PROJECT PROPOSAL FORM

PROJECT NUMBER: 2

PROJECT NAME: EMU Students Kit

The from is adapted from TÜBİTAK* – The scientific and technological Research Council of TURKEY, https://www.tubitak.gov.tr/en

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TÜBİTAK is responsible for promoting, developing, organizing, conducting and coordinating research and development in line with national targets and priorities.

A.1. Preliminary Project Information

A.1.1

Project No	2
Project Name	EMU Students Kit
Start Date	15-Feb-2017
End Date	12-Jun-2017
Time	

A.1.2

Project Manager/System Architect/Programmer			
Name Surname	Talal Mahdy	**ID No**	147139
Address	Famagusta, North Cyprus		
Phone	+90 533 8885729	**Fax**	
Email	talal.mahdy96@gmail.com		

A.1.3

Lead Programmer/Database Developer/Administrator			
Name Surname	Mohamed M. M. Balto	**ID No**	147697
Address	Famagusta, North Cyprus		
Phone	+90 533 8397554	**Fax**	
Email	Baltu.libya@gmail.com		

A.1.4

Software Tester/Documenter/Designer			
Name Surname	Abdoulgwad Hussien Elsheredi	**ID No**	147597
Address	Famagusta, North Cyprus		
Phone	+90 533 8528065	**Fax**	
Email	abdoulgwad.elsheredi@yahoo.it		

A.1.5

Requirements Engineer/User Interface Designer			
Name Surname	Adham Moshasha	**ID No**	148387
Address	Famagusta, North Cyprus		
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Email	adhamoshasha@gmail.com		

B.1 Introduction to Project

B.1.1

Summary of Project
The EMU Student Kit is a complex multi-functional Android Mobile Application for designed for EMU with a variety of different functions and features that are beneficiary for students. This application can also be used by any other student and not only EMU students.

B.1.2

Key Words
EMU Student Kit, lectures schedule, time table, interactive map, classroom locations, points of interest, encryption, backup, GPA&CGPA calculator, lecture recorder, note taking, Help.

B.1.3

Reason of Starting Project and Aim of Project
This project was started due to shortage of productivity and organizational applications that are specifically designed for students. Since there are over 20,000 students in EMU, this project aims to improve the performance and time management of students, give them useful information about the university, assist them during lectures, and provide many other beneficiary features for students.

B.1.4

Innovative Aspects of Project
This project is innovative in the sense that there are a very few applications on Google's Play Store which offer a vast set of features for assisting students. This project will be among the first educational applications to be specifically developed for a University's Students. Due to this, the performance, time management and productivity of EMU students may be improved. The application is also going to have a user friendly design and is going to be extremely easy to use with a good source of documentation which will please its users.

B.1.5

Methods to be Applied
This project will be designed using many tools such as Visual Paradigm, Gliffy, GenMyModel, draw.io, and Microsoft Visio. This design will be implemented using the Java Programming language using the Android Studio Integrated Development Environment. The Project will be scheduled and managed using Microsoft Project Tool.

B.1.6

Economic and National Outcomes
This is a not-for-profit and an open source project which has a good probability of increasing the performance of EMU Students by assisting them in various fields such as time management, organization and productivity.

B.2 Reason of Starting the Project, Methods and R&D Stages

B.2.1

1- Explain the reason of starting this project. (Max 500 characters)
These days, people are becoming more and more dependent on devices such as smartphones to organize their lives. There are around 1.2 Billion smartphones around the world. In the US for example, 25% of the population access the internet primarily from their smartphones. These are big figures so our team decided to start a mobile application development strategy to maintain a competitive edge over other educational applications and organizations. It is very important for business organizations to have a responsive website and a mobile application but many businesses have not yet implemented this strategy. For example, in 2014, 45% of all US business organizations did not have a responsive website or a mobile application. We also started this project because students would always want to find what they need quickly. Also, students would always want to stay up to date with all the news that are important to them and get notified immediately. Furthermore, students and other customers almost spend more time using an easy to access app other than a website or a desktop application. Looking at Google's Play Store, there are not many educational applications like EMU Student Kit and it is feasible and makes sense to develop a project like this.

2- Explain the purpose of this project.
The EMU Student Kit is a complex project and it can have a lot of useful features for students. Some proposed functionalities of the application are as follows: **1. Lectures Schedule and time-table:** - Input Utility. - Auto-extraction of data such as the courses, exams, instructors time tables from the portal xml page. - University Calendar events ('exams – Holidays – Other Activities'). - Notifications and Reminders for upcoming lectures, events, exams, etc. **2. Map:** - Campus interactive map. - Includes campus facilities ('Departments – Stadiums – Activity Centers'). - Shows the classrooms and other areas of interest on the map. - Classrooms search on the map. - Up to date Bus Schedules. **3. Security, Reliability and other features:** - Encrypted app with PIN/Password based system. - May include cloud backup using existing services ex. ('Google Drive- Drive One'). - GPA & CGPA Calculator - News of university/department with notificaions. - Recording, photo and note taking during a lecture. **4. Help Functionality (Documentation).**

3- Explain

- **output of project**
- **national / international standards if exist**
- **the specific objectives of the project**
- **success criteria**

The expected output of the project is a well-designed and mobile application product known as EMU Student Kit. The specific outputs of this mobile app are as described in section B.2.1. of this proposal. Also, documentations in the form of a Software Requirements Document (SRS) and a Software Design Description (SDD), and a final report are expected outputs of this project. The specific objectives of this project are to assist students and improve their performance in many areas such as productivity and organization and to provide them with many useful functionalities that are beneficiary for students. Some standards that are followed in this project are TUBITAK organization for the project proposal form, IEEE 1016-1998 and 830-1998 standards for the Software Design Descriptions document and the Software Requirements Specifications document. Also, we will implement Google's Java coding style to develop our application. The ISO 9126-4 standard shall ensure that the user is satisfied with the product.

Success Criteria are metrics to determine if the project is successful. Some of them are:

a. Total Downloads: It is expected that at least 80% of EMU students will download the app. But this app can also be used by other students.
b. Monthly Average Users (MAU: The application should have a high number of Average users among those who downloaded the application. If it appears that the MAU is growing, then the project is growing in the right path.
c. Engagement: Also, those users should have a high engagement ratio, i.e., users visit it frequently and use it for a considerable amount of time. Engagement can be measured by metrics such as session length (time period between app open and close), session interval (time between the user's first session and their next one) and retention rate (users who return to your app based on the date of their first visit).
d. Documentation: The number of users submitting questions or help requests should be less due to well documentation and user guide.

4- Explain

- **the methods to be applied during R&D activities**
- **applications**
- **technics and tools to be used**
- **standards to be followed under the workflow**

In this project, we will be applying an evolutionary development approach. An evolutionary development is based on the idea of developing an initial implementation, exposing it to the customer's comments, refining it through many versions until an adequate system has been developed. This development method is going to be more effective in this project since it is a small-medium sized system. The requirements for this system are not well defined from the beginning and we have to work with the customer and produce prototypes while obtaining feedbacks from the customer. To do this, we are going to have to conduct a number of interviews with the customer and clearly understand the requirements. The waterfall development approach cannot be used in this case since the requirements are not well defined. During the design and UI Design stage of development, we are going to use various CASE Tools such as IBM Rational tools to aid us in developing a clearer picture of how our application is going to look like. Then, we are going to start the development of the application using Google's Android Studio Integrated Development Environment (IDE) and by using Java as the main programming language.

5- Explain

- **the contribution of national/international technological development if exist**
- **starting a new research and development projects within or outside the team**
- **launch new applications or research studies in different technology areas**

With whom we can cooperate?
Expectations:
Published work:
Can your output be an input for other similar national/international projects?

The EMU Student Kit is an open source non-profit project. There it can be of a great contribution to other national or international projects. Developers around the world can simply view and study and the design and the code of the program. Since it is also a complex system, it can also be used as a case study for students in many different areas of Software Engineering. This project can also be used as an input for other similarly designed projects since other Software Engineers can use this project as a reference or as a sample when creating other educational applications for students or for specific organizations. The expected publications of this project are the Android EMU Student Kit Application along with its different documentations such as a Requirements Document, a Design Document, and a User Guide.

B.3 Innovative and Unique Aspects

B.3.1

1- Describe ○ **differences** ○ **advantages** ○ **superiority** **compared to other similar projects.**
EMU Student Kit is a complex application and it contains many different functions and features. In many different educational applications on the Play Store, the application will usually have just a single function or a few functions. To design our application, we will take some ideas from some of those other applications. Some examples are the applications known as “My Study Life”, “Schoolhub Students”, “School Assistant”, etc. The common features between these applications are the time table, tasks, exams, assignments, features. Since the EMU Student Kit is designed primarily for EMU students, it will expand on some of those functionalities and include features such as an interactive map for EMU students (includes classrooms, departments, other areas of interest, etc.), up to date bus schedules, automatic extraction of student’s time tables and exam schedules, notifications and reminders for upcoming lectures, events, exams, etc., GPA and CGPA calculator, recording, photo and note taking during a lecture, password encryption security feature, a cloud backup service, and a proper user guide.

B.4.1

2- What will be roles/responsibilities for each team member?
Project Manager/System Architect/Programmer - Talal Mahdy **Lead Programmer/Database Developer/Administrator** - Mohamed M. M. Balto **Software Tester/Documenter/Designer** - Abdoulgwad Hussien Elsheredi **Requirements Engineer/User Interface Designer** - Adham Moshasha

C.1 Gantt Chart and Work Packages

C.1.1 Gantt Chart (attached at the end of this document)

C.1.2 List of Work Packages

Work Package No	1
Work Package Name	**Feasibility and Pre-Research (SRS stage)**
Start-End Date and Time	Start: 20-02-17 Finish: 09/03/17
Related Organizations	

1- List the activities of work packages.
1. Scope. **2. Analysis/Software Requirements.**
2- Describe the methods and parameters that will be used for work package.
None.
3- List the experiments, tests and analysis in the work package.
1. Scope: 1.1. Determine project scope 1.2. Secure project approval 1.3. Define preliminary resources 1.4. Secure core resources 1.5. Scope complete **2. Analysis/Software Requirements:** 2.1. Conduct needs analysis 2.2. Draft preliminary software specifications 2.3. Develop preliminary budget 2.4. Review software specifications/budget with team 2.5. Incorporate feedback on software specifications 2.6. Develop delivery timeline 2.7. Obtain approvals to proceed (concept, timeline, budget) 2.8. Secure required resources 2.9. Analysis complete
4- List the output of work package and its success criteria.
Outputs: Initial Requirements Specification Document (SRS), feasibility analysis, secured resources. **Success Criteria:** Project approved, project is feasible to implement, initial requirements are well documented, resources and team members are secured.
5- Explain the relation of output with other work packages
This is the initial phase of development and is the basic input for all other work packages. It defines the following: What is the project? Who are the stakeholders? Who will use the system? How should it be developed? Who are the team members? What are the basic requirements? How should it be developed? How should it be delivered?...

Work Package No	2
Work Package Name	**System Design (SDS Stage)**
Start-End Date and Time	Start: 09-03-17 Finish: 31/03/17
Related Organizations	

1- List the activities of work packages.

1. **EMU Student Kit Software Design**
2. **Development of first prototype**
3. **Improve SRS Document**

2- Describe the methods and parameters that will be used for work package.

Unknown at this point.

3- List the experiments, tests and analysis in the work package.

Review preliminary software specifications
Develop functional specifications
Design of System
Develop prototype based on functional specifications
Review functional specifications and Design
Incorporate feedback into functional specifications
Obtain approval to proceed
Design complete

4- List the output of work package and its success criteria.

Outputs: A Software Design Specification (SDS) Document, First Prototype of Software.
Success Criteria: An improvement of the SRS Document as a result of better understanding of requirements from first prototype, completion of system design.

5- Explain the relation of output with other work packages

The design stage is the next stage in the software development life cycle. Without designing the software and knowing what has to be done, it will be very difficult for the programmer to develop the software and many mistakes will be done. So this work package is a very important prerequisite to the next stage which is the development stage.

Work Package No	3
Work Package Name	**Software Development Stage**
Start-End Date and Time	Start: 01-04-17 Finish: 23/04/17
Related Organizations	

1- List the activities of work packages.
The main coding, primary debugging of the program and development of the database.
2- Describe the methods and parameters that will be used for work package.
Unknown at this point.
3- List the experiments, tests and analysis in the work package.
Review functional specifications Identify modular/tiered design parameters Assign development staff Develop Code and Database Developer testing (primary debugging) Development complete
4- List the output of work package and its success criteria.
Outputs: EMU Student Kit Android Application Package (APK) **Success Criteria:** A successful working APK file of our project.
5- Explain the relation of output with other work packages
During the development of our application, the coders will obviously find some bugs and attempt to fix them. However, there might be some logical or other types of errors that a developer might not notice. Therefore, it is important for the application to be tested by a separate dedicated tester. Testing of the application can begin shortly after the development of the first unit of the application.

Work Package No	4
Work Package Name	**Software Testing Stage**
Start-End Date and Time	Start: 15-04-17 Finish: 23/05/17
Related Organizations	

1- List the activities of work packages.

1. **Unit and Integration Test Plans.**
2. **Unit Testing.**
3. **Integration Testing.**

2- Describe the methods and parameters that will be used for work package.

Unknown at this point.

3- List the experiments, tests and analysis in the work package.

1. Unit and Integration Test Plans:

1.1. Develop unit test plans using product specifications
1.2. Develop integration test plans using product specifications

2. Unit Testing:

2.1. Review modular code
2.2. Test component modules to product specifications
2.3. Identify anomalies to product specifications
2.4. Modify code
2.5. Re-test modified code
2.6. Unit testing complete

3. Integration Testing:

3.1. Test module integration
3.2. Identify anomalies to specifications
3.3. Modify code
3.4. Re-test modified code
3.5. Integration testing complete

4- List the output of work package and its success criteria.

Outputs: Test data, verification results
Success Criteria: Testing successfully completed with all the errors and bugs successfully fixed.

5- Explain the relation of output with other work packages

After successfully testing the system, next stages in the software life cycle are the delivery and maintenance stages. The software should be delivered and installed as per the request of the customer. Also, the maintenance stage is very important as a software may serve for many years to come and it will obviously need to be updated. Therefore, a good maintenance team along with good documentation are very important for the product to be successful.

Work Package No	5
Work Package Name	**Documentation and Delivery**
Start-End Date and Time	Start: 09-03-17 Finish: 03/06/17
Related Organizations	

1- List the activities of work packages.

1. **Documentation**
2. **Pilot**
3. **Deployment**
4. **Post Implementation Review**

2- Describe the methods and parameters that will be used for work package.

None.

3- List the experiments, tests and analysis in the work package.

1. **Documentation**
   - 1.1. Develop Help specification
   - 1.2. Develop SRS Document
   - 1.3. Develop SDS Document
   - 1.4. Develop Help system
   - 1.5. Review Help documentation
   - 1.6. Incorporate Help documentation feedback
   - 1.7. Develop user manuals specifications
   - 1.8. Develop user manuals
   - 1.9. Review all user documentation
   - 1.10. Incorporate user documentation feedback
   - 1.11. Documentation complete
2. **Pilot**
   - 2.1. Identify test group
   - 2.2. Develop software delivery mechanism
   - 2.3. Install/deploy software to Google's Play Store
   - 2.4. Obtain user feedback
   - 2.5. Evaluate testing information
   - 2.6. Pilot complete
3. **Deployment**
   - 3.1. Determine final deployment strategy
   - 3.2. Develop deployment methodology
   - 3.3. Secure deployment resources
   - 3.4. Train support staff
   - 3.5. Deploy software
   - 3.6. Deployment complete
4. **Post Implementation Review**
   - 4.1. Document lessons learned
   - 4.2. Distribute to team members
   - 4.3. Create software maintenance team
   - **4.4.** Post implementation review complete

4- List the output of work package and its success criteria.
Outputs: Successful delivery of project, uploading to Play Store, completed documentation **Success Criteria:** A completed well documented, well perceived software application.
5- Explain the relation of output with other work packages
As can be noticed, the documentation stage started at an early time in the software process, sometime after the design stage started. It is important to document all requirements and design aspects of the project along with a proper user guide before delivering the application.

C.1.3 List of Milestones

	Description of Output	Expected Time Interval	
1	Scope determination and approval	**20-02-17**	**23-02-17**
2	Analysis/Software Requirements	**23-02-17**	**09-03-17**
3	System Design (SDS Stage)	**09-03-17**	**31-03-17**
4	Software Development Stage	**01-04-17**	**23-04-17**
5	Unit Testing	**19-04-17**	**08-05-17**
6	Integration Testing	**08-05-17**	**20-05-17**
7	Documentation	**17-03-17**	**03-05-17**
8	Pilot	**09-03-17**	**26-05-17**
9	Deployment	**27-05-17**	**31-05-17**
10	Post Implementation Review	**01-06-17**	**03-06-17**

C.1.4 List of Risks

Risk	Probability	Effects	Your Strategy
The time required to develop the software is underestimated.	High	Serious	The most important requirements of the project should always be implemented first. We will have more time later on to implement the non-important requirements.
Software tools cannot work together in an integrated way.	High	Tolerable	Always minimize the number of design tools used and make sure that the outputs of these tools are compatible with each other.
Customers fail to understand the impact of requirements changes.	Moderate	Tolerable	Conduct frequent meetings with the stakeholders and keep being updated on latest requirement changes.
The rate of defect repair is underestimated.	Moderate	Tolerable	Replace potentially defective components with more reliable bought-in components.
The size of the software is underestimated.	Moderate	Insignificant	Investigate buying software components; Investigate use of a program generator.

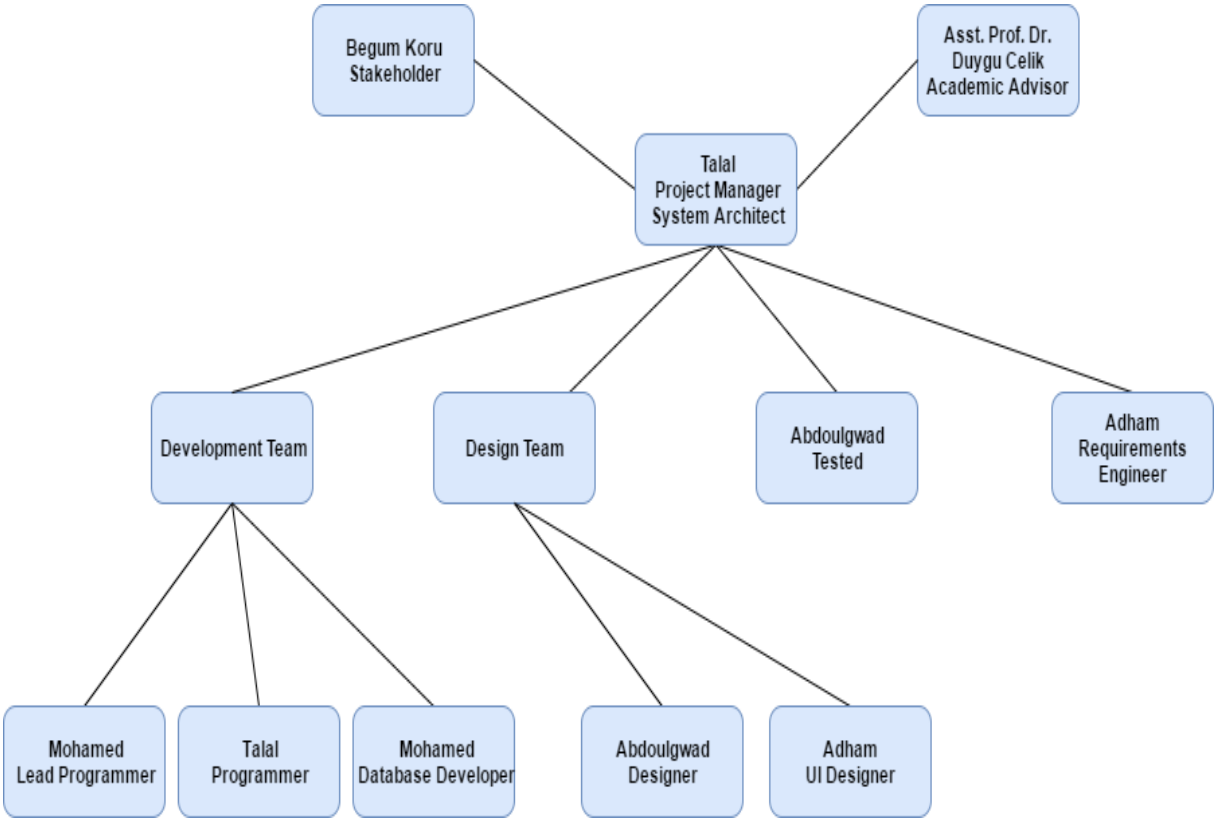
Code generated by code generation tools is inefficient.	Moderate	Insignificant	This risk is always expected since code generation tools often do not produce reliable code and this code always needs editing by the software developers.
Key staffs are ill at critical times in the project.	Moderate	Serious	Reorganize team so that there is more overlap of work and people therefore understand each other's jobs.
The database used in the system cannot process as many transactions per second as expected.	Low	Serious	Investigate the possibility of buying a higher-performance database.
The profit obtained from completing this project is far less than expected.	Low	Tolerable	Conduct a thorough financial study before starting project and do not buy any unnecessary components or tools.

C.2 Project Management and Organization

C.2.1 Project Team

Personnel Name	Title	ID	Education Status	Graduation Date	Date of Starting Work	Idea Owner
Talal	Project Manager	147139	Undergraduate	June 2018	February 2017	Yes
Talal	Programmer	147139	Undergraduate	June 2018	February 2017	Yes
Abdoulgwad	Designer	147597	Undergraduate	June 2018	February 2017	Yes
Abdoulgwad	Tester	147597	Undergraduate	June 2018	February 2017	Yes
Adham	UI Designer	148387	Undergraduate	June 2018	February 2017	Yes
Adham	Requirements Engineer	148387	Undergraduate	June 2018	February 2017	Yes
Mohamed	Lead Programmer	147697	Undergraduate	June 2018	February 2017	Yes
Mohamed	Database Developer	147697	Undergraduate	June 2018	February 2017	Yes

C.2.2 Organization Scheme



D.1 Economic Forecasts

1- Evaluate the commercialization potential of project outcomes. List possible risks here?
Commercialization of our product can start as soon as the development and testing of the most important modules is done. However, to further guarantee that everything is working as planned and to have an advantage over other applications, we are going to wait until most of the features of the application are done. After that, the commercialization process starts when the application is uploaded to Google's Play Store. Then, many user feedbacks will be gained and improvements with new features and bug fixes will be implemented. In addition, during this time, an advertisement campaign will be made to promote our product and increase the user base. So the aim is to allow most of EMU Students to use this application.

2- List your expectations to your team which are come by your project	
Time-to-market (month):	4
The expected increase in sales revenue (%):	25%
The expected increase in market share (%):	5%
Time to start to gain:	June 2017

D.2 National Outcomes

1- Specify the output that may be subject to patent, utility model and industrial design registration in the project.
The application will not implement major new inventions in mobile application design. Therefore, patent, utility model and industrial design registration will not apply to our product and we are not planning to apply for any of these in the future.
2- Explain the potential of project and its outputs that may have an effect on social life, education, health and etc.
The application will have a positive effect in the education and organizational aspect of a student's life. Its many features will save a lot of a student's time, will manage a student's timetable and schedule, will increase a student's productivity and awareness.
3- Explain the positive and negative effects of project outputs for environment and human being.
A student may rely on this application on all study related activities, which can sometimes be wrong. There may be a bug or some wrong information that is presented in the application and the student may obtain that wrong information.

(M013) Instrument / Equipment / Software / RELEASE PURCHASES

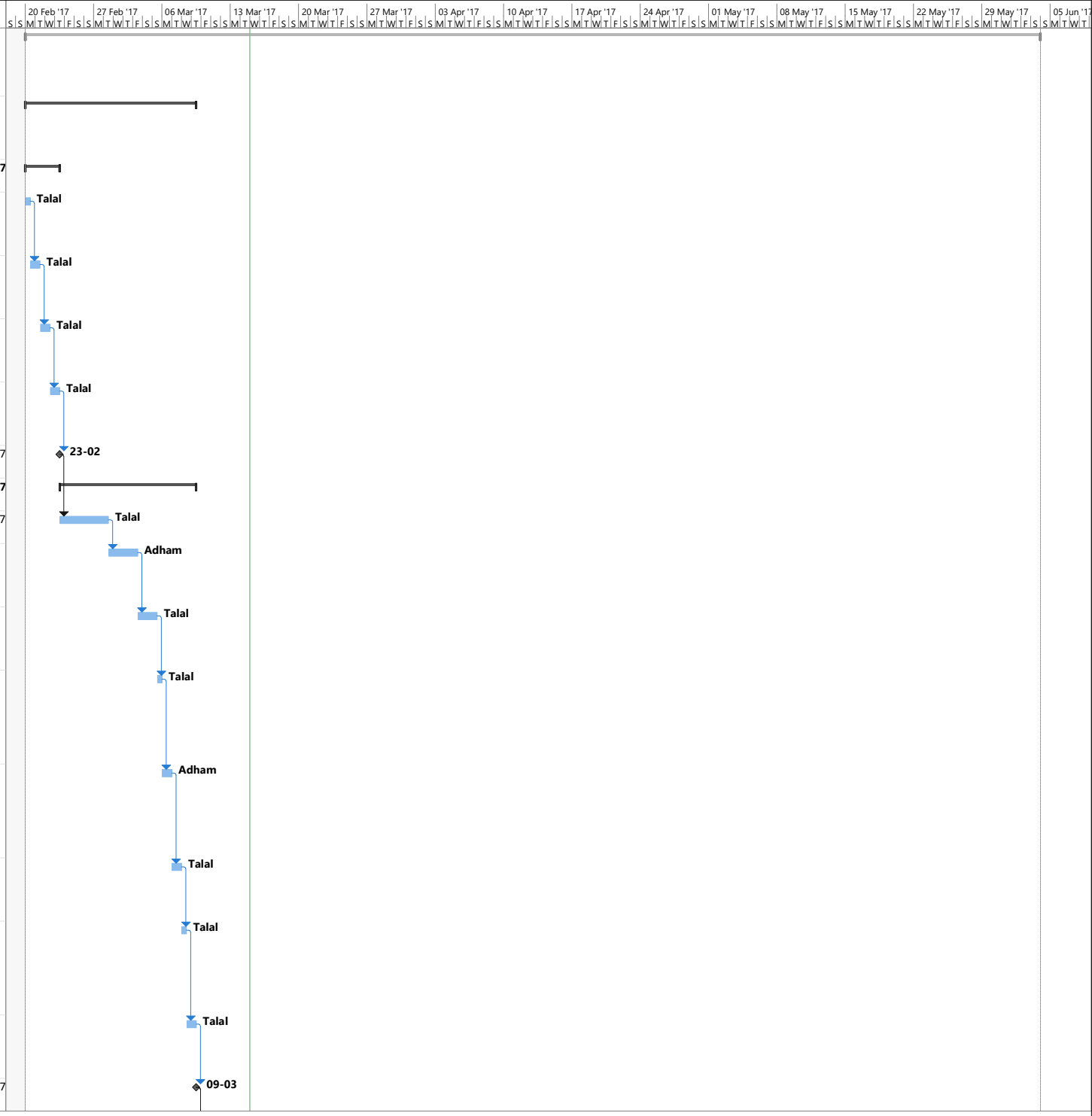
Project Name	EMU Student Kit									
Line no	Instrument / Equipment / Software / Publication Name	No. of Item	Capacity	Technical specification	Purpose of Project Activities	Post-Project Place of Use / Purpose		Unit Price (USD)	Unit Price (TL)	Total Amount (TL)
						R & D	Production			
1	Android Studio	1		Android Integrated Development Environment (IDE)	Main IDE used for development of our project		Yes	-	-	-
2	Microsoft Project	1		Project Management Software	We will use this application to plan and schedule our project		Yes	589.99	2085.36	
3	Microsoft Office	1		An office suite of applications, servers, and services	Used in many areas of the project such as documentation		Yes	399.99	1413.80	
4	Microsoft Visio	1		Software Design Tool	Used to draw software design diagrams		Yes	299.99	1060.35	

5	**Visual Paradigm**	**1**		**Software Design Tool and Code generator**	**Used to draw software design diagrams and generate code required for the application based on those diagrams**		**Yes**	**349**	**1233.54**	
6	**Mockflow Wireframe**	**1**		**User Interface Design Tool**	**Used to draw a User Interface for our system**		**Yes**	**208**	**735.38**	
7	**Gliffy**	**1**		**Software Design Tool**	**Used to draw software design diagrams**		**Yes**	**20**	**70.71**	
8	**GenMyModel**	**1**		**Software Design Tool**	**Used to draw software design diagrams**		**Yes**	**120**	**424.26**	
									TOTAL	**7023.4 TL**

(M030) Quarterly Estimated Cost Form (TL)

Project Name :				
Cost Item	2017		TOTAL (TL)	TOTAL COST RATE OF CONTENTS (%)
	I	II		
Personnel	20000	20000	40000	49.37
Travel	1000	1000	2000	2.47
Instrument / Equipment / Software / Publications	7023.4		7023.4	8.67
Domestic Works Made By R & D and Testing Institutions	1500	1500	3000	3.70
International Works Made By R & D and Testing Institutions	1600	1600	3200	3.95
Domestic Services Procurement	1800	1800	3600	4.44
Overseas Service Procurement	2000	2000	4000	4.94
Material	2100	2100	4200	5.18
TOTAL COST	37023.4	37000	81023.4	100
CUMULATIVE COST				100
IN THE PROJECT TOTAL MAN-MONTH			720 hours	

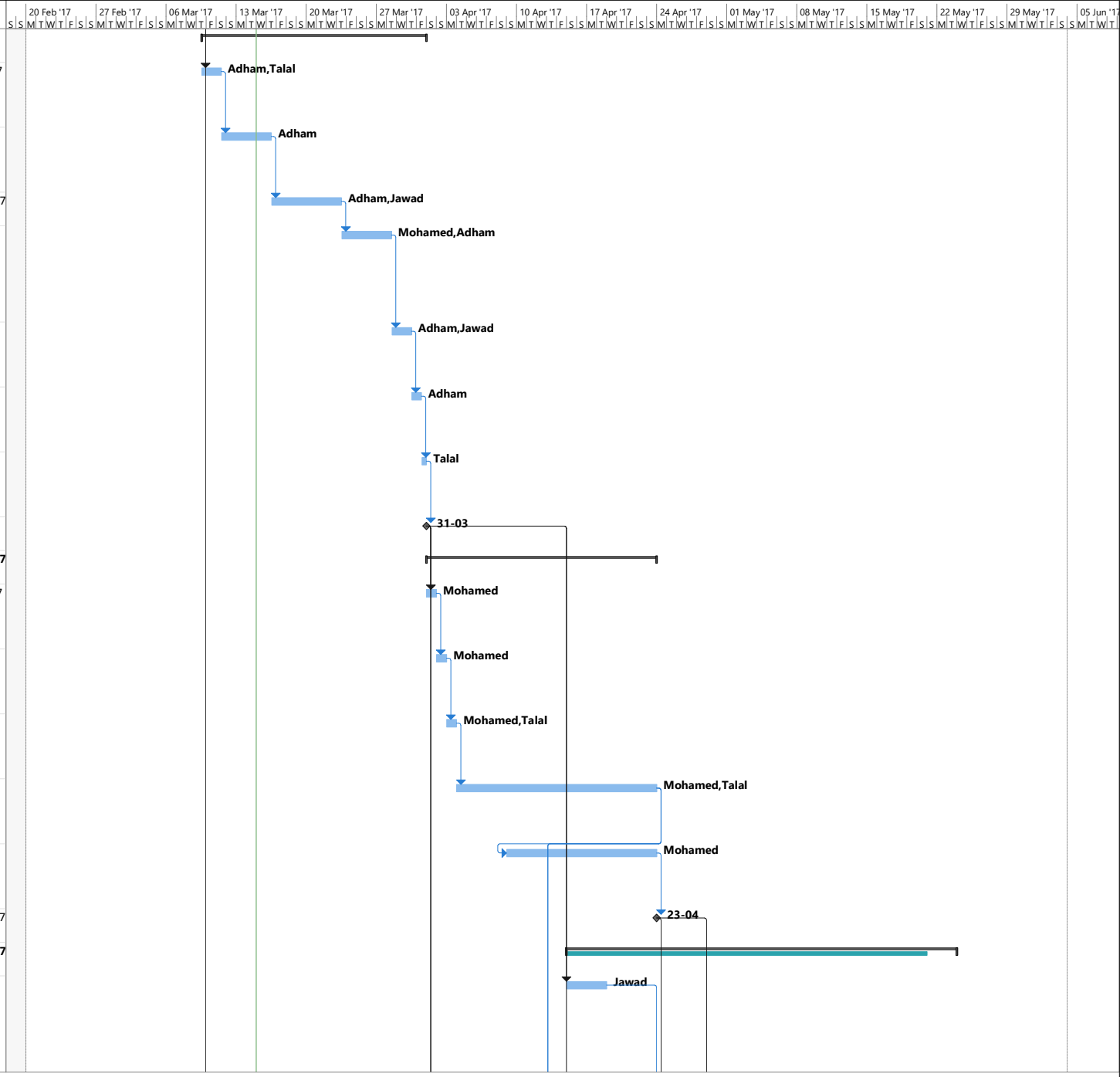
ID	Task Mode	Task Name	Duration	Start	Finish
0		**Software Development**	**104 days**	**Mon 20-02-17**	**Sat 03-06-17**
1		**Feasibility and Pre-Research (SRS Stage)**	**17.5 days**	**Mon 20-02-17**	**Thu 09-03-17**
2		**Scope**	**3.5 days**	**Mon 20-02-17**	**Thu 23-02-17**
3		Determine project scope	4 hrs	Mon 20-02-17	Mon 20-02-17
4		Secure project approval	1 day	Mon 20-02-17	Tue 21-02-17
5		Define preliminary resources	1 day	Tue 21-02-17	Wed 22-02-17
6		Secure core resources	1 day	Wed 22-02-17	Thu 23-02-17
7		Scope complete	0 days	Thu 23-02-17	Thu 23-02-17
8		**Analysis/Software Requiremer**	**14 days**	**Thu 23-02-17**	**Thu 09-03-17**
9		Conduct needs analysis	5 days	Thu 23-02-17	Tue 28-02-17
10		Draft preliminary software specifications	3 days	Tue 28-02-17	Fri 03-03-17
11		Develop preliminary budget	2 days	Fri 03-03-17	Sun 05-03-17
12		Review software specifications/budget with team	4 hrs	Sun 05-03-17	Sun 05-03-17
13		Incorporate feedback on software specifications	1 day	Mon 06-03-17	Mon 06-03-17
14		Develop delivery timeline	1 day	Tue 07-03-17	Tue 07-03-17
15		Obtain approvals to proceed (concept, timeline, budget)	4 hrs	Wed 08-03-17	Wed 08-03-17
16		Secure required resources	1 day	Wed 08-03-17	Thu 09-03-17
17		Analysis complete	0 days	Thu 09-03-17	Thu 09-03-17



Project: Software Development
Date: Wed 15-03-17

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

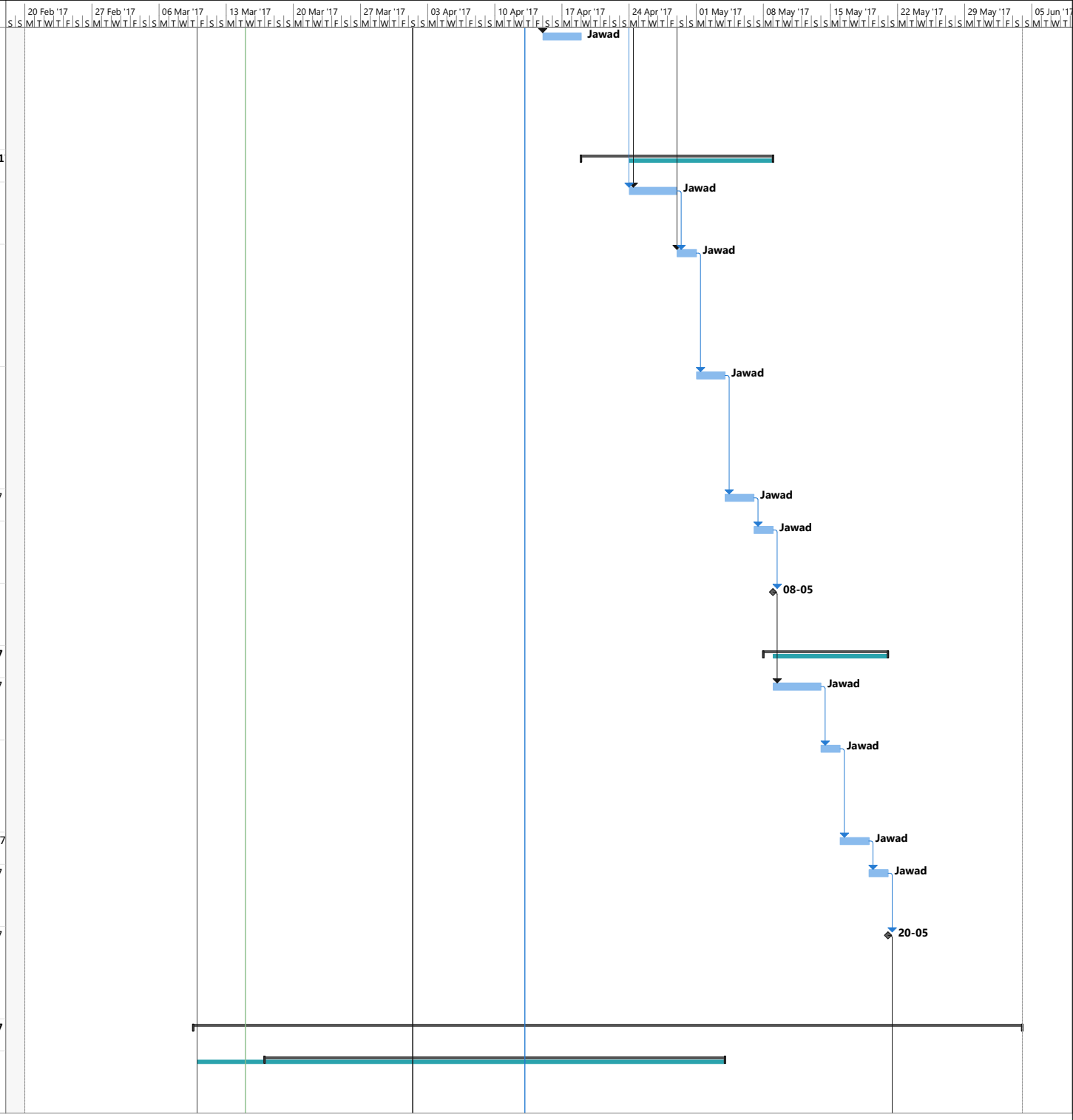
ID	Task Mode	Task Name	Duration	Start	Finish
18		**System Design (SDS Stage)**	**22.5 days**	**Thu 09-03-17**	**Fri 31-03-17**
19		Review preliminary software specifications	2 days	Thu 09-03-17	Sat 11-03-17
20		Develop functional specifications	5 days	Sat 11-03-17	Thu 16-03-17
21		Design of System	7 days	Thu 16-03-17	Thu 23-03-17
22		Develop prototype based on functional specifications	5 days	Thu 23-03-17	Tue 28-03-17
23		Review functional specifications and Design	2 days	Tue 28-03-17	Thu 30-03-17
24		Incorporate feedback into functional specifications	1 day	Thu 30-03-17	Fri 31-03-17
25		Obtain approval to proceed	4 hrs	Fri 31-03-17	Fri 31-03-17
26		Design complete	0 days	Fri 31-03-17	Fri 31-03-17
27		**Software Development Stage**	**23 days**	**Sat 01-04-17**	**Sun 23-04-17**
28		Review functional specifications	1 day	Sat 01-04-17	Sat 01-04-17
29		Identify modular/tiered design parameters	1 day	Sun 02-04-17	Sun 02-04-17
30		Assign development staff	1 day	Mon 03-04-17	Mon 03-04-17
31		Develop Code and Database	20 days	Tue 04-04-17	Sun 23-04-17
32		Developer testing (primary debugging)	15 days	Sun 09-04-17	Sun 23-04-17
33		Development complete	0 days	Sun 23-04-17	Sun 23-04-17
34		**Software Testing Stage**	**39 days**	**Sat 15-04-17**	**Tue 23-05-17**
35		Develop unit test plans using product specifications	4 days	Sat 15-04-17	Tue 18-04-17



Project: Software Development
Date: Wed 15-03-17

Task	Summary	Inactive Milestone	Duration-only	Start-only	External Milestone	Manual Progress
Split	Project Summary	Inactive Summary	Manual Summary Rollup	Finish-only	Deadline	
Milestone	Inactive Task	Manual Task	Manual Summary	External Tasks	Progress	

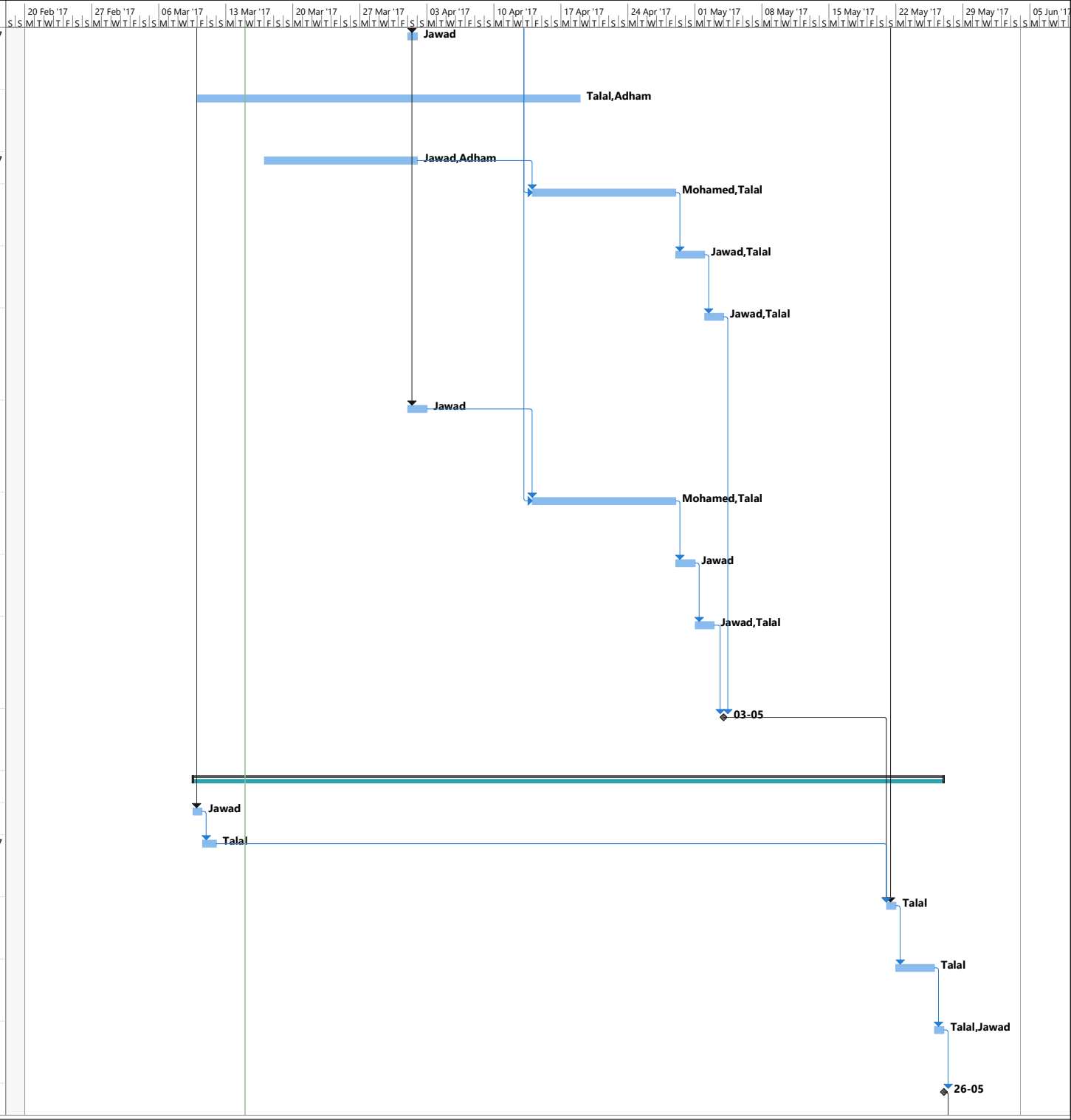
ID	Task Mode	Task Name	Duration	Start	Finish
36		Develop integration test plans using product specifications	4 days	Sat 15-04-17	Tue 18-04-17
37		**Unit Testing**	**20 days**	**Wed 19-04-1**	**Mon 08-05-1**
38		Review modular code	5 days	Mon 24-04-17	Fri 28-04-17
39		Test component modules to product specifications	2 days	Sat 29-04-17	Sun 30-04-17
40		Identify anomalies to product specifications	3 days	Mon 01-05-17	Wed 03-05-17
41		Modify code	3 days	Thu 04-05-17	Sat 06-05-17
42		Re-test modified code	2 days	Sun 07-05-17	Mon 08-05-17
43		Unit testing complete	0 days	Mon 08-05-17	Mon 08-05-17
44		**Integration Testing**	**13 days**	**Mon 08-05-1**	**Sat 20-05-17**
45		Test module integration	5 days	Tue 09-05-17	Sat 13-05-17
46		Identify anomalies to specifications	2 days	Sun 14-05-17	Mon 15-05-17
47		Modify code	3 days	Tue 16-05-17	Thu 18-05-17
48		Re-test modified code	2 days	Fri 19-05-17	Sat 20-05-17
49		Integration testing complete	0 days	Sat 20-05-17	Sat 20-05-17
50		**Documentation and Delivery**	**86.5 days**	**Thu 09-03-17**	**Sat 03-06-17**
51		**Documentation**	**48 days**	**Fri 17-03-17**	**Wed 03-05-17**



Project: Software Development
Date: Wed 15-03-17

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

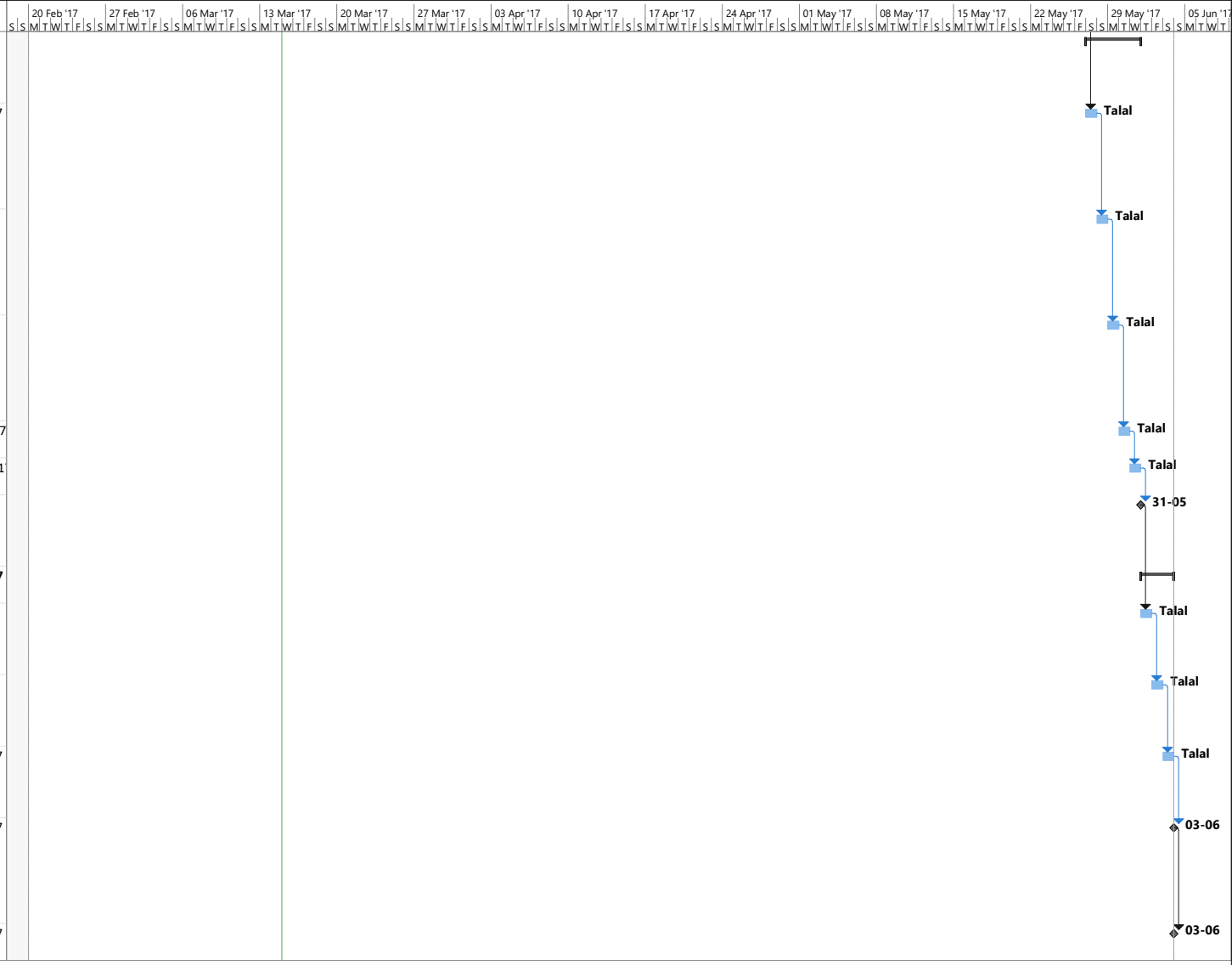
ID	Task Mode	Task Name	Duration	Start	Finish
52		Develop Help specification	1 day	Sat 01-04-17	Sat 01-04-17
53		Develop SRS Document	40 days	Fri 10-03-17	Tue 18-04-17
54		Develop SDS Document	16 days	Fri 17-03-17	Sat 01-04-17
55		Develop Help system	3 wks	Fri 14-04-17	Fri 28-04-17
56		Review Help documentation	3 days	Sat 29-04-17	Mon 01-05-17
57		Incorporate Help documentation feedback	2 days	Tue 02-05-17	Wed 03-05-17
58		Develop user manuals specifications	2 days	Sat 01-04-17	Sun 02-04-17
59		Develop user manuals	3 wks	Fri 14-04-17	Fri 28-04-17
60		Review all user documentation	2 days	Sat 29-04-17	Sun 30-04-17
61		Incorporate user documentation feedback	2 days	Mon 01-05-17	Tue 02-05-17
62		Documentation complete	0 days	Wed 03-05-17	Wed 03-05-17
63		**Pilot**	**78.5 days**	**Thu 09-03-17**	**Fri 26-05-17**
64		Identify test group	1 day	Thu 09-03-17	Fri 10-03-17
65		Develop software delivery mechanism	1.5 days	Fri 10-03-17	Sat 11-03-17
66		Install/deploy software to Google's Play Store	1 day	Sun 21-05-17	Sun 21-05-17
67		Obtain user feedback	4 days	Mon 22-05-17	Thu 25-05-17
68		Evaluate testing information	1 day	Fri 26-05-17	Fri 26-05-17
69		Pilot complete	0 days	Fri 26-05-17	Fri 26-05-17



Project: Software Development
Date: Wed 15-03-17

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

ID	Task Mode	Task Name	Duration	Start	Finish
70		**Deployment**	**5 days**	**Sat 27-05-17**	**Wed 31-05-17**
71		Determine final deployment strategy	1 day	Sat 27-05-17	Sat 27-05-17
72		Develop deployment methodology	1 day	Sun 28-05-17	Sun 28-05-17
73		Secure deployment resources	1 day	Mon 29-05-17	Mon 29-05-17
74		Train support staff	1 day	Tue 30-05-17	Tue 30-05-17
75		Deploy software	1 day	Wed 31-05-1	Wed 31-05-1
76		Deployment complete	0 days	Wed 31-05-17	Wed 31-05-17
77		**Post Implementation Review**	**3 days**	**Thu 01-06-17**	**Sat 03-06-17**
78		Document lessons learned	1 day	Thu 01-06-17	Thu 01-06-17
79		Distribute to team members	1 day	Fri 02-06-17	Fri 02-06-17
80		Create software maintenance team	1 day	Sat 03-06-17	Sat 03-06-17
81		Post implementation review complete	0 days	Sat 03-06-17	Sat 03-06-17
82		Software development complete	0 days	Sat 03-06-17	Sat 03-06-17



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Task
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