Austin Community College

Third Avenue Software Health-Care App Project

Team Green

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System Analysis and Design: Project Management (42845)

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# Part 1: Project Integration Management

## Task 1

*Review the seven processes of project integration management and identify which processes are needed to begin planning the project from an agile perspective. Briefly explain your reasoning for including and excluding processes. The processes are listed below and explained in more detail in the Module 4 Reading.*

Seven processes of project integration management:

1. Develop the project charter - A project charter will formally start the project and give a high-level description of the project’s objective and the product
2. Develop the project management plan - The project management plan is needed since it is where all the requirements will be listed at the start of the project. It allows for consolidation of the other management plans. While the traditional approach requires a WBS, an Agile environment would be developing a work backlog and would involve constant change once we begin. We do need a project management plan, it would just be constantly changing depending on the situation.
3. Direct and manage project work - Using the Scrum method, in place of high-level descriptions of the work to be completed, the team would develop a more detailed list of technical stories and associated tasks to complete during each sprint.   
    The work progress within a sprint can be represented on a sprint board maintained by the ScrumMaster. The sprint board contains a card to represent each task to be worked on during the sprint.
4. Manage project knowledge - Agile approach is collaborative and is enhanced by team members possessing a broad skill base rather than a narrow specialization. (Schwalbe, 2019). In this way, managing project knowledge is handled by each team member. It is up to the project managers and their team to focus on integration of team member’s knowledge. The project managers also should provide opportunities for team members to acquire additional skills.
5. Monitor and control project work - Planning, monitoring, and controlling are all activities that happen in Agile projects.
6. Perform integrated change control - The team members determine how plans and components integrate.
7. Close the project or phase - There has to be the end of the planning phase at some point. While Agile involves constant change, that doesn’t mean we continue forever. It’s important to keep a lesson’s learned log as we end the planning phase of the project to know what works to enhance the collaboration between team members in order to meet goals.

Note: In terms of Agile, we assume that all the processes are necessary. We do not plan to exclude any process, since they all can be translated into an Agile environment.

## Task 2

*Begin developing a project charter for the health-care app project. Assume that the project will take four months to finish and have a budget of $350,000. Use the project charter template provided in this text and the sample project charter in Table 4-1 if you need assistance. Project personnel have not been determined yet, so do not be concerned for now with this area of the charter.*

See **TeamGreen\_Charter.docx**

## Task 3

*Third Avenue first needs to identify a good project manager. Remembering your study of agile concepts in the text, by what title is the project manager known when using a Scrum approach? What skills and qualities must this person possess in order to lead the project effectively? How do these skills and qualities differ in a Scrum approach versus that of a more traditional project management style?*

* The title for a Project Manager using Scrum is ScrumMaster.
* Skills and qualities: Leadership skills, coordination and communication skills with previous experience, flexibility and adaptability, experience with delegating responsibilities, the ability to interact effectively with key stakeholders.
* A traditional project manager will have authorities over their team members, while a Scrum Master has control over the process and not the team.
* A project manager will tell each member what to do with authority, but ScrumMasters will facilitate members to coordinate with each other.

## Task 4

*Next, the person identified in Task 3 must form a team and establish a project framework within which the team will create a successful app. Describe at a high level how the team and framework will function, using as many relevant terms and concepts from Scrum as possible.*

* The product owner will establish a project framework that will have a product backlog, sprint backlog, and a burndown chart.
* To establish how the framework will function, the team will do some sprint planning using the capability wish list for the app to develop a sprint backlog.
* The team works in sprints to complete its work (typically two to four weeks), and have daily Scrum meetings for progress assessing.
* The oversight and the direction of activities to meet objectives and detailed project planning will be delegated by the team.
* The ScrumMaster will facilitate collaboration between team members and keep the team focused on timelines and goals.
* At the sprint end, a sprint review and retrospective will also be facilitated by the Scrum Master
* The scrum master will utilize techniques from just in time inventory methods of kanban.
* The team determines how plans and components integrate.
* When one sprint ends, the team revisits the product backlog and begins working on another chunk.

## Task 5

*After identifying a manager, team members, and project framework, Third Avenue needs to research the market to determine what competing apps might exist and how they operate. Your task here is to locate a similar mobile app or online program and then get a feel for its content and users. Use a targeted Web search to find the app or program and then spend a half-hour or so reading about it to get an idea of what the Third Avenue application should be able to do. Describe your findings in a bulleted list. Is something important missing from the preceding list of features for the health-care app?*

* Health4Me by United HealthCare app allows users to access their health information and their families' health information in one place.
* Users can also find healthcare facilities in their area and compare prices.
* The app also tracks biometric and fitness data.
* Personalized care notifications if missing medical services from lab tests to preventive care reminders.
* Features to pay medical bills with a credit card, debit card, back account or health savings account
* A digital identification card
* Wellness-related resources such as integration with wearable devices.

Our app will have an advantage because it is specifically designed to accommodate a segment of the population that is underserved by health apps. The older generation will engage and use our app more if the usability is tailored specifically for them including text/visual magnification tools and straightforward interfaces.

## Task 6

*Once the team has studied the app or program in Task 5, an initial meeting is necessary to discuss the features and content needed for the software’s first software iteration and to assign tasks to team members. The team also needs to establish schedules for project milestones and subsequent meetings. List your ideas for conducting the initial meeting and for creating an initial high-level schedule, using as many relevant terms and concepts from Scrum as possible.*

Conducting a solid kick-off meeting is a crucial step to get projects started on the right track. This meeting will introduce the project and energize team members by clarifying key stakeholders, reviewing project goals, and discussing future plans in an agile environment. The key points of the meeting will include:

* Introductions of attendees, i.e., product owner, scrum master, development team.
* Background of the Health-Care App and its place in the portfolio of Third Avenue Software
* Review of project-related documents (i.e. business case, project charter)
* Listings of all resources
* Discussion of Scrum framework
* Discussion of project scope, time, and cost goals
* Discussion of product backlog, sprint backlog, and burndown charts.
* The Scrum Master keeps track of of any changes that are made within the schedule

The meeting should include a list of action items to be sent out in a meeting minutes memorandum. It’s important that stakeholders and team members receive the meeting minutes within a day or so of the kickoff meeting so the next steps in the project are clear.

# Part 2: Project Scope Management

## Task 1

*Based on what you have learned in Part 2, complete the project charter you began in Part 1.*  
See TeamGreen\_Charter.docx

## Task 2

*Part 1 of this case listed the key features needed for the app. The list is quickly summarized here:*

*·         A fitness tracker for recording health information, such as blood pressure and cholesterol*

*·         A medication tracker (electronic pillbox) with a calendar and alarm notifications*

*·         An electronic address book for recording contact data of doctors and other health-care professionals*

*·         An emergency list for storing vital phone numbers and addresses to provide quick access to hospitals, urgent care clinics, children, and friends in an emergency. List entries will trigger interactive GPS mapping software to help locate hospitals and other health-care venues.*

*·         An emergency information list in which customers store important data about themselves in case it is needed in an emergency*

*·         A resources feature that lists links to other popular online health sites, such as WebMD*

*·         A payment feature that tracks health expenses and allows customers to make related payments through their phones*

*·         Usability issues*

*Using this feature list, develop a set of cards, user stories, and technical stories to describe the software requirements for the health-care app. Remember from your course readings that user stories describe what users need to do to execute a task or perform a job function, focusing on the “who,” “what,” and “why” of a requirement in a simple, concise way.*

***“As a [who], I want [what] so that [why].”***

|  |  |
| --- | --- |
| **User Stories** | **Technical Stories** |
| As a user, I want a fitness tracker so that I can check my blood pressure and cholesterol quickly. | **The fitness tracker should record the user’s health information, such as cholesterol and blood pressure.** |
| As a user, I want to have a medication tracker so that I can regularly schedule when to take my medication. | **There should be a medication tracker with a calendar and alarm feature. Possibly link it to a healthcare system that hospitals use so doctors can autoinput.** |
| As a user, I want an address book so that I can contact my doctors easily. | **The app should have an electronic address book to the doctors’ network and other health-care professionals.** |
| As a user, I want an emergency list of hospitals so I can find one if something bad happens in a place I’m unfamiliar with. | **We should implement a GPS to locate hospitals and other health-care venues in the area.** |
| As a user, I want an emergency information list so that I can quickly and easily go to the hospital. | **In the event the user can’t give information despite needing to go to the hospital, the app should be able to provide information to those doctors if need be.** |
| As a user, I want a resources feature so that I can look up my symptoms and look at medical news. | **The app should have a link to popular online health sites like WebMD and medical research sites.** |
| As a user, I want a payment feature so that I can see my costs and how to pay them. | **A payment system should be implemented with the hospital to show the costs and how to pay them. Options should include payment plans that the hospitals can offer.** |
| As a handicap user, I want accessibility options so that I don’t have issues navigating through it. | **An accessibility menu should be available from the beginning to allow users to customize the menus for easier use if need be.** |
| As a programmer, I want to make sure that the software meets specifications so that we can install it onto phones. | **Lia and Eric will make sure the features in the app shouldn’t cause any crashes. It can run better later, just get it working.** |
| As a regulatory manager, I want to make the app fit health care regulations so that we’re allowed to sell it. | **Jack will talk with Lia and Eric to make sure to tell them how the app is supposed to fit into healthcare guidelines.** |
| As a quality assurance manager, I want to make the app better than others like it so that we can beat out the competition. | **When each feature in the app is stable, Kendra can compare it to other similar apps and give notes on what to improve.** |
| As a ScrumMaster, I want to keep the team morale and synergy high so that we can create a high quality product. | **Eric will go to each team member and make sure while coding the app and facilitate communications to keep everyone on the level.** |
| As a marketer, I want to make the app known so that customers will be aware once we publish the app. | **Kendra will check on the general feelings of the market in regards to the app and let the rest of the team know what parts are popular in those already established apps.** |

## Task 3

*The “Collecting Requirements” section of Module 5 discusses several methods for gathering requirements, including questionnaires, surveys, stakeholder interviews, prototyping, and context diagrams. Based on your knowledge of agile and Scrum, which of these methods should the Third Avenue team use to collect requirements for the project? Write a two-paragraph response to defend your answer.*

In regard to collecting Requirements, Benchmarking and Focus Groups seem to be the best options for the team. With Benchmarking, we can compare the features we need with those that are currently in use with other apps. United Healthcare, as listed before, has an app very similar to the one the team is making. Rather than waste time debating about UI and running into bugs as we program the application, it would be more productive to learn from well-established health focused applications and avoid the problems they have. Complaints about health-care apps are fairly common so we wouldn’t have a hard time seeing what pitfalls to avoid. Once we document what works and what doesn’t, we can begin production and then focus on accessibility using Focus Groups.

Our app requires accessibility as a main focus but the problem with that is that each person has individualized needs. Since there are many factors that go into achieving accessibility, we will need to implement commonly placed ones like text display size control and text to speech. Per iteration of the app, we can have focus groups of those with handicaps to explain to the team what else is needed. A major part of our external shareholders is supposed to be those with bad eyesight, poor mobility, and more that the team can’t imagine without living it themselves, so we need to hear the voices of those who do live with them in order to improve the app. With Benchmarking showing requirements that were already figured out by others and Focus Groups showing requirements the team might not be aware of, we can get the appropriate amount for each.

## Task 4

*Develop an initial scope statement. Make sure to follow the detailed process shown in Module 5. Recall that a good scope statement requires some of the items shown in the following table.*

|  |
| --- |
| **Components of a scope statement** |
| Information from the project charter |
| Product scope description |
| Functional and design specifications for developing software |
| Product user acceptance criteria |
| Detailed information for project deliverables |
| Project boundaries, constraints, and assumptions |
| References to supporting documents, such as product specifications or corporate policies |

*Based on your work in developing the software requirements and scope statement, develop a list of features that will become the MVP for the first iteration of the health-care app. For example, the programmers’ initial ideas for the app include (a) an electronic address book for recording contact data of doctors and other health-care professionals; and (b) an emergencies list for storing vital phone numbers and addresses of hospitals and other emergency venues. Should these two items be combined in the MVP version? Consider such issues as you develop your list.*

**Scope Statement**

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| --- |
| **Project Title:**Third Avenue Software Health-Care App Project  **Date:** 07/06/2022             **Prepared by:** 11/06/2022 |
| **Project Justification:**  Third Avenue Software Health-Care App will be the creation of a user-friendly and widely accessible mobile application. The application will act as a one-stop shop for customers’ health-care information and needs. It will appeal to the widest audience possible, particularly those with handicaps, and will be monetized. |
| **Product Characteristics and Requirements:**  1.  Accessible to all users regardless of handicaps.  2.  Includes a fitness tracker, medication tracker, electronic address book, emergency information list, resource search, and payment option.  3.  A minimum viable product (MVP) will be created in 6 weeks time  4.  The app will be monetized. |
| **Summary of Project Deliverables**  **Project management-related deliverables:** business case, charter, team contract, scope statement, WBS, schedule, cost baseline, status reports, final project presentation, final project report, lessons-learned report, and any other documents required to manage the project.  **Product-related deliverables:** research reports, design documents, software code, hardware, etc.   1. A working Third Avenue Software Health-Care App 2. An accessibility menu on the app to customize for each user 3. Focus Group Feedback forms 4. A MVP with the basics of each feature implemented. The electronic address book and the emergencies list can be combined then. |
| **Project Success Criteria:**  Everything done under a $350,000 budget  A Health app with all features included  Each feature will have accessibility options implemented  It will have a successful monetization strategy implemented |

# Part 3: Project Schedule Management

## Task 1

Programmer Complexity Estimate (PCE): 1 = 10 Story Points (SP)

**1.     Fitness tracker:**

User stories:  Record health information, such as blood pressure and cholesterol.

Technical stories:  Design,code, test, meet with stakeholders.

**PCE: 3; SP: 30**

Workload: Medium

Project Urgency: High

**2.     Medication tracker:**

User stories:  Produce an electronic pillbox with a calendar and alarm notifications.

Technical stories:Design, code, test, meet with stakeholders.

**PCE: 3; SP: 30**

Workload: Medium

Project Urgency: High

3.     E**lectronic address book:**

User stories:  Record contact data of doctors and other health-care professionals.

Technical stories:Design, code, test, meet with stakeholders.

**PCE: 2; SP: 20**

Workload: Low

Project Urgency: High

4.     E**mergency list for storing vital phone numbers:**

User stories:  Addresses to provide quick access to hospitals, urgent care clinics, children, and friends in an emergency. List entries will trigger interactive GPS mapping software to help locate hospitals and other health-care venues.

Technical stories:Design, code, test program, automate security tests, meet with stakeholders.

**PCE: 6; SP: 60**

Workload: High

Project Urgency: Medium

**5.     Emergency information:**

User stories:  Create a list in which customers store important data about themselves in case it is needed in an emergency.

Technical stories:  Design, code, test, meet with stakeholders.

**PCE: 2; SP: 20**

Workload: Low

Project Urgency: Medium

**6.     Resources feature:**

User stories:  Create links to other popular online health sites, such as WebMD.

Technical stories: Design, code, test, meet with stakeholders.

**PCE: 1; SP: 10**

Workload: Low

Project Urgency: Low

7.     P**ayment feature:**

User stories:  Track health expenses and allow customers to make related payments through their phones.

Technical stories: Design, code, test program, automate security tests, meet with stakeholders.

**PCE: 4; SP: 40**

Workload: High

Project Urgency: High

**8.     Usability:**

User stories:  Text enlargement feature for ease of reading by older clients.

Technical stories: Design, code, test, meet with stakeholders.

**PCE: 4; SP: 40**

Workload: High

Project Urgency: High

**Total Story Points: 250**

## Task 2

Please see “Third Avenue Health-Care Software App Project1.mpp” for detailed Minimum Viable Product (MVP) and four-month full project scope schedule with milestones (attached).  The following represents a sprint backlog and teamwork assignments for the three sprints that are of two-week duration ( hours per day) to complete MVP. Schedule is subject to change..

**Sprint 1 MVP:**

(A.)Fitness Tracker:  Record health information, such as blood pressure and cholesterol.

(B.) Electronic Address Book: Record contact data of doctors and other health-care professionals.

**Task            Day1   Day2   Day3   Day4   Day5   Day6   Day7   Day8   Day9     Day10**

Design         8      10

Code                                12    10    8      7      9

Test                                                                                             10

Deploy                                                                                                        8

Meet Stakeholder                                                                                                   7

**Sprint 1 MVP, Work Assignment Schedule:**

*Project Manager*: Design, 4 hours; Code, 8 hours; Test, 2 hours; Deploy, 2 hours; Meet Stakeholder, 2 hours.

*Eric,* Programmer*:* Design, 7 hours; Code, 22 hours; Test, 3 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia,* Programmer: Design, 7 hours; Code, 16 hours; Test, 3 hours; Deploy, 1 hour.

*Brianna*, Marketing: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Jack*, Regulatory Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Kendra,* Quality Assurance Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Aziz*, Quality Assurance Tester: Test, 2 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

**Sprint 2 MVP:**

(A.) Medication Tracker: Produce an electronic pillbox with a calendar and alarm notifications.

(B.)  Emergency Information: Create a list in which customers store important data about themselves in case it is needed in an emergency.

**Task            Day1   Day2   Day3   Day4   Day5   Day6   Day7   Day8   Day9   Day10**

Design         9      9

Code                                    10    12    8      7      9

Test                                                                                                 10

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Meet Stakeholders                                                                                                  7

**Sprint 2 MVP, Work Assignment Schedule:**

*Project Manager*: Design, 4 hours; Code, 8 hours; Test, 2 hours; Deploy, 2 hours; Meet Stakeholder, 2 hours.

*Eric,* Programmer: Design, 7 hours; Code, 22 hours; Test, 3 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia,* Programmer*:* Design, 7 hours; Code, 16 hours; Test, 3 hours; Deploy, 1 hour.

*Brianna,* Marketing: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Jack,* Regulatory Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Kendra,* Quality Assurance Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Aziz,* Quality Assurance Tester: Test, 2 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

**Sprint 3 MVP:**

(A.) Payment Feature:  Track the customer’s medical expenses and allow customers to make medical payments through their phones.

(B.) Resources Feature: List links to other popular online health sites, such as WebMD. The customer will have the option to add links to the list.

**Task            Day1   Day2   Day3   Day4   Day5   Day6   Day7   Day8   Day9      Day10**

Design         7      11

Code                                    10    10    10    7      9

Test                                                                                                 8

Deploy                                                                                                        8

Meet Stakeholders                                                                                                  6

**Sprint 3 MVP, Work Assignment Schedule:**

*Project Manager:* Design, 4 hours; Code, 8 hours; Test, 2 hours; Deploy, 2 hours; Meet Stakeholder, 2 hours.

*Eric*, Jr. Prog.: Design, 7 hours; Code, 22 hours; Test, 3 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia*, Prog.: Design, 7 hours; Code, 16 hours; Test, 3 hours; Deploy, 1 hour.

*Brianna*, Marketing: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Jack*, Regulatory Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Kendra*, Quality Assurance Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Aziz,* Quality Assurance Tester: Test, 2 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

## Task 3

The MVP sprint schedule created by Team Green does not allow for much variation from the projected staff assignments as outlined in the schedule management plan.  The project manager will play a key role in leading the team, accomplishing milestones, and ensuring that the deliverables are ready on-time for the stakeholders as promised.  Moreover, the project manager himself/herself is responsible for design, coding, testing, deployment, and meeting with stakeholders to fulfill job obligations.  Therefore, if there were to be any MVP schedule changes, then that will have a negative impact on project completion date.

This makes the task of completing MVP in six weeks of three sprints unrealistic.  For example, if the project manager were to be taken-off the project and assigned to other organizational obligations and/or the stakeholders were to increase the project scope, then the present schedule must be revised to reflect new time schedule and cost estimation.  Furthermore, in our opinion, the present rushed schedule will contribute to a lot of re-work to correct code and bring the app to required specifications.

We also remain concerned that when the project manager is taken off the project to meet other organizational obligations, the project may fall behind the schedule because the two substitute staff members, Aziz and/or Barry, do not have the same level of skill in design, coding, and app deployment as that of a project manager. Based on these considerations, we recommend that Third Avenue run nine weeks of three sprints to complete MVP.  This will allow more time for the project team to attend to MVP specifications, and reduce time lost on re-work after the deliverables are handed to the client. Of course, this will delay the project by an additional two week, but the idea is worth discussing with the stakeholders.

## Task 4

Please see “Third Avenue Health-Care Software App Project 1.mpp” for details about subsequent software iterations to complete the remainder of the project in four-months with milestones (attached).  The following represents a sprint backlog and teamwork assignments for the three sprints that are of three-week duration (hours per day) to complete the remainder of the app project. Schedule is subject to change.

**Sprint 4:**

(A.) Prepare an emergency list for storing vital phone numbers and addresses. (This list will provide quick access to local in-network hospitals, urgent care clinics, and children or friends who can be relied upon to provide transportation in an emergency.)

(B.) Construct an interactive GPS map to become available in a new window, with voice and text directions.

**Task            Week 1                           Week 2                               Week 3**

Design         12                                   24

Code            66                                       66

Test                                                                                                         14

Deploy                                                                                                        10

Meet Stakeholders                                                                                      7

**Sprint 4, Work Assignment Schedule:**

*Project Manager:* Design, 10 hours; Coding, 32 hours; Test, 2 hours; Deploy, 2 hours; Meet Stakeholder, 2 hours.

*Eric*, Jr. Prog.: Design, 13 hours; Code, 50 hours; Test, 5 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia*, Prog.: Design, 13 hours; Code, 50 hours; Test, 5 hours; Deploy, 2 hour.

*Brianna*, Marketing: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Jack*, Regulatory Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Kendra*, Quality Assurance Manager: Deploy, 2 hours; Meet Stakeholders, 1 hour.

*Aziz,* Quality Assurance Tester: Test, 2 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

**Sprint 5:**

(A.) Prepare an emergency list in which customers store important information about themselves, such as medical conditions.

(B.) Improve usability of the app with larger text font for older patients.

**Task            Week 1                           Week 2                               Week 3**

Design         16                                   20

Code            52                                       52

Test                                                                                                         14

Deploy                                                                                                        10

Meet Stakeholders                                                                                      7

**Sprint 5, Work Assignment Schedule:**

*Project Manager:* Design, 10 hours; Coding, 12 hours; Test, 2 hours; Deploy, 2 hours; Meet Stakeholder, 2 hours.

*Eric*, Jr. Prog.: Design, 13 hours; Code, 46 hours; Test, 5 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia*, Prog.: Design, 13 hours; Code, 46 hours; Test, 5 hours; Deploy, 2 hour.

*Brianna*, Marketing: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Jack*, Regulatory Manager: Deploy, 1 hour; Meet Stakeholders, 1 hour.

*Kendra*, Quality Assurance Manager: Deploy, 2 hours; Meet Stakeholders, 1 hour.

*Aziz,* Quality Assurance Tester: Test, 2 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

**Sprint 6:**

(A.) Improve usability of the app as a whole, especially, with larger text font for older patients.

**Task            Week 1                           Week 2                               Week 3**

Design         7                                     14

Code            46                                       40

Test                                                                                                         30

Deploy                                                                                                        20

Meet Stakeholders                                                                                      10

**Sprint 6, Work Assignment Schedule:**

*Project Manager:* Design, 5 hours; Coding, 6 hours; Test, 4 hours; Deploy, 2 hours; Meet Stakeholder, 4 hours.

*Eric*, Jr. Prog.: Design, 9 hours; Code, 40 hours; Test, 10 hours; Deploy, 2 hours; Meet Stakeholders, 1 hours.

*Lia*, Prog.: Design, 7 hours; Code, 40 hours; Test, 10 hours; Deploy, 2 hours.

*Brianna*, Marketing: Deploy, 6 hours; Meet Stakeholders, 1 hour.

*Jack*, Regulatory Manager: Deploy, 2 hours; Meet Stakeholders, 1 hour.

*Kendra*, Quality Assurance Manager: Deploy, 6 hours; Meet Stakeholders, 2 hours.

*Aziz,* Quality Assurance Tester: Test, 6 hours.

*Barry,* Accounting Staff: Meet Stakeholders, 1 hour.

## Task 5

Please see “Third Avenue Health-Care Software App Project 2.mpp” for a full scope display of Gantt charts with milestones (attached).

The new Gantt chart displays running three MVP Sprints with three weeks of recommended duration rather than three MVP Sprints with two weeks of duration.  The new schedule delays the project finish date by three weeks from 11/16/2022 to 12/7/2022.  However, in our estimation, the new schedule represents a more realistic schedule and cautions against re-work of the completed work in an agile project management environment.

# Part 4: Project Cost and Quality Management

## Task 1

*Review the user stories, technical stories, and story points you developed in earlier parts of this case and then use the information to estimate the cost of the health-care app project. As you learned in the introduction to Part 4, Third Avenue accountants estimate that the average production cost of a story point is $1200.* ***Based on the values you calculate, do the project costs appear to be within the overall budget of $350,000?******Do the costs seem to be within the MVP budget of $120,000?*** *If the costs are not within budget, adjust the story points you developed in Part 3 to make sure your revised numbers are within budget. You might also have to reconsider the feature set within the MVP if it exceeds its budget.*

The project appears to be within the overall budget of $350,000 and within the MVP budget of $120,000:

·         A fitness tracker that allows customers to record and track their blood pressure readings, cholesterol levels, exercise regimen, calorie intake, and other related information (3):

o   30 story points x $1200 = $36,000

·         A medication tracker in which customers can enter their medications and schedules for taking those meds. This “electronic pillbox” will contain a calendar that displays the customer’s medication schedule and an alarm that sounds whenever it’s time to take one of the medications (3):

o   30 story points x $1200 = $36,000

·         A physicians list that is essentially an electronic address book for the customer’s health-care company, doctors, nurses, and physician’s assistants. The list will include controls that allow customers to quickly incorporate existing entries from other contact lists in their phones (2):

o   20 story points x $1200 = $24,000

·         An emergencies list for storing vital phone numbers and addresses. This list will provide quick access to local in-network hospitals, urgent care clinics, and children or friends who can be relied upon to provide transportation in an emergency. As soon as the customer enters and saves an address, an interactive GPS map becomes available in a new window, with voice and text directions (6):

o   60 story points x $1200 = $72,000

·         An emergency information list in which customers store important information about themselves, such as medical conditions (e.g., the customer is diabetic), allergies, adverse reactions to drugs, and other personal information that a physician, nurse, or other concerned party might find useful in an emergency (2):

o   20 story points x $1200 = $24,000

·         A resources feature that lists links to other popular online health sites, such as WebMD. The customer will have the option to add links to the list (1):

o   10 story points x $1200 = $12,000

·         A payment feature that tracks the customer’s medical expenses and allows customers to make medical payments through their phones (4):

o   40 story points x $1200 = $48,000

·         Usability issues:

o   40 story points x $1200 = $48,000

**GRAND TOTAL** = $300,000

## Task 2

*Assume that you have completed one month of the health-care app project and have some reliable EVM data for cost accounting. Remember that the budget at completion (BAC) is $350,000 for the four-month project. You have received the following figures from the Third Avenue accountants:*

*PV    $105,000*

*EV    $122,000*

*AC    $105,000*

*Using this information, answer the following questions.*

*·         What is the cost variance, schedule variance, cost performance index (CPI), and schedule performance index (SPI) for the project?*

*·         Use the CPI to determine the estimate at completion (EAC) for the project.*

*·         Based on your answers, does the project appear to be on schedule and within budget?*

Cost variance = EV – AC = 17000

Schedule variance = EV – PV = 17000

Cost performance index (CPI) = EV/AC = 1.162

Schedule performance index (SPI) = EV/PV = 1.162

Estimate at completion EAC = BAC/CPI = $350,000/1.162 = $301,205  (Very close to grand total)

=>        With suggested changes made in Schedule Management and calculations above, the project appears to be on schedule and within budget. However, careful measures must be taken in order to not run the project off budget. This project requires a lot of rework such as coding, design. Subtracting the grand total from the budget, we have $50,000 to cover all rework (meeting expense, travel expense, etc.).

## Task 3

*The health-care app will undergo rigorous software testing by the Third Avenue Quality Assurance staff, using test plans that might fill entire binders. At this early point in the process, however, such plans are still in development. Develop a short list of quality requirements for testing at least five of the important app features and/or usability issues described thus far in this running case. In your list, briefly describe each requirement.*

Testing for emergency list:

* Do all of the data-entry fields accept text without problems? For example, long entries in a field can sometimes be clipped or truncated prematurely, which is frustrating to users.
* Is it possible to enter nonsensical data in a field? For example, users should not be allowed to type text characters into a field that records phone numbers.
* Does the software automatically move the user from one entry field to the next? Does the cursor always appear in the next entry field as a means of visual feedback for the user?
* As soon as the user enters and saves an address, an interactive GPS map should become available in a new window, with voice and text directions. Does the window appear? Does it appear immediately?
* When you slide your finger to create the effect of movement within the map, does the software redraw in a timely manner?

Testings for physicians list:

* When searching for nearest physicians, does the app display physicians in an order of closest for furthest location?
* When physicians list is displayed, there should be a filter to select in-network and/or out-of-network physicians. Does the list display in-network physicians by default?
* Upon clicking on the listed physicians, there should be information of the physician and a phone number to call. Does clicking on the phone number prompt the app to activate the call function of the device the user is using? For example, if a user is using an iPhone, when clicking on the phone number, there should be a pop-up to ask the user if they want to call this number, and when hitting “OK”, the phone should be calling the number.
* Does the physician list have a filter for people with the same name?
* Does the physician list have a filter for specialization?

Testings for medication tracker:

* When users enter medication names, there should be a list of suggested medication names for users to easily pick the right name. Does the list appear after two/three letters or more?
* Can the user go back to previous days on the calendar to edit their medication information?
* Is there a reminder feature for the alarm? Can users set multiple alarms a day for one medication?
* When entering the medication schedule, there should be an option to choose “everyday”, or “every” and a drop-down list of all the days of the week. Does this feature allow users multiple choices?

Testings for fitness tracker:

* When recording blood pressure or cholesterol  levels readings, will the app accept readings that are invalid or abnormal?
* Will there be an under and above limit where if the reading goes beyond, the app will prompt a warning?
* Can users set a range for goal calories intake per day?
* When users enter exercise and time of exercise, will the app save the information for suggestions next time?

## Task 4

*Modules 2 and 8 of the text discussed Kanban, a method sometimes used with Scrum. Kanban uses five core properties:*

*·         Visualize the workflow. Cards are a common visualization method.*

*·         Limit work in progress. New project work is done when it can be incorporated into the next software iteration and when there is available capacity. In this way, problem areas are quickly revealed for resolution.*

*·         Measure and manage flow. A key here is to analyze problem areas and then implement changes to correct the problems as quickly as possible.*

*·         Make process policies explicit. Everyone on the project team must understand the processes and any problems with them.*

*·         Use models to recognize improvement opportunities. The models themselves are less important than the important agile concept of continuous improvement.*

*Based on your work on the case so far, which property of Kanban has proven most useful to you? Write a two- to three-paragraph answer.*

When a new task is started before the current one can be finished, oftentimes work process could become inefficient. This contributes to the accumulation of high costs of production. Switching between multiple tasks at the same time means one must frequently switch context and mindset, which increases the risk of burnout. According to a Blind study, nearly 60% of people working in the tech sector get burned out at their jobs (Workplace Insights).

A highly effective solution to this problem is limiting work in progress, which is arguably the most crucial Kanban practice. Kanbanize summarizes that work in progress, or WIP, limits “restrict the maximum number of work items in the workflow's different stages (Kanban board columns). They can be defined per person, per work stages/type, or for the entire work system” (“What Is a WIP Limit in Kanban” ).

The main benefit of the WIP limits is that with their help, teams will be more focused on finishing their current tasks instead of starting new ones (Doucett). A useful technique for limiting work in progress is called swarming. Swarming encourages each team member to asset and help other team members with a task in progress with a time sensitive status before starting a new task. Utilizing WIP limits impacts teamwork, productivity and the inventory (Scotland).

References

“Close to 60 Percent of Surveyed Tech Workers Are Burnt out-Credit Karma Tops the List for Most Employees Suffering from Burnout.” *Blind Blog - Workplace Insights*, 29 May 2018, https://www.teamblind.com/blog/index.php/2018/05/29/close-to-60-percent-of-surveyed-tech-workers-are-burnt-out-credit-karma-tops-the-list-for-most-employees-suffering-from-burnout/.

Doucett, Jerry. “Kanban as an Approach to Helping Teams Mature.” *BERTEIG Consulting and Training*, 9 Jan. 2019, https://berteig.com/kanban/kanban-as-an-approach-to-helping-teams-mature/.

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# Part 5: Project Resource and Communications Management

## Task 1

After the misgivings of scheduling by managers, we adjusted our framework utilizing user stories and technical stories to inform the sprint schedule. The development team suggested we adjust project resources to have the Electronic Address Book feature for physicians and pharmacies in the same sprint as the Emergency Contact feature as they would both implement similar coding and interfaces.  These are both essentially a user created contact list with easy calling or emailing features. Since these types of contact list packages have been extensively tested by various mobile operating systems, we could model our code from this with the user interface and the integration with other app features being the main differences between the OS and our app.

In this way, we are taking some of the heavy lifting off the development team so they can assist with other company work. The design team will mostly be differentiating the code by making the user interface and input forms user friendly with an elderly population in mind. The design team will also ensure that the interfaces are in line with the critical feature list and, from there, the development team code the integration of these features with the rest of the app. This resource leveling will minimize variations in resource loading by shifting tasks to remove resource overallocation of the development team.

## Task 2

The agile approach to project management requires all communications be up to date, easily available, and reviewed regularly with stakeholders (Schwalbe). The structure inherently requires regular contact with the entire team and transparency between members’ progress and expectations. Good communication built into the project management framework then allows for a high acceptance for feedback and change. In turn, this allows constant feedback from team members and stakeholders ultimately creating a better output within the project timeline. (Carr)

IT projects typically require a lot of adaptability because the timeline and framework for the project may not necessarily be linear. Competitors release competing products, stakeholder expectations change, and user testing offers unexpected feedback. As requirements change to better the product overall, rapid, and effective notification of changes to the team is essential. All projects require great communication but with an agile perspective, it simply is not an option to deprioritize communications and communication skills within the team or the whole structure and schedule falls apart. Testers don’t know what they’re looking for, programmers don’t know features to prioritize, and stakeholders are unaware of resource constraints and change requests.

Dependencies within phases of complex projects require that the team is in constant communication with each other so they can plan their individual schedules. If a team member is working on a phase that cannot begin until another phase is complete, the progress of the phase before must be communicated regularly in order for other team members to know when to expect to start their work. Ideally in planning a project with an agile approach fully embraced by the company culture, surprises and confusion are minimized throughout the life of the project.

No matter the project, communication and team cooperation is the key to meeting time, scope, and budget constraints, but more importantly, great communication frameworks and skills build solid products with input and feedback from all invested. The reason why Agile is here to stay is because ultimately, this project management approach creates better teams and better products and services.

**Works Citied**

Carr, Kira. *Agile Project Managment vs. Traditional Project Management*. 15 8 2017. https://www.knowledgehut.com/blog/agile/agile-project-management-vs-traditional-project-management. 23 7 2022.

Schwalbe, Kathy. *Information Technology Project Mangement Ninth Edition*. Boston: Cengage Learning, Inc., 2018. Book.

## Task 3

It is urgent to get the change request approved to move forward with switching the Medication Tracker into Sprint 1 and the Electronic Address book feature into Sprint 2 in order to correct the burndown chart. As of right now, we’re on course to be late with the new proposed timeline if this change isn’t approved immediately.

***Progress Report***

|  |
| --- |
| **Project Name**: Third Avenue Health App  **Team Member Name:** Green  **Date:** 7/23/2022  **Reporting Period:** 7/11/2022 – 7/23/2022 |
| **Work completed this reporting period:**  Fitness Tracker still in development phase. Quality requirements for fitness tracker and electronic written out and communicated to team to be used once we get to the testing phase. |
| **Work to complete next reporting period:**  Continue working through Sprint 1. Submit change request to switch features in this sprint with the next so that fitness and medicine tracker features are in sprint 1 and emergency contact and electronic address book are in sprint 2. |
| **What’s going well and why:**  Fitness tracker design and coding progress is on track. Culturally, the team is responding well to the agile method and is regularly communicating status of work and feedback. |
| **What’s not going well and why:**  Features in Sprint 1 do not have enough similarities to streamline the work for the development team. Development team having issues with time management as they switch between the fitness tracker coding and the electronic address book. They also have to manage other work for the company. Development team overallocated in this sprint. |
| **Suggestions/Issues:**  Utilize resource leveling by switching features in Sprint 1 and Sprint 2 so features have more coding similarities. |
| **Project changes**  Switch features to address in sprint 1 from Fitness Tracker and Address Book to Fitness Tracker and Medication Tracker. Put Emergency Information feature and Electronic Address Book in Sprint 2 since they have similar development features and will lighten the load of the development team in Sprint 2 to work on other company projects as per management request. |

Burndown Chart for Sprint 1Chart, line chart

Description automatically generated

# Part 6: Project Risk and Procurement Management

At a glance, the Agile methodology can seem like a good approach to working on a project. A key component to success is to have flexibility and a willingness to adapt and collaborate with others to make it work. Agile method runs a risk because it isn't necessarily deadline driven, while this case would have a strict deadline. This comes into play when teams don't have a clear end result.The Agile method doesn't require a significant amount of planning as it has no finite end. It could become easy to get sidetracked because the agile method is very much a "see-as-you-go" approach. One way to help the process come along is to use visual representations to portray what the workflow will look like within project management. One of the pros for agile is also a con, the incremental delivery allows the opportunity for less experienced devs to negatively impact the project. Working on several tasks at once will inevitably lack a uniform design, making a longer-term project potentially more problematic.

A picture containing table

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Although it may be tempting to outsource certain tasks within a project to help complete this project more efficiently, there are also several reasons to complete all of the project work in-house. A few primary reasons Third Avenue Software will be performing all of the work in-house includes total control of the project (in terms of how certain tasks are being monitored along with a met deadline guarantee), as well as financial obligations.

Having total control of the project is a key component when it comes to a task as big as creating a one-stop-shop that is this health-care app. With an app that includes this many features we cannot risk unexpected speed bumps in our timeline that can be caused by delayed project due dates, potentially low quality, even communication can suffer. When outsourcing labor off-site, it can be difficult to ensure that outsourced labor stays on track. Many freelanced contractors take on several jobs at once, and that can jeopardize the expected due dates of work. The risk quality control can potentially take a negative swing as well when it comes to outsourcing companies or freelancers. Some (but not all) of these laborers can be more motivated by profit rather than a job well done. Time and money may be saved, but if the quality of the product isn't up to the standards of shareholders it can lead to trouble. The last potential risk with control would include things being lost in translation. When outsourcing work via email or telephone, instructions and other important information are highly likely to get muddled.

Financially, we have no need to outsource labor. More often than not, there are hidden costs that show up when it comes to outsourcing work. Many outsourcing companies require potentially lengthy contracts that can add up in terms of cost. Communication and work quality can also negatively impact our project financially. All terms and conditions must be clearly stated because we don't want to take a financial hit if our outsourced work fails to deliver.

# Part 7: Project Stakeholder Management

As you learned in the text, it is critical to involve key stakeholders on important projects and focus on their needs. In agile projects, however, increased stakeholder involvement and faster decision making are often required. To enable timely, productive discussion and decision making, agile teams communicate directly with stakeholders instead of wading through tiers of management to establish such communications.

The Third Avenue health-care app project involved the following stakeholders:

·        You, the product owner. You are one oftwo senior programmers at Third Avenue.

·        Eric, a junior programmer who is considered by his peers to be the author of some of the best code at the company. You have also designated Eric to be the project ScrumMaster.

·        Lia, another talented young programmer

·        Brianna, a marketing representative who has experience in health care from a previous job

·        Jack, the regulatory manager at Third Avenue

·        Kendra, the Quality Assurance manager

·        Aziz, a Quality Assurance tester who began his career as a programmer

·        Barry, a member of Third Avenue’s three-person accounting staff

·        Members of Third Avenue management, who occasionally expressed doubts about the team’s ability to complete the work by the deadline and within budget

## Task 1

The preceding list contains a rather glaring omission. What group of stakeholders is not shown in the list?

* The users of the Health-Care App are among the most important stakeholders and we must include their impressions about project usability and ease of functioning.
* Healthcare professionals, experts, those in the healthcare fields that can make sure the information is correct
* Procurement management staff
* Financial management staff

## Task 2

Review the preceding list of project stakeholders and project members, and then identify two examples of how these stakeholder roles might have been different in a traditional project management approach.

The stakeholders continually change items on the backlog which the team will respond to as new features and updates are added. This is different from a traditional WBS. The agile method encourages active participation and transparency between the stakeholders and the team. The stakeholders actively engage directly with the team, and to ensure a successful project, will need to create the backlog for each iteration of the project. They post artifacts in a public space so that expectations of the Health Care app are clear to everyone as the project advances.

## Task 3

Create a stakeholder management plan to handle the stakeholders’ concerns and input for the health-care app after it has been released to the field. For example, continuing strategies are needed to monetize the software most effectively and to achieve maximum market penetration.

|  |  |  |  |
| --- | --- | --- | --- |
| NAME | POWER/INTEREST | CURRENT ENGAGEMENT | POTENTIAL MANAGEMENT STRATEGIES |
| Team Green  Product Owner | High/High | Leading | Highly motivated and involved, management of this group will mostly involve other high power teams within Third Avenue to make sure this project stays grounded and stays on track with the goals for the company’s portfolio. |
| Eric  Lead Junior Programmer | Medium/High | Supportive | Eric is a core member in building this app. The project’s success correlates with his career. |
| Lia  *Junior Programmer* | Low/Medium | Neutral | Lia is working hard to build her resume as she works on this project. Her only concern is to make the app run to impress the team. |
| Brianna  *Marketing Representative* | Medium/High | Supportive | Brianna is excited about this project and wants to see it succeed for the benefit of the people with healthcare needs. |
| Jack  *Regulatory Manager of Third Avenu*e | High/Medium | Supportive | As the regulatory manager, Jack is highly involved in planning, directing and coordinating production activities of the organization. He needs to make sure this project is in compliance with regulations and standard operating procedures. |
| Kendra  *Quality Assurance Manager* | High/High | Leading | As a manager, Kendra is highly motivated to lead the project to success. She is confident that her expertise can execute the features expected for the app. |
| Aziz  *Quality Assurance Tester* | Low/Low | Resistant | Since the app’s features are so ambitious and there is not a comparable app on the market with each feature that this project aims for, a quality assurance tester may have some apprehensions to the scope of the app. Also, since Third Avenue does not have a health speciality and is pursuing this venture based on broadening its portfolio, he brings up that there may be significant gaps in the base knowledge for creating meaningful health features. |
| Barry  *Accounting Staff* | Low/Medium | Neutral | Accounting works closely with the management team and may share some of their concerns about the project staying within budget. However, since the project has the green light, he is more concerned about making sure he tracks the progress of the project and keeping each phase within the constraint of the budget. |
| Third Avenue Management | High/High | Resistant | The management team has occasionally expressed doubts about the team’s ability to work within the timeline and budget. |
| Users of the Healthcare app | Low/Low | Unaware | Older population is an interested audience for this app, and they expect specific user-friendly features. As long as the app does the job fast, the users are happy. |

## Task 4

Create an issue log for the project’s main activities. Recall that an issue log is a tool used to document, monitor, and track issues that need resolution.

**Issue Log**

Prepared by: Product Owners

Date: 7/11/2022

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Issue   # | Issue  Desc | Impact on Project | Date  Reported | Reported  By | Assigned  To | Priority | Due Date | Status | Comments |
| 1 | Need requirements categorized as mandatory and optional for MVP | Project cannot succeed without it | 7/15 | Eric | Product Owners | H | 7/19 | Closed | Completed in Part 2 |
| 2 | Need to clear the app for healthcare guidelines | The app cannot go public without compliance | 7/13 | Product Owners | Jack | H | 7/20 | Open | Collecting documents |
| 3 | Need to test run app for payment security | Highly required for financial trust from consumers | 7/16 | Brianna | Eric | H | 8/25 | Open | In the process of contracting with a hosting platform |
| 4 | Need budget progress reports to Third Avenue management after each Scrum | To monitor budget concerns for accounting and management | 7/11 | Third Avenue Managment team | Barry | H | After each Scrum | Open | Budget progression continuously monitored throughout project |
| 5 | Need to alphabetize medication list | Front end advantage | 7/16 | Lia | Lia | M | 8/16 | Closed | Completed |
| Etc. | | | | | | | | | |