Smart Health Prediction System

Lab 3 Report
Software Project Management

Ammar Salmawy - 100756573
Jachimike Ezenwamadu - 100783161
Abdul Moiz Mateen - 100746961
Fayomi Toyin - 100765921

CRN: 74669

Group 10
TA: Ammar Elmoghazy
Tuesday, Feb 28, 2023

Project Estimation

COCOMO: Comparing to projects we have done in the past the estimation KLOC for the new project is 7 KLOC broken down as follows:

- Database system: 1500 LOC

- Auction website with similar attributes: 2500 LOC

- Search algorithms: 1000 LOC

- Communication infrastructure: 1000 LOC

- Cloud computing configuration: 1000 LOC

While this breakdown provides a rough estimate of the total LOC for the new project, it is important to note that the actual LOC may differ based on a variety of factors and unforeseen technical challenges.

now we can compute the estimate using COCOMO model

it is an Organic project, according to the COCOMO constant values table a: 2.4, b:1.05, c:2.5, and d:0.38.
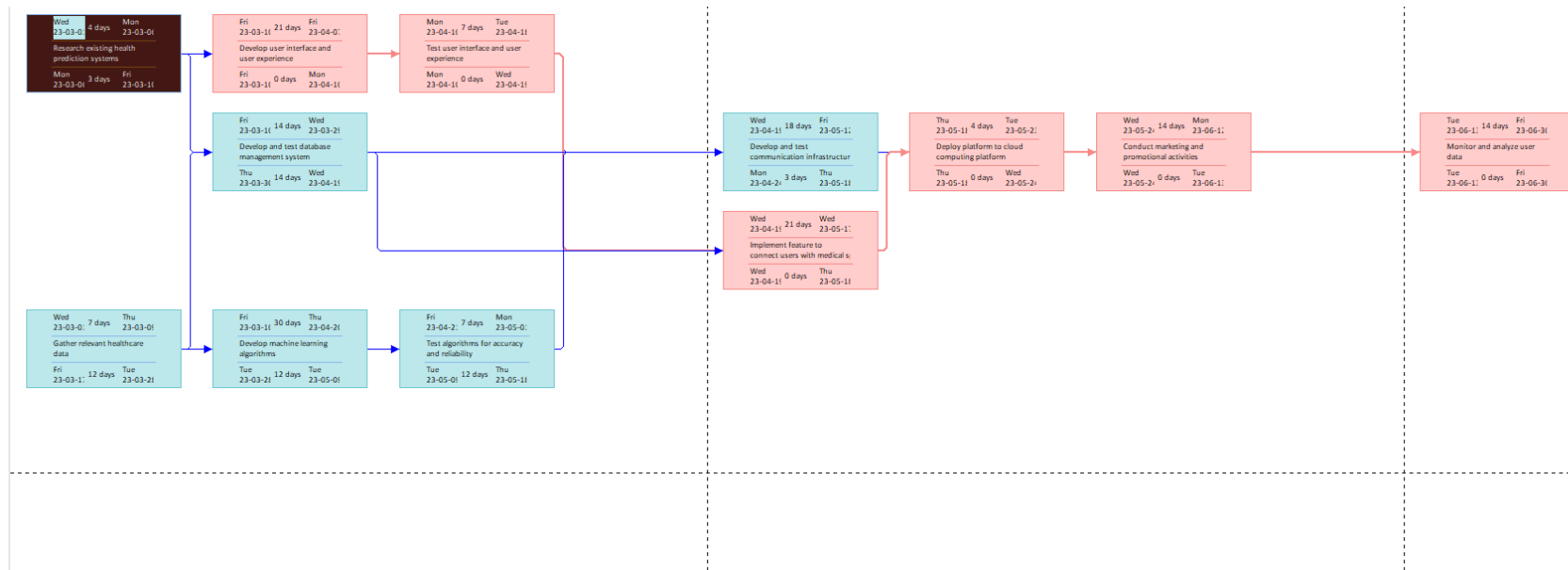
Applying the effort estimation formal we get:

$E_i = 2.4 * (7)^{1.05} = 18$ person-months

$t = 2.5 *(18)^{0.38} = 7$ months

staff $= 18 /7 = 2$ persons

Activity Planning

Wed 23-03-0:	4 days	Mon 23-03-0(
Research existing health prediction systems		
Mon 23-03-0(	3 days	Fri 23-03-1(

Fri 23-03-1(	21 days	Fri 23-04-0:
Develop user interface and user experience		
Fri 23-03-1(	0 days	Mon 23-04-1(

Mon 23-04-1(	7 days	Tue 23-04-1!
Test user interface and user experience		
Mon 23-04-1(	0 days	Wed 23-04-1!

Fri 23-03-1(	14 days	Wed 23-03-2!
Develop and test database management system		
Thu 23-03-3(	14 days	Wed 23-04-1!

Wed 23-04-1!	18 days	Fri 23-05-1:
Develop and test communication infrastructur		
Mon 23-04-2-	3 days	Thu 23-05-1!

Thu 23-05-1!	4 days	Tue 23-05-2:
Deploy platform to cloud computing platform		
Thu 23-05-1!	0 days	Wed 23-05-2-

Wed 23-05-2-	14 days	Mon 23-06-1:
Conduct marketing and promotional activities		
Wed 23-05-2-	0 days	Tue 23-06-1:

Tue 23-06-1:	14 days	Fri 23-06-3(
Monitor and analyze user data		
Tue 23-06-1:	0 days	Fri 23-06-3(

Wed 23-04-1!	21 days	Wed 23-05-1:
Implement feature to connect users with medical s:		
Wed 23-04-1!	0 days	Thu 23-05-1!

Wed 23-03-0:	7 days	Thu 23-03-0!
Gather relevant healthcare data		
Fri 23-03-1:	12 days	Tue 23-03-2!

Fri 23-03-1(	30 days	Thu 23-04-2(
Develop machine learning algorithms		
Tue 23-03-2!	12 days	Tue 23-05-0!

Fri 23-04-2:	7 days	Mon 23-05-0:
Test algorithms for accuracy and reliability		
Tue 23-05-0!	12 days	Thu 23-05-1!

Accordioning to activity network we can increase the team to 3 members since we have three independent tasks to decrease the time of the critical path.

Risk Management

1. Technical Risks: Concerns about data security and privacy, system failures, or infrastructure problems could arise during the platform's development and maintenance. The project team should think about utilizing safe and dependable technologies, as well as carrying out extensive testing and quality assurance to guarantee the platform's stability, to manage these risks.

    Risk Management Strategies

    - Conduct thorough testing of the application to identify and fix technical issues.
    - Use reliable and trusted third-party libraries and frameworks.
    - Keep up to date with the latest technologies and best practices to avoid outdated technologies and methods.

2. User Adoption Risks: One of the main objectives of the platform is to draw users to adopt and use it for disease diagnosis. The success of the project can be seriously jeopardized by a lack of user adoption. The project team should conduct user research to determine the needs and preferences of potential users and take their input into account when designing the platform in order to manage this risk.

    Risk Management Strategies

    - Conduct user research to understand user needs and preferences.
    - Create a user-friendly and intuitive interface to make the application easy to use.
    - Provide clear and concise instructions and tutorials to help users understand how to use the application.

3. Legal Risks: Creating a health prediction system can result in legal and regulatory issues, such as ensuring that privacy and data protection laws are followed. To reduce this risk, the project team should make sure the platform complies with all applicable laws and rules, including data protection laws like GDPR, HIPAA, or other local laws and rules.

    Risk Management Strategies

- Ensure compliance with all relevant laws and regulations.
- Consult with legal experts to identify and mitigate potential legal risks.
- Obtain necessary licenses and permits before launching the application.

4. Financial Risks: The platform's development and upkeep can be expensive, and there might be budgetary limitations that prevent the project from succeeding. The project team should carefully plan and budget for the project, taking into account all of the associated costs and seeking funding sources as necessary, in order to manage this risk.
   Risk Management Strategies
   - Create a detailed budget plan for the project and constantly monitor expenses.
   - Obtain sufficient funding or resources to cover unexpected costs.

5. Data risks: Gathering and analyzing large amounts of data is necessary for creating a health prediction system, and these data can contain errors, inconsistencies, and biases. The project team should use the appropriate data cleaning and validation techniques and ensure that the data is accurate, pertinent, and representative of the population in order to manage this risk.
   Risk Management Strategies
   - Implement data security measures, such as encryption and access controls, to protect user data.
   - Regularly back up data to prevent data loss in case of system failures or other disasters.
   - Comply with data protection laws and regulations to avoid legal and reputational risks.