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SE601 Assignment 1 Solution

Fall 2026

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Software Construction and Development — Fall 2026 | Total Marks: 20 | Due Date: 5 November 2026

Note about screenshots: Question 1 asks for screenshots of your own Asana board. A screenshot can only be real if it comes from your own Asana account, with your own Student ID in the project name. This sample shows the full written work and marks each place where your screenshot goes. Paste your own screenshots there before you submit.

Question 1 - Scrum Mini Sprint for Dr. Khan Dental Clinic (15 marks)

Dr. Khan runs a dental clinic with four treatment chairs. Patients phone the clinic every morning to book. The phone line is often busy. Appointments are written in a paper diary, so double bookings happen several times a week. Patients wait and chairs stay empty. Dr. Khan wants a simple system to book, view and cancel appointments. Our three student team will build a working trial of this system using Scrum. The trial must be ready to show by the end of the sprint.

a) Set up the project

Project name: Scrum-Your Student ID. Replace Your Student ID with your own VU Student ID. The board has five sections: Product Backlog, Sprint Backlog, In Progress, Testing and Done. The Scrum Team task holds the team roles.

Scrum Team task description: Product Owner: Hassan. Scrum Master: Fatima. Development Team: Hassan, Fatima and Omar. Replace these names with your own team members.

Why each person suits the role: Hassan suits Product Owner because he talks to Dr. Khan and understands what the clinic needs. Fatima suits Scrum Master because she runs the Daily Scrum and removes problems that block the team. The Development Team suits building and testing because all three members can code and test the trial together.

[Screenshot 1 goes here: the full board with the project name, and the open Scrum Team task. Paste your own Asana screenshot.]

b) Plan the Sprint

Sprint goal: A working trial that lets the clinic book, view and cancel appointments, ready to show Dr. Khan by the end of the sprint.

Product Backlog - user stories in priority order

No.	User story	Tag
1	As a patient, I can book an appointment.	High
2	As a receptionist, I can view all appointments for the day.	High
3	As a patient, I can cancel my appointment.	High
4	As a receptionist, I can see which treatment chairs are free.	High
5	As a patient, I receive a confirmation after booking.	Medium
6	As a receptionist, I can check a patient past visits.	Medium
7	As Dr. Khan, I can view the daily schedule of all four chairs.	Medium
8	As a patient, I can choose a preferred time slot.	Medium
9	As a receptionist, I can add a walk in patient.	Low
10	As Dr. Khan, I can see a weekly summary of bookings.	Low

Sprint Backlog - the 4 tasks picked for this sprint

Task	Subtasks	Due date
Book an appointment	1. Build the booking form. 2. Save the booking and show it in the list.	4 Nov 2026
View appointments	1. Build the day view list. 2. Sort the list by time.	4 Nov 2026
Cancel an appointment	1. Add a cancel button. 2. Free the chair after cancel.	5 Nov 2026
See free chairs	1. Show chair status on the screen. 2. Update status after each booking.	5 Nov 2026

Why these items: we picked the work the patient and the receptionist need first. Booking, viewing, cancelling and free chairs are the core of the trial. The Product Backlog holds all ideas in priority order. The Sprint Backlog holds only the few items the team picked for this sprint.

[Screenshot 2 goes here: the board after planning, and one open task showing its subtasks and due date. Paste your own Asana screenshot.]

c) Run the Daily Scrum and finish the Sprint

Day	Task moved	Daily Scrum comment
Day 1 - 3 Nov	Book an appointment: Sprint Backlog to In Progress	Plan: build the booking form and the appointment list.
Day 2 - 4 Nov	Book an appointment: In Progress to Testing	Done: booking form is ready. Plan: test it with sample data.
Day 3 - 5 Nov	Book an appointment: Testing to Done	Done: booking and viewing tested. Blockers: none. Plan: show the trial to Dr. Khan.

Day 3 new request: Dr. Khan asked for online rescheduling. We added a new task to the Product Backlog: Reschedule appointments online. Tag: High.

Decision on the reschedule task: this will go in the next sprint. The comment on the task says: Decision: this will go in the next sprint. The current sprint is fixed and the trial must be ready to show today. We will plan it first in the next sprint.

Why this decision is right: in Scrum the sprint scope stays fixed once the sprint starts. New work goes to the Product Backlog. The Product Owner orders it and the team takes it in the next sprint. This protects the sprint goal and keeps the trial ready on time.

Sprint Review task: Completed: book an appointment, view appointments, cancel an appointment, see free chairs. Not completed: reschedule online and confirmation messages. Expected feedback from Dr. Khan: he will check if booking is simple for patients and he will ask for reschedule first.

Sprint Retrospective task: Two things that went well: daily scrums kept everyone updated, and small tasks moved fast from In Progress to Done. Two things to improve: testing took longer than planned, and subtask time was not estimated well, so next time we will estimate each subtask before the sprint starts.

[Screenshot 3 goes here: the board on three different days, the reschedule task with the comment, the activity of one task showing dates and times, and both Sprint Review and Sprint Retrospective tasks. Paste your own Asana screenshots.]

Question 2 - Pick the model for each team (5 marks)

Team Alpha: Waterfall. The contract is fixed price and the scope is agreed in advance. The regulator needs a complete signed off set of requirements and design documents before any coding begins. The board approves each stage before the next one starts. These are the marks of Waterfall. Each stage finishes before the next begins.

Team Beta: Extreme Programming (XP). Developers work in pairs on the most critical code. The team follows a shared coding standard. A new release goes to customers every week. The client sits with the team every day to answer questions. Pair programming, a shared coding standard, small releases and an on site customer are the marks of XP.

One weakness of Waterfall: once a stage is finished it is hard and costly to go back and change it. If the client finds a problem late, fixing it costs a lot of time and money. Is Waterfall a good choice for a large complex project? Only if the requirements are fully known and will not change. Large complex projects usually have changing requirements. So Waterfall is not a good choice for them.