TERM PROJECT TOPICS

**Below you will find the software projects options for this semester. Only few required functions are mentioned for the following projects below. But you may want to be more innovative. To do this, please find similar Mobile or Web applications in Web/mobile stores. As a team, you can list the functional requirements considered of that similar project you found and define additional innovative functions for your project as a team. You can define more innovative functional requirements based on roles expected (e.g. parent role, admin role, health professional, student, teacher role, etc.) for your project. In this semester, you should also develop your project’s “User Screens” using Figma, or Proto.io, or Adobe XD, or other. There are YouTube videos belonging to these tools given end of this doc, but also you can find new videos from YouTube or another channel.**

**ROJECT TOPIC 1**: Pressure Ulcer Prevention (PUP) OR BED SORE app.

**A tool designed to help bedridden people monitor their pressure ulcers. It is designed to allow patients to track pressure ulcers of high-risk areas and show tips/ recommendations for improvement.**

**FEW SUGGESTED FUNCTIONS:**

* 1. Track your patient bed sores on skin
  2. Ulcer tracking tool – track ulcers on the ischium, sacrum, heels and elbows.
  3. Camera integration for visual tracking over time

1. Share information to parent/health professionals
2. Gives you recommendations for ulcer improvement depending on the ulcer area.
3. Reminders (https://www.3m.com/3M/en\_US/medical-us/prevention/pressure-injuries/)
   1. Reminders to perform pressure relief.
   2. Reminders for wound disinfection.
   3. Reminders for drugs ,etc.

**Hint: First understand Pus. Then find PU’s observed areas in general (for ex define 8 areas/points only). Find types, stages, and severity degrees of PUs. Read these and more:**

1. [**https://www.bcpft.nhs.uk/documents/policies/p/1069-pressure-ulcers-prevention-and-management-sop-1-sskin-assessment/file**](https://www.bcpft.nhs.uk/documents/policies/p/1069-pressure-ulcers-prevention-and-management-sop-1-sskin-assessment/file)
2. [**https://www.iow.nhs.uk/Downloads/SSKIN%20Bundle/SSKIN\_Bundle\_CompleteWeb.pdf**](https://www.iow.nhs.uk/Downloads/SSKIN%20Bundle/SSKIN_Bundle_CompleteWeb.pdf)

**PROJECT TOPIC 2: Stray Animals Tracking Mobile app**

**Stray animals are pets (especially dogs and cats) that live on the streets and do not have a home or owner. These animals face many problems living on their own, such as malnutrition, overpopulation, infections and diseases due to lack of veterinary care, abuse from humans, and more. What can you do to help stray animals with this project?**

**FEW SUGGESTED FUNCTIONS:**

1. **System users can contact appropriate authorities**
2. **Adopting or Adopting a Stray Animal**
3. **Supporting or Donating to Support Organizations to Help Stray Animals**
4. **View the information of each stray animal and receive voluntary donations (e.g. health, food, shelter expenses)**

**READ MORE ABOUT:**

1. <https://strayanimalfoundationindia.org/3-ways-to-help-stray-animals/?gclid=CjwKCAjwgsqoBhBNEiwAwe5w02U7M-IOqvVirBKNFAHvmHtFfF_duU0HKPyHxFWKfEv5uBWNn8Y7ohoClvcQAvD_BwE>
2. <https://yourstory.com/2018/02/let-it-wag-mobile-app-stray-dogs>
3. 'Let It Wag' is a mobile app that allows NGOs, pet lovers and vets to come and rescue millions of stray animals. Traumatised by an incident in his neighbourhood, Yash Sheth decided to create an online platform that would connect NGOs and pet lovers to these dogs.

Find more similar apps, and analyze them to obtain your app.

**TEAMS AND ROLES:**

Each Project Team will be at most 4 students. There will be two presentations during whole semester. For any questions about first report, the students should contact your lab assistant. Team leader should give the names of the team members to lab assistant. Team leader should assign the role/roles to each member in your team. Roles can be:

* Project Manager/Lead Systems Analyst
* Database Developer/Administrator/Lead Programmer
* Programmer
* User Interface Designer/Web Developer
* Network Designer/HW Designer/Tester
* Mentor/Customer (Your Assistant)

**THE REPORTS ARE EXPECTED TO SUBMIT BY STUDENTS:**

Student will submit THREE project reports that will be a collaborative effort of team.

1. **Project Planning & Management (PPM) report** (PPM: should include Project Planning & Feasibility studies + a Gantt Chart + an organization chart + procurement activity details + Risk Management Table, etc. in MS Project Tool or OpenPrj)
2. **SRS Report** (You should have all project aim, target, success criterias, details, design works, including diagrams of Functional requirements, Non-Functional requirements, **Figma** or Protoi.o for designing your user screens, some of UML Diagrams) + A PPT presentation
3. **Final Report** involves all UML diagrams (Context Diagram, Level-0 Diagram, Use Case diagrams, BPMN, Activity, Sequence, Class diagram, state diagrams, etc.), user guide, test case tables etc.) + A PPT presentation

**MORE DETAILED:**

1. PROJECT PLANNING & MANAGEMENT (PPM) Document will involve:
   1. Project Definition, Aim, Scope, Target Users etc.
   2. WBS
   3. Required Resources
   4. Gantt Chart
   5. Project Package Tables
   6. Risk Analysis Table
   7. Procurement Table
   8. PM Tools Used (SWOT, Affinity, Burndown chart, etc.)
   9. CPM (Critical Path Management) analysis by using PERT (defining paths)
   10. Creating network diagram of the main tasks in WBS.
2. SRS reports will involve:
   1. Functional Requirements
   2. Non-Functional Requirements
   3. General System Architecture Diagram
   4. User Screens Designs (Figma, Proto.io, or Adobe XD, etc.)
   5. PM Tools Used (QFD, Kano, Fishbone, etc.)
   6. Some of UML Diagrams such as
      * Use Case Diagrams and Tables
      * Sequence Diagrams
      * Activity Diagrams
      * Class diagrams, etc.
3. FINAL REPORT will involve:
   1. Combined and Revised of PPM and SRS parts
   2. UML Modelling
      * Use Case Diagrams and Use Case Narrative Tables
      * Sequence Diagrams
      * Activity Diagrams
      * BPMN diagrams, etc.
   3. DFD Diagrams
   4. Class diagram
   5. Physical Database Tables, and etc
   6. Algorithms, Implementations
   7. PM Tools Used (Pareto, Statistical Analysis Charts, etc.)
   8. User Guide
   9. Test Cases and results
   10. Conclusion

**ALL DOCUMENTS SHOULD BE SEND TO** [duygu.celik@emu.edu.tr](mailto:duygu.celik@emu.edu.tr) **and course assistants.**

**SUGGESTED TOOLS FOR PLANNING, ANALYZING, DESIGNING and DEVELOPMENT STAGES:**

1. **UML DIAGRAMS DESIGN**: USE MODELIO

* https://www.modelio.org/910-modelio/tutorials.html
* https://www.modeliosoft.com/en/
* https://www.modelio.org/
* https://www.modeliosoft.com/en/resources/videos-demos.html
* https://www.modelio.org/resources-menu/videos.html

1. **UML MODELING**: use MODELIO, or Draw.io, or Lucid chart, or MS Visio (UML, Use Case, Class, Sequence diagrams etc.)
   * <https://www.youtube.com/watch?v=GQKqQaL_m5g>
   * <https://www-youtube-com.translate.goog/watch?v=GQKqQaL_m5g&_x_tr_sl=en&_x_tr_tl=tr&_x_tr_hl=tr&_x_tr_pto=sc>
   * <https://www.youtube.com/watch?v=mDv2NBpzigw>
   * <https://www.youtube.com/watch?v=yuY2k19JW5A>
   * <https://www.youtube.com/watch?v=4UCDQVBsUlQ>
2. **FOR USER INTERFACE DESIGN**: Use FİGMA
   * <https://www.youtube.com/watch?v=FTFaQWZBqQ8>
   * <https://www.youtube.com/watch?v=dXQ7IHkTiMM>
   * <https://www.youtube.com/watch?v=jk1T0CdLxwU>
   * <https://www.youtube.com/watch?v=-sAAa-CCOcg>
   * <https://www.youtube.com/watch?v=HZuk6Wkx_Eg>
3. **FOR USER INTERFACE DESIGN:** SketchUp (2D/3D User Interfaces, others,etc), https://www.youtube.com/watch?v=k46nr-42Mu0
4. **USER INTERFACE DESIGN**: MockFlow Tool
   * https://www.youtube.com/watch?v=lD5lT3LX0Ck
5. **PROGRAMMING TOOLS** : Netbeans, PHP, Java or .NET, etc.
6. **DATABASE TOOLS**: MS SQL, MY SQL,Oracle, etc.
7. **PROJECT MANAGEMENT TOOL**: Create your project by using the MS Project or MS OpenPrj Tools. See Tutorials:

* https://www.youtube.com/watch?v=sSS1tu1yQ-Q
* https://www.youtube.com/watch?v=yEclUahpSbs
* https://www.youtube.com/watch?v=4mfgajCVTvU