IMMI Project Proposal

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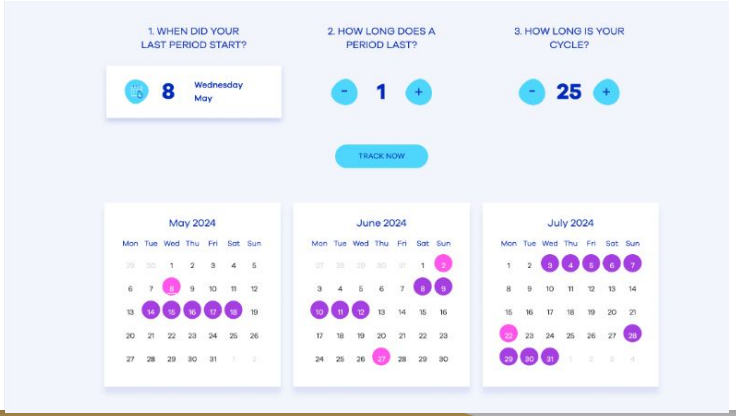
Problem Description

- The issue of low awareness of the menstrual cycle persists despite the increasing economy, statistics have shown that **40%** of the girls in the US felt "confused and unprepared" for their first period, this problem is more prominent in developing countries.
- Current methods for raising awareness and/or providing assistance such as cycle tracking apps have exhibited negligence toward data privacy exacerbating the issue despite **79%** of women showing concerns.
- Vital and urgent to develop means of remediation.

What We Propose

- We propose to develop a tool to help track and educate women about their periods
- The tool is required to store tracking information privately
- The tool will also include information for women to learn about how each part or their cycle and the potential impacts



Technical Objectives

Primary Objectives over the next 4 weeks:

1. Cycle prediction based on user input
2. Prediction visualization on a calendar
3. Syncing with local calendar
4. User customization of the webpage and calendar in terms of appearance, notes, emojis, etc

Further Objectives to investigate if main functions are achieved:

1. AI prediction algorithm that interprets user inputs (notes, mood, emojis)
2. AI recommendation algorithm giving suggestions on diet/fitness
3. An efficient compression scheme to reduce local memory requirements
4. Data encryption to ensure locally stored information is secure in the event of leakage

Proposal Quality Assessment

Responsible

Secure data storage

Accurate tracking enabling dependency

Responds to a genuine need

Better (more secure and personalised) product in existing market

Adds significant value

Urgent demand for a tool that raises awareness and ensures data privacy

Accessible to end-users

Software accessible from multiple operating systems and in hardware form

Context-appropriate

User customisable

Interoperable with cell phones and smartwatches

Methods of Assessment

Verifying the successful implementation of functions (including safety concerns)

- Include testable and trackable criteria for each function.
- Performing simulations and unit tests to ensure our app handles both normal and extreme cases of use (e.g. data surge).
- Enlist external experts to challenge our plan for data privacy

Validating that user demands are met

- Enabling user feedback on the app and conducting interviews after using it for some time
- Involve users when the requirements for the solution are being defined
- Timely communication with concerned parties to prevent deviations.

Project Management Plan

Members Strengths and Weaknesses:

- Rosie Clifton:
  - Strengths: Previous experience in website design
  - Weakness: Lack of knowledge in coding with software development
  - Task: User customisation and local data storage
- Zi Cai:
  - Strengths: Experience building and training AI models, familiar with python and coding collaboratively
  - Weakness: Lack of knowledge in software development
  - Task: Prediction algorithm and local calendar syncing
- Bangyi Gao:
  - Strengths: Past experiences in training and implementing AI models, familiar with Python and C++
  - Weakness: Lack of knowledge in software development and web development
  - Task: App main interface and functions portals & LLM API

Skills and Training Required

- Website design, development, and maintenance
  Learn *Flutter* for web-based app development
- Coding collaboratively
  Familiarize with individual repository branch maintenance and version control system
- Training AI models and working with pretrained networks
  Development of unsupervised learning models (personalized recommendation) and integrating LLM API

Costing

1. Computation cost for AI training (e.g. renting GPUs)
2. Development tool
3. Operation and maintenance fee

Low development cost but potentially high operational cost

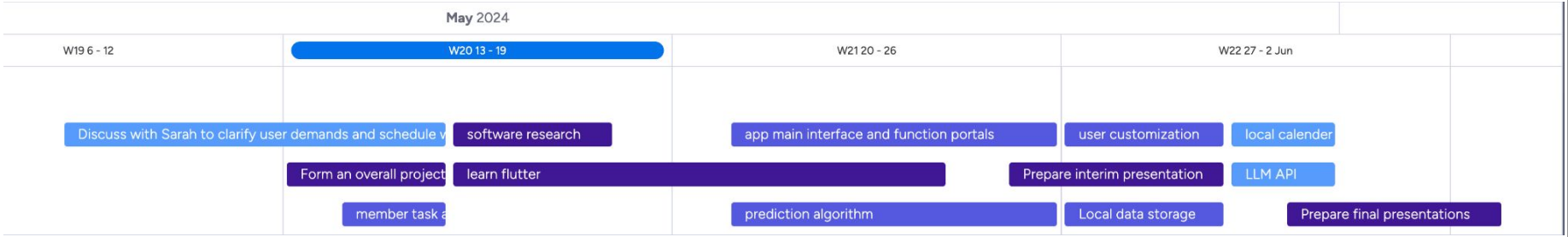
Timetable

- Week 1 (9 May – 15 May):
  - Discuss with Sarah to clarify user demands and schedule weekly meetings for progress checking
  - Form an overall project proposal; lay out objectives over the next 4 weeks
  - Assign tasks to utilize each members strengths
- Week 2 (16 May – 22 May):
  - Research on data privacy, prediction algorithm, website design
  - Learn how to code in Flutter for the website design and start writing code

Timetable

- Week 3 (23 May – 29 May):
  - Have a website with the calendar able to log input data and predict cycle
  - Ensure data is being stored locally
  - Prepare interim presentation
- Week 4 (30 May – June 5):
  - Look into possibility to sync data to local calendar on device
  - Ensure website has achieved primary objectives, attempt to achieve secondary objectives
  - Prepare final presentations

Task	Due date	Priority	Timeline	People
Discuss with Sarah to clarif...	16 May	Low	9 - 15 May	Charles
Form an overall project pro...	16 May	High	13 - 15 May	All
member task assignment	17 May	Medium	14 - 15 May	All
software research		High	16 - 18 May	All
learn flutter		High	16 - 24 May	All
app main interface and fun...		Medium	21 - 26 May	Barry
prediction algorithm		Medium	21 - 26 May	Charles
user customization		Medium	27 - 29 May	Rosie
Local data storage		Medium	27 - 29 May	Rosie
Prepare interim presentation	27 May	High	26 - 29 May	All
local calender syncing		Low	30 - 31 May	Charles
LLM API		Low	30 - 31 May	Barry
Prepare final presentations	3 Jun	High	31 May - 3 Jun	All



Risk Assessment

- Electrical (e.g. equipment operating at voltages >1000V, working on exposed circuits with voltages >50v) - NO
- Radiation (e.g. X-rays, radio-chemicals) - NO
- Chemical (e.g. harmful, toxic, flammable, sensitizer, carcinogenic etc.) - NO
- Laser (e.g. of class 3B or 4) - NO
- Robotics - NO
- Mechanical (e.g. power tools, workshop machinery, powered lifting etc.) - NO
- Other (e.g. ergonomic for computer work, biological, working at heights, lone working etc.) - YES: low-level risks associated with ergonomics of computer-based work. To be managed by careful initial setup of workstation, taking regular breaks, and avoiding extended working hours

Contingency Plans

1. Data Privacy Breach: If a data breach occurs, immediately identify the scope of the breach and inform authorities. Conduct a thorough investigation to understand the breach's source, offer compensation to the affected users, and enhance security measures to prevent future breaches.

2. Technical Glitches or Downtime: In case of downtime, communicate transparently with users about the issue, and provide notices in advance of downtime alongside the expected resolution time.

3. Legal and Compliance Issues: If a legal issue arises, work closely with legal counsel to evaluate the nature of the issue, ascertain the extent of impact, and identify means of remediation.

4. Project Delays: If delays occur, reassess the timeline and prioritize upcoming tasks to guarantee core features. Communicate with the coordinator about revised timelines and progress. Identify the reason behind the delay to avoid repeated occurrences.

5. Overruns: If overruns occur, identify the reason behind the overrun and discover non-essential elements that can be scaled back or delayed. Seek additional funding if necessary, with a clear justification.