utilizing principles of social proof, goal visualization, progress tracking, storytelling, and gamification. The platform will aim to increase user engagement and donation frequency by showing the tangible impact of contributions and fostering a sense of community involvement.
The main deliverable of this project will be a desktop or mobile-based platform with an intuitive User Interface (UI) and a smooth User Experience (UX). It will feature a secure handling of donations and user data through integrated payment gateways. Your team should also include persuasive elements designed to increase donation volume and user retention. Another design goal is to obtain a scalable architecture capable of supporting multiple campaigns and users simultaneously.

Essential Features:

- **Campaign Creation and Management**: Allow verified users to create and manage fundraising campaigns, including the ability to upload multimedia content (images, videos), set fundraising goals, and provide regular updates to donors.
- **Persuasive Techniques**, e.g. Social Proof: Display real-time donation updates, showing the most recent donors, their contributions, and total donations. Showcase testimonials and top donors to influence user behavior.
- **Progress Visualization**: Interactive progress bars to display how close campaigns are to reaching their funding goals. Display segmented milestones and how each donation contributes to the overall goal (e.g., "Your $50 donation covers 10 meals").

Extra Features:

- **Social Sharing and Viral Growth:** Allow users to easily share campaigns via social media platforms (e.g., Facebook, Twitter, Instagram). Incorporate referral systems that reward users for bringing in new donors or for sharing campaigns widely.
- **Analytics and Reporting:** Track user engagement, donation patterns, and campaign performance. Use these insights to offer personalized recommendations to users for future donations or campaigns to follow.

- **Gamification**: Introduce badges, donation streaks, and leaderboards to reward and recognize users for their contributions and engagement.
- **Campaign Success Metrics:** Analyze the effectiveness of persuasive elements, user activity, and the success rate of campaigns in reaching their goals.

User Roles and Access Control:
Donors: Users who browse, donate, and share campaigns. They will have personalized dashboards to track their donations, progress, and achievements (e.g., badges earned for specific milestones).
Campaign Creators: Individuals or organizations creating campaigns. They will have access to campaign management tools and analytics to track donations, engagement, and share updates with their donor base.
Administrators: Platform moderators who approve campaigns, manage fraud prevention, and ensure compliance with platform guidelines.

During interviews with the client, your group should elaborate the requirements definition document, but also communicate effectively throughout the entire project's lifecycle, removing ambiguity, clarifying the project's scope, negotiating limitations, and proposing alternatives. The team should also elaborate a proper set of metrics to assess the project's quality, validating the releases according to the requirements of the client.

DELIVERABLES

Deliverable 1: software project schedule, Gantt chart, requirements specification document.
Due date: Week 1 (end of). **October 17**. Informal presentation in class.

Deliverable 2: software architecture and project pitch to the client.
Due date: Week 2. **October 24**. Formal presentation in class.

Deliverable 3: alpha release and functional/non-functional tests.
Due date: Week 6. **November 21**. Formal presentation in class.

Deliverable 4: December 19 (end of the semester). Formal presentation in class and final discussion.

The project is subject to a report that must contain all the elements indicated in each phase (deliverables). Group assessment will be carried out on an **ongoing basis**, through presentations carried out by the group in all lab classes. In the end, the resulting project must be presented orally through a brief 15-minute presentation subject to questions. Individual discussions will also be held for each team member. According to the course's assessment rules, this work accounts for 50% of the final grade with a minimum grade of 9.5 out of 20.

EVALUATION CRITERIA
Evaluation criteria include, but are not limited to:
- Diligence and quality of the work. Functional and non-functional tests provide good results?
- Group Dynamics: the process followed was effective? The roles were well-defined and there was teamwork? Was collaboration effective?

In this case, both process and product are evaluated.