

CM3203

One Semester Individual Project

Initial Plan – A personal diary app

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Project Description

The human brain is not always trustworthy. A number of studies undertaken in recent years have demonstrated that the memories a person believes to be real can be distorted or in some cases, completely false recollections (Baggaley 2017). People often make assumptions to fill in details and missing elements in an event that they think should have taken place. Keeping a journal of events and experiences can help people to accurately remember and relive memories.

Personal diaries have been part of human life for hundreds of years, from the traditional ink on paper, to now more modern approaches with digital dairies and online blogs. Personal diaries allow people to express their thoughts and emotions which have become invaluable for historical purposes. Being able to read the accounts of people who lived through historical events gives us an insight into how they were feeling at the time as well as providing a personal account of the events as they happened. Throughout history the popularity of keeping a diary or journal has slowly declined. In addition, the most prominent users of journals has changed over the years from historically it being the adult male who was the only demographic educated enough to be sufficiently literate to write a diary, to more recently, teenage females using online blog posts in a more social aspect of journaling emotions and experiences (Ancestral Findings 2016).

However, many diary users claim the benefits of keeping a diary can include regulating and overcoming emotions, to allow them to feel happier, coining this the “Bridget Jones effect” (Sample 2009). With all the benefits of keeping a diary, it seems that more people should be encouraged to write every day, but it is important that the traditional medium of a pen and paper diary should be adapted to the digital world, to allow people to maintain their portable and fast paced lifestyle with the ability to note down their experiences whenever they like.

A digital diary could have many added features and benefits compared to a physical diary, including but not limited to;

- using geotagging and user location to track the places the user visits in their day. Analysing this geodata will enable people to discover a routine, tracking most often visited locations, and using the emotions that may have been recorded that day to establish patterns of emotions and locations
- using smartphone cameras to capture images to accompany the text written by the diarist, to help them remember the moments they have experienced. Since “a picture paints a thousand words” modern technology allows past events to be brought back to life more vividly than via the written word alone
- tracking and working towards personal goals set by the user, that can be displayed in an easy to read format which will help the user to see the milestones they have achieved and see how much further they are from their goals
- daily reminders of the simple tasks that the user faces every day, including daily to-do lists or tasks such as remembering to take certain medications, or reminders of personal events or national holidays. Allowing the diary to become a calendar to help organise the user’s life
- being able to track and analyse a user’s emotions. Matching the diary entries against their emotions at the time allows patterns in behaviour and emotions to be identified, giving the user an insight to how their past and present emotions correlate.

- The security of a digital diary includes the ability to back up data stored in the diary so that this data cannot be lost. In addition, the security of being able to protect the data with passwords may be very important to some users particularly given the personal nature of the information stored in the diary.

Project Aims and Objectives

The aim of this project is to design and develop an Android app that can be used as a diary or journal. This app will allow the user to enter journal entries via text posts, these will be grouped by date and accessible at the user's convenience via a calendar interface. The journal entries can also include photographs, emotion tags and geographical location tags. The emotion and location tags can be analysed to show patterns between specific locations and average emotion documented for this location, or analyse common descriptions used for locations based on the users inputted data. The app will also allow reminders for events specific to the user, these may be individual events occurring on a single date, or daily reminders that the user can set for specific days of the week. Usability of the app will be the main requirement, the app should be simple and intuitive to use while being aesthetically pleasing, the user interface will be informative but concise to make the user experience enjoyable

The main objectives of this project can be grouped into the following groups. These are the main sections of the project that need to be implemented in order to allow successful creation of the app.

1. Research
 - a. Possible methods of implementation for each feature of the app
 - b. Existing solutions - analyse benefits and drawbacks to each
2. Identify Requirements
 - a. Research user needs – develop personas
 - b. Create user requirements – including research user interface requirements/assets
 - c. Create non-functional requirements
 - d. Create functional requirements
3. Design
 - a. Design user interface
 - b. Dialog analysis – design of how system flows
 - c. Design data storage model – storage of each entry
4. Implementation
 - a. Create UI
 - b. Develop and implement all requirements
5. Testing
 - a. Test against previously developed test cases
 - b. User testing – evaluate user interaction success with system
6. Documentation (Developed throughout project)
 - a. Background research
 - b. Details of approach chosen
 - c. Implementation details
 - d. Results and Evaluation
 - e. Conclusions and possible future work and improvements

Apps like Day One Journal for iOS and Diarium for Android are the highest user rated apps. Users praise the design and functions of these apps. The UI of the app is mentioned in a significant number of reviews, stating that the design of these apps is user friendly and makes the experience of using the app easier and more pleasant. Other reviews of these applications appreciate that users have a variety of input methods for their journal entries, so using not only text, but photographs and tracking locations on maps.

Having researched current top journal apps I have identified the functions that I will realistically be able to achieve in the project given my currently limited knowledge of creating mobile apps, and the time frame that I have to complete this project. There are a number of features from current apps that would be beneficial, and many current users appreciate. Such as being able to sync the application with other software, for example Google Drive, but as this would involve acquiring licences with the appropriate programs, this is a feature that I will not be implementing in my application.

The main functions I would like my project to achieve can be split into two categories. Journaling and tracking and reminders. Within these categories there are many operations that I will implement as the primary functions and operations of the app, there may be secondary functions that I would implement if I have the time and resources available once the primary functionality has been achieved.

Journaling

- Primary Functionalities
 - User can enter journal entries in the form of text: these entries are stored by date and can be accessed and edited at the user's convenience
 - Journal entries will be accessible via a calendar: user can select dates from the calendar and all information previously stored for this date will be available and accurate to the user. Displayed in a consistent and practical interface
 - User can associate emotions to individual journal entries: user can select an emotion tag to be linked to a specified journal entry to represent the user's emotional state for this day
 - Photographs can be taken or uploaded and displayed within the entry: the user can choose to take a photograph from within the specific entry, this photograph will be tagged with the date taken and will be displayed when the entry is viewed. User also has the option to select a photograph from the device's camera roll, the photographs that related to the required date will be available first to the user to select.
 - Location of the user can be added to the entry: the user can select the current location at the time of entry creation, or select a location from location histories, or enter new locations via selecting on a map
- Secondary Functionalities (subject to time and resources available)
 - Create a map of location histories that display information about the dates visited: this could include the emotions felt for this location, a display of photographs taken at this location (this would include the function of being able to tag individual photographs with location)

- Analysis of the user's emotions: linking and relating specific dates, locations etc. learning from the user's entries to create visual analysis for the user. This would be automatic analysis that could analyse all data to reveal pattern and relationships between all data the user has entered. Alternatively, the user could analyse the data manually by inputting specific activities, people's names etc. and the app will be able to analyse data containing the specified input to return analysis of the subset of data (eg inputting "Mum" will return entry information from all entries that include the word "Mum")

Tracking and reminders

- Primary Functionalities
 - Enable the user to add personal events for specified days: allows events such as birthdays, anniversaries, holidays etc. These will be displayed on the entry for the specified day. The user can choose to have reminders set up for individual events
 - User can have reminders for daily tasks: this could be in the form of a simple to-do list of tasks the user would like to be reminded of when viewing the entry. Or reminders of tasks they would like to be reminded of on specified days of the week (eg medication reminders every day, recycling reminder weekly/every Friday etc.)
 - Countdowns to user's specified events are displayed; user can select events and a countdown of weeks, days, hours etc. can be displayed in a format of the users choice
- Secondary Functionalities (depending on time and resources available)
 - Tracking of user's personal goals: this could include functions like health, exercise, weight etc. The app could display previously tracked data and any milestones completed on the related entry date and inform the user of how far away they are from any milestones or the goal. Analysis of data could suggest to the user, based on progress so far; the time/effort/changes it may take to complete their goal. All analysis and progress will be displayed to the user in a visually appropriate format

Work Plan

As I have no previous experience in creating mobile applications, I will be using an Agile software development approach. This will allow me to continually adapt and improve requirements and designs based on the techniques and feedback I can acquire during the development process.

I will need to plan this project with careful consideration to the skills that I currently have. Appropriate research will be needed to be carried out before implementing each new feature, so I plan to build this project in sections, starting with the basic structure and design, and implementing the more technological features as I gain the knowledge to do so. I will start with a basic design of the system based on the requirement I will outline. This design may be adapted regularly as the project grows around it.

As the project will be conducted in sections it will be important that I set out a clear plan for each week of the projects time scale, including all tasks that will need to be completed and milestones that need to be reached. All to ensure the deliverables are completed to a high standard within the time frame. Documentation will be completed throughout the project as the appropriate sections can be completed.

Week 1 – 28th January

- Research into Android applications background, determine realistic approach to project
- Documentation – Write Project Description, Project Aims and Objectives and Work Plan for Initial Report
- Research and begin appropriate Android development courses and guides to aid in project development
- **Deliverable: Initial Report (4th February)**

Week 2 – 4th February

- Continue chosen Android development courses
- Continue background research into Android applications; research current applications and evaluate functionality and usability
- Develop personas of system; through research of common users and their objectives and tasks they expect from the system
- Begin documentation of Final Report, set out structure and begin writing of Introduction, Background and Approach
- Research and write up functional and non-functional requirements of system
- Begin research into individual functions within project; data storage techniques, location tracking, emotional analysis

Week 3 – 11th February

- Continue chosen Android development courses
- Justify and write up method chosen for location tracking to be used
- Justify and write up method chosen for data storage
- Research and begin set up of data storage method as needed

- Create preliminary designs for system; work out how system functions will work together in a design focused on the user, making it as simple and easy to use as possible, as required matching to research of methods that will be used
- [Milestone: Finish Introduction and Background write up](#)
- [Milestone: Finish requirements](#)

Week 4 – 18th February

- **Supervisor Meeting;** discussion of methods chosen, requirements and current designs
- Update and revise all sections discussed in meeting
- Develop prototype design of system; including relationships and interactions between all primary functions
- Write up of Use Cases
- [Milestone: Complete Android development courses](#)

Week 5 – 25th February

- Write up of Test Cases
- Set up and implement data storage method; develop structure and research connection to app
- [Milestone: Finish prototype](#)
- [Milestone: Complete basic structure of app; user interface, and basic diary entry functionality](#)

Week 6 – 4th March

- Implementation of basic structure of system based on prototype, design user interface based on previous research
- Create Implementation plan for project, based on previous research and developed prototype

Week 7 – 11th March

- Begin implementation of all primary features; timescale of feature implementation may vary depending on method chosen. Start with simple diary entry including photographs, event and daily reminder methods, storage of data, location tracking

Week 8 – 18th March

- Continue primary functionality implementation
- Research into secondary functionality methods; determine if implementation of secondary functionalities is possible, and to what standard
- [Milestone: System functional as a basic diary app; diary entries \(including text, emotion tag, photographs\) can be submitted on a specified date, stored in system, and retrieved as required](#)

Week 9 – 25th March

- **Supervisor Meeting;** discuss implementation of functions so far, development of system (is project on track, if not what changes need to be made), discuss possibilities of secondary functionality implementation,
- Continue primary functionality implementation; update and revise if required from meeting
- Depending on previous research and meeting discussion conclusion, begin implementation of secondary functionalities
- **Milestone: Location tracking and all related functionalities completed**

Week 10 – 1st April

- Continue all implementation; refine all primary functions to highest standard, ensure all functions integrate well together
- Continue secondary functionalities; ensure compatible and functional with current system

Week 11 – 8th April

- Ensure all functional and non-functional requirements have been met
- Complete all functionalities that are available
- **Milestone: Complete implementation of system, with all requirements fulfilled and system runs as one complete program**

Week 12-14 – 15th April – 29th April (Easter)

- Allow for final refinements and adjustments to system if required, no major implementation unless justified
- Testing of system against test cases; evaluate and write up
- Testing of system with real user testing; testers selected with personas in mind, with varying technological knowledge. Use testers to navigate system and complete a written set of tasks, evaluate and write up results of user testing
- Complete Final Report; sections including: implementation, results and evaluation, future work, conclusions, reflection
- **Milestone: Complete write up of final report; including all testing, system implementation and evaluations and conclusions**

Week 15 – 6th May

- Final check of all components and report; correct formatting and proof read
- **Deliverable: Final Report (10th May)**
- **Deliverable: Final complete system (10th May)**

Risk Plan

Risk	Impact on Project 1-Low – 5-High	Probability of Occurrence 1-Low – 5-High	Mitigation Response
Illness/Personal circumstances	2	1	Depending on severity of circumstance, impact should be manageable as can develop work plan to ensure no time is lost overall.
Data Loss	5	1	Ensure constant back-up of all documents, code, and all other programs on multiple platforms so if data is lost a suitably up to date version will be available
Insufficient time or resources to complete all requirements	4	2	Must ensure to stick to work plan, any aspect of the project that deviates from work plan, a new contingency plan will be developed to ensure the section that as much work as possible can be completed and any that cannot be completed on time does not affect the remaining system
Insufficient time or availability of testers to allow user testing	1	2	Create written test before period of testing, find and inform testers early before conducting tests
Insufficient time to complete Final Report analysis	4	1	As soon as data available to start sections of final report, start to plan and write up this section, ensure every section is completed to a sufficient standard.

References

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