AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH

SOFTWARE ENGINEERING (SPRING 2023-2024)

Group 2: Section: B

Project Proposal Title:

Tracking Mental Health Through Web and Mobile Check-Ins

Report No.: 7

Supervised by:

TONNY SHEKHA KAR

Submitted By:

Name	ID
1. Lamyea Farha Nammi	21-45410-3
2. Jinia Sultana Sama	22-46301-1
3. Safkat Khan	22-46392-1
4. Abdullah Adnan Abul Kalam	22-47846-2
5. Jannatun Fardous	21-45527-3

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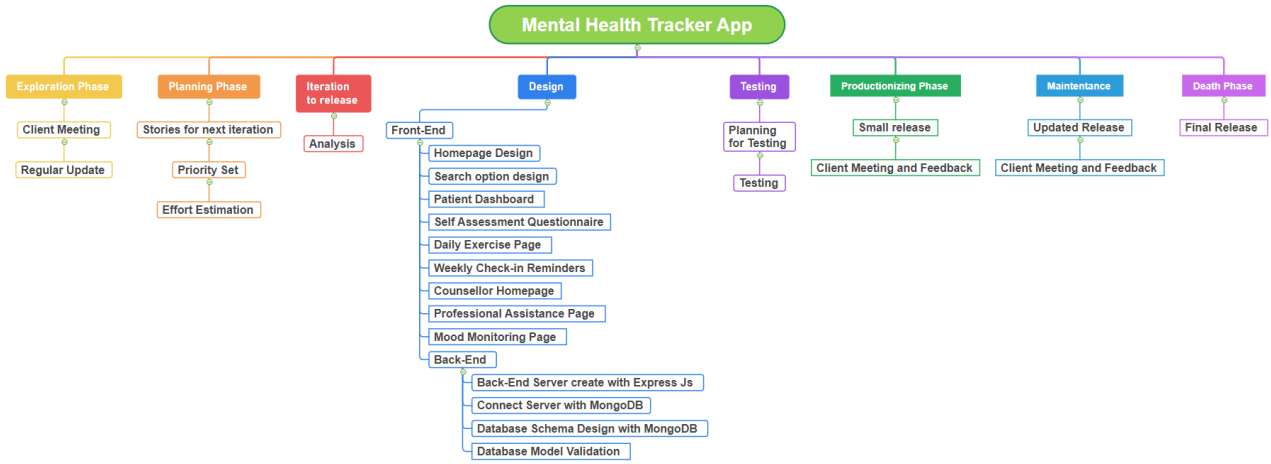
WBS AND EFFORT ESTIMATION

Work Breakdown Structure (WBS):



Project Timeline (Gantt Chart):

Serial	Task	Week 1		Week 2		Week 3		Week 4-5		Week 6	
		Feb 17	Feb 23	Feb 24	Mar-1	Mar-3	Mar-8	Mar- 9	May 22	May 22	May 31
1	Client meeting										
2	Regular Update										
3	Stories for Next iteration										
4	Effort estimation										
5	Analysis										
6	Front-End design										
7	Back-End Design										
8	Planning for testing										
9	Testing										
10	Small release										
11	Meeting & Feedback after 1st release										
12	Updated Release										
13	Meeting & feedback after 2nd release										
14	Final Release										

Effort Estimation

We are using COCOMO which is the only type of static model that can quickly and roughly estimate software development effort. It primarily deals with the number of lines of code, and the level of estimation accuracy is low because we do not consider all project parameters. The relation: gives the estimated effort and scheduled time for the project:

- **Effort = PM = $\text{Coefficient}_{\text{<Effort factor>}}$*(SLOC/1000) ^P**

[100,000 SLOC/1000 = 100k SLOC]

- **Development time = DM = 2.50*(PM)^T**
- **Required number of people = ST = PM/DM**

PM : person-months needed for project (labor working hours)

SLOC : source lines of code

P : project complexity (1.04-1.24)

DM : duration time in months for project (weekdays)

T : SLOC-dependent coefficient (0.32-0.38)

ST : average staffing necessary

Software Project Type	Coefficient <Effort Factor>	P	T
Organic	2.4	1.05	0.38
Semi-detached	3.0	1.12	0.35
Embedded	3.6	1.20	0.32

Semidetached Project:

It is an intermediate (in terms of size and complexity) project, where the team having mixed experience

(both experience & inexperience resources) to deals with rigid/non-rigid requirements.

If we take 600KLOC for our “Mental Health Tracker App” Project, where,

Coefficient = 3.0 [Semi Detached]

Project Complexity [P] = 1.12

SLOC-dependent coefficient [T] = 0.35

Now calculation,

Effort = 3.0 * (600K / 1000) ^ 1.12 = 3684.90 MM

Development Time = 2.50 * (3684.90 ^ 0.35 = 44.28 Months(M)