



UTS Mata Kuliah Rekayasa Perangkat Lunak (KOM331)
Program Studi S1 Ilmu Komputer FMIPA IPB
Semester Genap 2020/2021
Kamis, 8 April 2021

Ketentuan ujian:

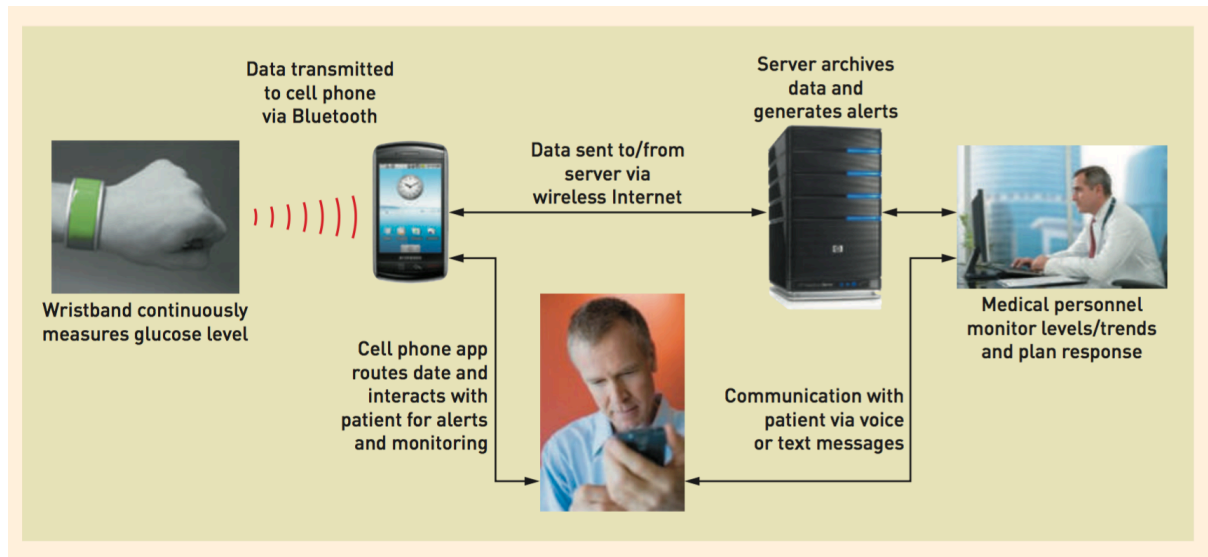
- a. Ujian *Close Book*, Kejujuran diutamakan dalam menyelesaikan ujian ini.
- b. Dilaksanakan secara *online*
- c. Jawaban dikumpulkan dalam bentuk *softcopy* yang diunggah melalui LMS dengan ketentuan sbb :
 - file format pdf, maks ukuran 10 MB.
 - Format nama file: NIM_Nama_lengkap.pdf.
 - Ujian berlangsung selama 3 jam , mulai jam 8.00, *Dealine* submit jam 11.00

Soal :

1. Jawablah pertanyaan dibawah ini:
 - a. (5) Jelaskan tujuan *software engineering* !
 - b. (5) Jelaskan *Software Development Life Cycle* (SDLC)
 - c. (5) Jelaskan apa yang dimaksud dengan *Embedded Software* !
2. (10) Jelaskan perbedaan antara pengembangan perangkat lunak *Extreme Programming* (XP), *Scrum*, dan *Lean Development*?

Studi Kasus

Case: Sandia Medical Devices



Medical monitoring technology has advanced significantly in the last decade. Monitoring that once required a visit to a health-care facility can now be performed by devices located in a patient's home or carried or worn at all times. Examples include glucose level (blood sugar), pulse, blood pressure, and electro- cardiogram (EKG). Measurements can be transmitted via telephone, Internet connection, and wireless data transmission standards, such as Bluetooth. A particularly powerful technology combination is a wearable device that records data periodically or continuously and transmits it via Bluetooth to a cell phone app. The cell phone app can inform the patient of problems and can automatically transmit data and alerts to a central monitoring application (see Figure above).

ong-term complications as vision, circulatory, and kidney problems.

Sandia Medical Devices (SMD), an Albuquerque manufacturer of portable and wearable medical monitoring devices, has developed a glucose monitor embedded in a wristband. The device is powered by body heat and senses glucose levels from minute quantities of perspiration. SMD is developing the Real-Time Glucose Monitoring (RTGM) device in partnership with New Mexico Health Systems (NMHS), a comprehensive health delivery service with patients through- out New Mexico, The system's vision statement reads as follows:

RTGM will enable patients and their healthcare providers to continuously monitor glucose levels, immediately identify short- and long-term medical dangers, and rapidly

respond to those dangers in medically appropriate ways.

SMD will develop the initial prototype software for smartphones with Bluetooth capability running the Google Android operating system. If successful,

NMHS and its patients will have free use of the software and SMD will resell the software to other health systems worldwide.

Dengan menggunakan kasus diatas, jawablah pertanyaan-pertanyaan ini :

3. (5) Sebutkan stakeholdernya.
4. (15) Definisikan *primary functional requirement* dengan menggunakan teknik *User goal* atau *Event decomposition*. Sebutkan teknik mana yang anda pilih !
5. (10) Definisikan setiap *primary functional* (No.4)
6. (20) Buatlah *use case diagram*, sesuai *primary functional* diatas.
7. (20) Jelaskan tujuannya menggunakan CRUD teknik dalam tahapan analisis. buatlah CRUD teknik untuk kasus diatas.
8. (5) Definisikan *nonfunctional requirements* untuk kasus diatas.

Kasus ini diambil dari *Systems Analysis and Design in a Changing World, Seventh Edition John W. Satzinger, Robert B. Jackson, Stephen D. Burd*, 6th