Project Proposal

Summary

For the final project, we would like to develop a web version of Tamagotchi, including different versions for Desktops, mobile phones, and tablets. The main purpose of this web application is to allow users to play with their virtual Pikachu. The framework we will use for development is Next.js. Users will be able to interact with their Pikachu by feeding them food, playing with them, giving them medicine if they are sick, and cleaning them. By performing these actions they will keep the Pikachu in a good status, and earn satisfaction from seeing their pet grow.

Project Background

Our project is based on the well-known game Tamagotchi. However, the original Tamagotchi is too old and we would like to make a modernized version of it. We would incorporate:
1. A colored version of Tamagotchi, which was originally in black and white.
2. We would add a "heal pet" option for the pet, allowing the users to alter the health status of the pet.
3. If time permits, we would add a login page to allow multiple users to play the game.

Core Features

In this project we will have a set of features that will allow the user to interact with their pet. The user will be able to determine the name of their pet and interact with their pet by clicking on one of four buttons (feed me, play with me, heal me, and clean me). Clicking on these buttons will improve the state of your pet. The feed me button will improve the pet's hunger/satiation metric, the play with me button will improve the pet's happiness metric, the heal me button will improve the pet's health metric, and the the clean me button will improve the pet's cleanliness metric. Both the clean me, and feed me button's will also provide slight improvements to the pet's health metric. All these metrics will be displayed to the users as bars with a numerical value from 0-100 to indicate how well that need is being met for the pet. These bars also change colors as they reach specific thresholds (red for low (0 - 33), yellow for medium (34-66), and green for high (67-100)). These metrics will go down over time. The pet will also have a growth stage determined by its age.

Further details:

Pet Core Features
- Basic Info of the pet
  - Name of the pet (Can be edited by user)
  - Weight
    - Determined by age & hunger stage
  - Age

- ■ Affected by time
- ● Growth stage (Infant, Child, Teenager, Adult, Senior, Death)
  - ○ If age has reached some limit, the growth stage will change.
  - ○ The current growth stage will be listed next to the age.
  - ○ [Extra] If time permits, we would change the image of our pet in different growth stages.
- ● Satiation metric (0 - Hungry; 100 - Full)
  - ○ The satiation metric will continuously decrease (become more and more hungry) as time progresses
  - ○ It will increase as user feeds the pet
  - ○ If it reaches 0 for a certain amount of time, the pet will die.
- ● Happiness metric(0 - Sad; 100 - Happy)
  - ○ The Happiness of the pet will be determined by:
    - ■ How frequently the pet is played with
  - ○ If it reaches 0 for a certain amount of time, the pet will die. (IsAlive = False)
- ● Health metric (Healthiness, Illness)
  - ○ The health stage will be affected
    - ■ Satiation stage, less healthy if hungry
    - ■ Cleanness stage, less healthy if not cleaned enough
    - ■ Healing, how frequently the pet is healed from sickness and injury.
  - ○ If it reaches 0 for a certain amount of time, the pet will die. (IsAlive = False)
- ● Cleanness metric (0 - Dirty; 100 - Clean)
  - ○ The cleanness metric will continuously decrease by time. If the user "clean the pet", then the value will increase
  - ○ If it is below a certain threshold for a certain amount of time, the health stage of the pet will decrease.
- ● Death stage (Keep track using an IsAlive variable default to true)
  - ○ Not displayed in UI, but as something we use to keep track of the status of the pet.
- ● Image (Animation) of the pet.
  - ○ Simple Version:
    - ■ If the happiness is beyond a certain threshold, we will have a "happy" version of the pet.
    - ■ Otherwise we will have a "sad" version of it.
    - ■ An image if the pet dies.
  - ○ Challenging Version:
    - ■ We can have an idle animation, an animation for user actions, a sleeping animation, etc.

User Core Features
- ● Basic Info of the user
  - ○ User name

- ○ Password of the user (To support multiple users)
- ● User Actions
  - ○ Clean the pet
    - ■ Increase the cleanness and health metric
  - ○ Feed the pet
    - ■ Increase the hunger and health metric
  - ○ Heal the pet
    - ■ Increase the health metric
  - ○ Play with the pet (like pet the pet)
    - ■ Increase happiness metric
- ● Feasibility of the features
  - ○ Changing the image/animation based on different stages / different user actions can be challenging, so we will leave that in the end as an extra feature.
  - ○ Allowing multiple users may be challenging as we need to design a new login page.
  - ○ Besides that, all other features are pretty feasible.

Timeline:
- We would like to finish the base implementation of our design soon so that we can start debugging and adding additional features.
- Our hard deadline is December 2nd so we would like to finish the basic implementation of design and functions by November 20th.
- From November 20th to December 2nd, we would like to work on optimizing the numbers (so that the game is more balanced) and adding challenging features (like user log-in, animation of pet images, etc.) on top of our basic implementation.

Role & Responsibilities
- We plan to pair-program and meet two times a week to work consistently to work on our project.

Tech Stack
- Next.js
- CSS
- HTML
- Javascript
- React