# SE 216 – SOFTWARE PROJECT MANAGEMENT
# SOFTWARE PROCESS MODEL DOCUMENT

**PROJECT Name:** **FOOD BRIDGE**

**GROUP MEMBERS:** **Hakkı Nasiboğlu, Süeda Aktürk, Öykü İrem Oplazgil, Ece Günal, Atalay Doğan, Mehmet Tatlı**

| # | NECESSARY NEEDS FROM THE ORGANIZATIONAL PROCESS |
|---|---|
| 1 | User-Friendly App Design: Users shouldn't deal with any difficulty using and navigating the FoodBridge app. The design should be simple and understandable for every age. "There needs to be language options for all languages". |
| 2 | Feedback and Improvement Mechanisms: All users or stakeholders should be able to write and send their feedbacks. The acceptable feedbacks should be looked into and used to make improvements or corrections. |
| 3 | Legal Compliance and Regulation: Food safety and personal data protection should be comply with the laws. There should be policies and procedures to make users feel safe and reduce potential risks. |
| 4 | Volunteer Recruitment: People are needed to help collect and distribute food donations. People who volunteer to do so must deliver food smoothly and safely. |
| 5 | Logistics and Transportation: Logistics and transportation are very important to ensure that the products are delivered to the correct addresses before their expiration date. The products will be distributed from warehouses to those in need. It will be delivered to citizens who do not have the opportunity to come to the warehouses via motorized courier. |
| 6 | Communication Channels: In order for the application to function regularly, communication must be established both internally and externally. All members can be reached via e-mail. Brochures and social media ads can be used to increase recognition. |
| 7 | User Management is how the Food Bridge application ensures that the records of donors and those in need are kept and managed in processors under the name of big data. In this way, the information entered by donors and those in need is collected. This information includes their addresses, identities and records of the food they donated/received. |
| 8 | Collaboration and Growth involves the app facilitating collaboration with corporate and individual partners. The Food Bridge application is aimed to be a partnership with both some businesses and the states where it is used. In this aspect, channels are determined to communicate with relevant organizations and advertising activities are supported to expand the usage network, and advertisements can be made to expand the use of applications on large platforms. |

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# SOFTWARE PROCESS MODEL DOCUMENT

| # | UNNECESSARY NEEDS FROM THE ORGANIZATIONAL PROCESS |
|---|---|
| 1 | Excessive Customization Options: Employ potent data security measures to keep sensitive personal information of users. Ensure transparent communication about the data usage to the users according to the privacy regulations. |
| 2 | Unnecessary Administratve Hierarchy:Find and implement a way of making sure that the quality of the collected food is acceptable and is regularly inspected. Train all staff and volunteers on ways to check the overall quality and safety of the collected/donated food. |
| 3 | Overly Complex Features: The app should be simple and only provide the necessary features and options for the user. Complicated features could lead to user confusion while navigating throughout the application. |
| 4 | Overly detailed user profiles: information other than personal information, demographic information and geographical location information, such as interaction history, shopping history, should not be included in the users' profile. Unnecessary information may raise concerns about users' securit |

**SOFTWARE PROCESS NAME:**Scrum

**SOFTWARE PROCESS DESCRIPTION:** Scrum is a widely used framework that enables collaboration and iterative progress in agile project management. It describes a set of meetings, tools, and roles for efficient project delivery. Scrum is not a process, technique, or definitive method. Rather, it is a framework within which you can employ several processes and techniques. The framework is guided by core principles for example self-organization, continuous improvement, and a focus on delivering value to the customer. The Scrum framework consists of Scrum Teams and their associated roles, events, artifacts, and rules. Scrum combines four formal events for inspection and adaptation within a containing event, the Sprint. These are; Sprint Planning, Daily Scrum, Sprint Review, Sprint Retrospective. The empirical foundations of Scrum are transparency, inspection and adaptation. Scrum team has usually include 10 or fewer people. Scrum's simplicity and focus on delivering high-quality products productive have made it a go-to methodology for lots of software development teams.

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# SOFTWARE PROCESS MODEL DOCUMENT

## SOFTWARE PROCESS MODEL:

### Product Backlog:

| PRODUCT BACKLOG ITEM | REASON/GOAL |
|---|---|
| User Registration and Authentication | Users will be loged in to platform easily and safely. |
| Donor Interface | Donors should be able to add foods, including quantity, expiration date, and condition. |
| Reciever interface | Provide a user-friendly interface for recipients to request food donations. Enable recipients to specify dietary restrictions or preferences. |
| Mobile appliction | Develop a mobile application to allow users to easily donate and request food donations on the go. |
| Reporting and Analytics | Generate reports on food donations, including quantity, types, and impact. Provide analytics to track the effectiveness of the platform. |
| Matching Algorithm | Develop an algorithm to match donations with nearby recievers based on location. |
| Continuous Improvement | Establish a process for collecting feedback and suggestions for improving the platform over time. |
| Testing and Quality Assurance | Conduct thorough testing to ensure the platform is secure, reliable, and user-friendly. |
| Partnership Management | Create a system to manage partnerships with food banks, NGOs, and other organizations . |
| Logistics Management | Implement a system to manage the pickup, transportation, and delivery of food donations. Provide real-time tracking for donors and recipients to monitor the status of their donations. |
| Quality Control | Establish guidelines and procedures to ensure the safety and quality of donated food items. Implement a system for donors and recipients to provide feedback on the quality of donations. |

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**Sprint Planning:** Sprint planning is a step in the Scrum agile framework. It is a meeting in which the product's developmental goal is agreed upon and established. A plan fort he upcoming sprint based on the review of a team's product backlog is also thought of. In a succesful sprint planning, two things are gathered.
The sprint goal: A short written summary of what the team plans to accomplish in the next sprint.
The sprint backlog: The list of stories and other product backlog items the team has agreed to work on in the upcoming sprint.
The main objective of a sprint planning is to work out key details of a team's work during the next sprint. In this case, our team's objective is to decide on the details of the Food Bridge app. Some of the key things to focus on during the meeting include;
1.Deciding on the team's overall strategic objective fort he next spring.
2.Reviewing of the product backlog and deciding on which parts should go on the spring backlog.
3.Calling for a team consensus and discussing team capacity.
4.Discuss possible issues that could slow down the process and assign new spring backlog tasks according to the skills of the team members.
5.Agree on a suitable timeframe for the upcoming sprint.

**Sprint Backlog:** A sprint backlog is variety of items that a cross-functional team chooses from the prior product backlog to work on for their upcoming sprint. The sprint backlog is mostly the result of the sprint planning, in which team members of Food Bridge will agree on the sprint backlog, the primary output. Sprint backlogs are often well-organized built-in spreadsheets which also can be developed or maintained later on.

**Scrum Team:** Food Bridge Scrum Team is a small group of people who undertake their Scrum. The Scrum Team of FoodBridge involves one Scrum Master, one Product Owner, and Developers. Usually Scrum Teams consists of 10 or less people. The Scrum Team of FoodBridge consists of 6 team members. Smaller teams generally communicate better and are be more efficient. FoodBridge Scrum Team are cross-functional, every team member brings out unique set of skills to the team to ensure the compilation of development process.
The Food Bridge Scrum Team is responsible for all aspects of the product life cycle. This includes working with stakeholders, ensuring product quality, maintaining and operating the product, conducting experiments, carrying out

research and development work and completing all other tasks that are important for the success of the project.

**Daily Scrum:**The Scrum team of FoodBridge used Daily scrum to review progress towards the Sprint Goal, adjusted the Sprint Backlog and decided on the upcoming planned tasks.
The FoodBridge Scrum Team spent a short 15-minute meeting every workday. It takes place at the same time and in the same place every working day during the sprint. If the Product Owner or Scrum Master is working on elements of the Sprint Backlog, they participate as developers.
Developers of FoodBridge chose many structures and techniques on Daily Scrum to complete the Sprint Goal and planned for the next workday. Teams Daily Scrums improved focus and self-management.
Daily Scrums also improved communication, helped identify impediments, helped with quick decision.
**Increment:** FoodBridge Scrum Increment concluded the process of the product development.The process consisted of Sprints and at the end of every Sprint there was an increment.The increments is a functional piece of the product and they were used by customer.Every increments got implemented on to previous increment to improve the process.
Increment gots approved by the product owner meaning the it meets the requirements and its ready to use. All the increments gots reviewed in Sprint Review to ensure the quailty of the product.

**Sprint Review:** The development team of the Food Bridge project evaluated in detail the work completed and the results achieved during the last sprint. The team vividly presented the new features and improvements of the mobile distribution. These features included automatic reminders to help users keep track of products with impending expiration, as well as improvements to make it easier to access food banks. User feedback was taken into account and efforts were made to make the launch more accessible. Addressed some minor bugs and user feedback that arose throughout the sprint. Additionally, the product backlog was reviewed and updated to review its apparent progress and determine polish for future sprints.

**Sprint Retrospective** : The development team of the Food Bridge project evaluated the challenges and successes it encountered during the last sprint. First, they celebrated the work successfully completed and newly added features during the sprint. They stated that new features such as automatic

reminders and improved user interface have improved the user experience and that the application has evolved in a more user-friendly manner.

However, the team also faced some challenges. In particular, some technical issues and difficulties in responding quickly to user feedback were highlighted. It was also noted that the workflow was interrupted due to some unplanned obstacles not being addressed in a timely manner throughout the sprint. The team was determined to learn from these challenges and create improvement opportunities for future sprints. Accordingly, they decided to hold tighter stand-up meetings to increase communication and collaboration and use more effective tools to better monitor work. Additionally, an action plan was created to reduce technical debt and respond faster to user feedback.

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# SOFTWARE PROCESS MODEL DOCUMENT

## REASONS TO CHOOSE THIS MODEL:

*Flexibility and Ensuring Functionality: The Food Bridge project has a complex relationship between donors, those in need, other stakeholders and governments. Factors such as user needs, quality, quantity and timing of food donations may constantly change. Scrum's flexible approach can quickly adapt to these variations. Each new sprint cycle is based on user feedback and iterates based on changing requirements. This way, the project team can ensure valuable functionality by consistently prioritizing the most important work.

*Frequent Iterations: Scrum's short sprint cycles ensure that the project is checked frequently and at intervals by receiving constant feedback from those in need and donors who will use the Food Bridge application. In this way, the final version of the product is ensured to constantly gain value and improve.

*User Focused: The first purpose of the Food Bridge application is to unite donors and those in need at the same point by meeting their wishes and needs. Scrum releases a product at the end of each Sprint cycle, presents it to users, gives users the chance to test the developed product, and allows users to give feedback, allowing the Scrum Team to respond to user needs more quickly. In this way, a user-oriented product is created.

*Early Problem Detection Possibility: Food Bridge application has great responsibilities affecting human health. Food quality control, user satisfaction is always a risk for the project. Compared to other models, Scrum's frequent iterations enable early problem detection and management of project risks. Thus, any problems that may arise in the project can be identified at the end of each Sprint and rapid actions can be taken to solve them.

*Team Collaboration: Sprint Planning allows the team to determine the tasks that the team must complete during the Sprint. Sprint Review ensures that the Sprint result is evaluated together with developers and stakeholders. Additionally, Daily Scrum meetings enable the team to stay in touch and solve the problems they encounter together.

*Quick Use of the Product: Once the Food Bridge application is put into use, its use should not be stopped for a long time. In such a situation, people in need will be victimized. Scrum has frequent sprint cycles, so that at the end of each Sprint cycle, the product is developed and made available to the user again without wasting time.

*Correct Determination and Management of Costs: One of the main determinants of a project is the resource and cost. In addition to the software costs, the Food Bridge application also needs hardware devices to store big data. Each Sprint cycle result that Scrum has is proof that the project is in the right direction or not. Thus, unnecessary resource use and costs are prevented. At the end of each Sprint, the estimated resources and costs are determined and the project is shaped accordingly.

*Responsibility and Different Perspectives: Scrum; it consists of Product Owner, Scrum Master and Development Team. In Scrum, there are tasks assigned to each person for each Sprint, ensuring that everyone is responsible for the project. Scrum's inclusion of people in different roles enables different perspectives to emerge in the development of the project.