SOFTWARE ENGINEERING

PROJECT PLANNING

BLOOD BANK MANAGEMENT

Question 1 and 2

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PES2UG20CS432

Question 3 and 5

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PES2UG20CS460

Question 4

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PES2UG20CS430

Question 6

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Question

1: Identify the lifecycle to be followed for the execution of your project and justify why you have chosen the model. (Use Degree of certainty)

Software Development Process:

Life Cycle Used to develop this Project Life cycle used -- SDLC

Systems Development Life Cycle (SDLC), or Software Development Life Cycle, in systems engineering and software engineering relates to the process of developing systems, and the models and methodologies, that people use to develop bp these systems, generally computer or information systems.

In software engineering this SDLC concept is developed into all kinds of software development methodologies, the framework that is used to structure, plan, and control the process of dev

Overview

Systems Development Life Cycle (SDLC) is any logical process used by a systems analyst to develop an information system, including requirements, validation, training, and user ownership. An SDLC should result in a high quality system that meets or exceeds customer expectations, within time and cost estimates, works effectively and efficiently in the current and planned Information Technology infrastructure, and is cheap to maintain and cost effective to enhance

Computer systems have become more complex and usually (especially with the advent of Service-Oriented Architecture) link multiple traditional systems often supplied by different software vendors. To manage this, a number of system development life cycle (SDLC) models have been created: waterfall, fountain, spiral, build and fix, rapid prototyping. incremental, and synchronize and stabilize. Although in the academic sense, SDLC can be used to refer to various models,

SDLC is typically used to refer to a waterfall methodology

In project management a project has both a life cycle and a "systems development life cycle" during which a number of typical activities occur. The project life cycle (PLC) encompasses all the activities of the project, while the systems development life cycle (SDLC) is focused on accomplishing the product requirements.

2: Identify the tools which you want to use through out the lifecycle like planning tool, design tool, version control, development tool, bug tracking, testing tool.

Requirement Gathering Requirement gathering is the first step for this methodology for the project. On this phase, all requirements are gathered together so that all of the needed requirement can be stated, analyse and process. All the requirements will be analyse if it is suitable to develop the system. Also on this phase, all the materials that are required have been prepared.

I. Hardware

a) Personal Computer (PC)

II. Software

a) Google Chrome

b) Notepad ++

c) Microsoft Office

d) MySQL server Workbench

2.Design

This is the Second stage that used so that the flow of the project will be successful. After gather all the important information related to the project, a framework is develop to show the flow of the system so that this system flow will be easily understand. In this phase, a design of context diagram, data flow diagram (DFD) and entityrelationship diagram (ERD) is used to show the flow of the system specifically.

3 Implementation

After all information has been gathered and the design has been created, we will start to develop the system to make sure that it is able to use by different user. Then, will the dietary suggestion system suggest the best diet plan for the user. 3.3.4 Testing At this phase, the system will be tested. If there is any error occur or detected, it must be solved at this phase and if there any changes made, it need to be re-implement back to design phase to make sure that the flow of the system is not affected.

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5 Deployment

After the system is free from error and bugs, the system will then be deployed for market. The testing that takes place will approve the validity of the system for marketing. By then, it is mandatory to monitor the system time to time to make sure that if any changes had to be done, it is noticed.

3: Determine all the deliverables and categorise them as reuse/build components and justify the same.

DELIVERABLES(BUILD)

1.Sign up page for new users

2.Search for Donetors

3.Checking availability of slots

4.Booking a slot for their donation

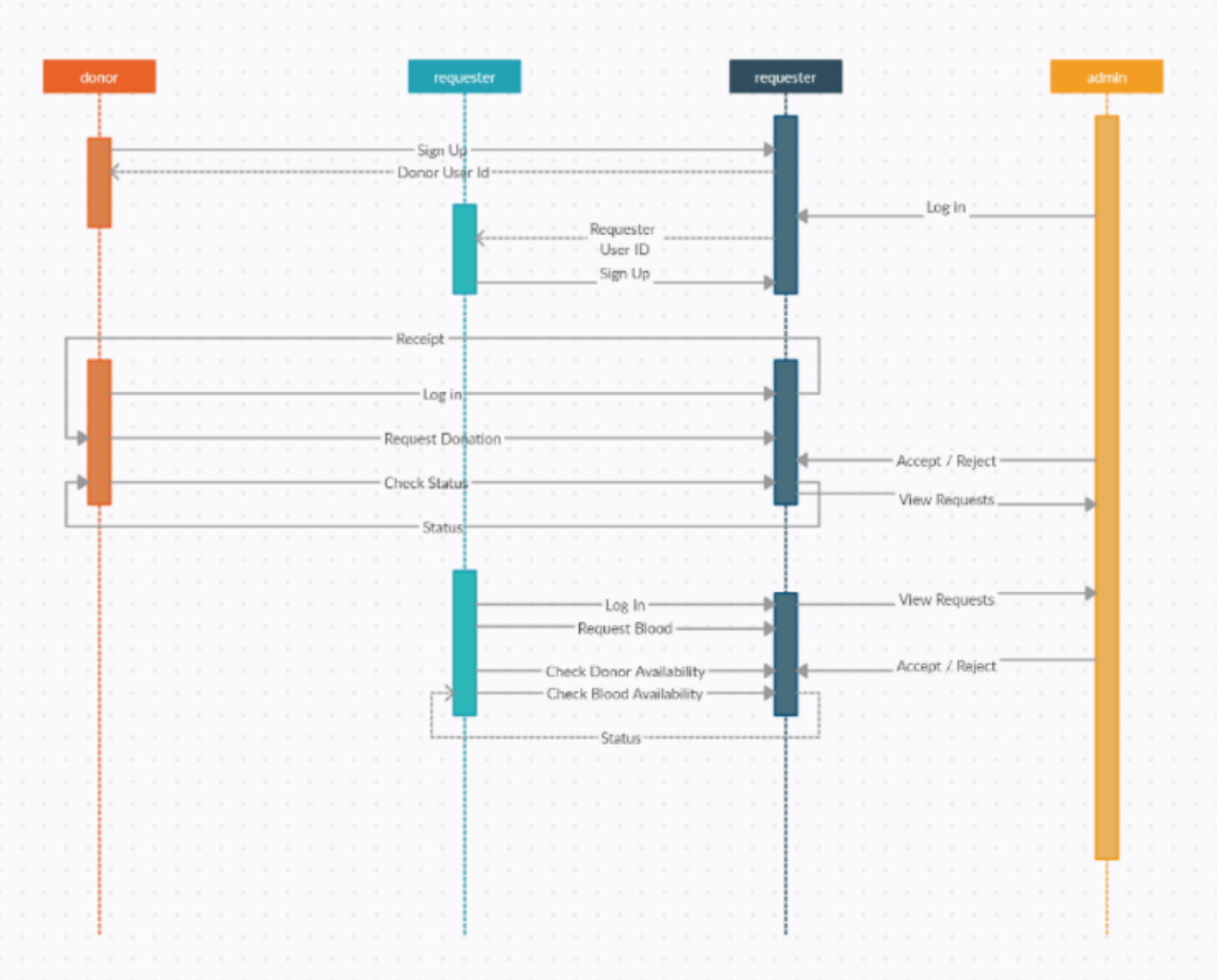
5.Display the availabilityof blood group

DELIVERABLES(REUSE)

1. Login page for existing registered

2. Payment gateway

4: Create a WBS for the entire functionalities in detail.



5: Do a rough estimate of effort required to accomplish each task in terms of person months. (Use BASIC COCOMO)

Suppose a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three model i.e., organic, semi-detached & embedded.

Solution: The basic COCOMO equation takes the form:

$$Effort = a_1*(KLOC)^{a_2} PM$$
$$T_{dev} = b_1*(efforts)^{b_2} Months$$

Estimated Size of project= 400 KLOC

(i)Organic Mode

$$E = 2.4 * (400)^{1.05} = 1295.31 PM$$
$$D = 2.5 * (1295.31)^{0.38} = 38.07 PM$$

(ii)Semidetached Mode

$$E = 3.0 * (400)^{1.12} = 2462.79 PM$$
$$D = 2.5 * (2462.79)^{0.35} = 38.45 PM$$

(iii) Embedded Mode

$$E = 3.6 * (400)^{1.20} = 4772.81 PM$$
$$D = 2.5 * (4772.8)^{0.32} = 38 PM$$

Example2: A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the Effort, development time, average staff size, and productivity of the project.

Solution: The semidetached mode is the most appropriate mode, keeping in view the size, schedule and experience of development time.

Hence $E = 3.0(200)^{1.12} = 1133.12 PM$

$$D = 2.5(1133.12)^{0.35} = 29.3 PM$$

$$\text{Average Staff Size (SS)} = \frac{E}{D} \text{ Persons}$$

$$= \frac{1133.12}{29.3} = 38.67 \text{ Persons}$$

$$\text{Productivity} = \frac{KLOC}{E} = \frac{200}{1133.12} = 0.1765 \text{ KLOC/PM}$$

P = 176 LOC/PM

6: Create theGantt Chart for scheduling using any tool.