|  |  |  |  |
| --- | --- | --- | --- |
| Jan-Carlo Aldana  [Jaldana2013@fau.edu](mailto:Jaldana2013@fau.edu)  Z23242372 | Ricardo Arteaga  [rarteaga2012@fau.edu](mailto:rarteaga2012@fau.edu)  Z23223519 | Stanley Chouloute  [Schoulo1@fau.edu](mailto:Schoulo1@fau.edu)  Z23055824 | Jacob Gaskill  [jgaskill2013@fau.edu](mailto:jgaskill2013@fau.edu)  Z23236263 |
| Richard Karl  [rkarl2014@fau.edu](mailto:rkarl2014@fau.edu)  Z23312398 | Michael Merani  [mmerani2014@fau.edu](mailto:mmerani2014@fau.edu)  Z23323072 | Anthony Reyes  [anthonyreyes2012@fau.edu](mailto:anthonyreyes2012@fau.edu)  Z23222217 |  |

**Principles of SW Engineering – Dr. Bullard—Homework#4 (Chapter 4)**

**Total Points: 100 (10 points each)**

**This is your first GROUP ASSIGNMENT. Please following the instructions below:**

1. **Only one assignment should be turned in under the team leader’s name. The team leader should include the names of all the members, their email addresses and z#’s.**
2. **Include each question with its answer**
3. **Due before Wednesday at 10:00 P.M., July 6, 2016**
4. **No late assignments will be accepted!**
5. **Please be neat!**

**1. Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description.**

1. In XP requirements are expressed as scenarios which are implemented directly as a series of tasks. This involves practice through incremental planning, small releases, test-first development and etc.

The Advantages are

* Scenarios understand most of the common operation and it is easy to identify what type of operation that is required in the user’s stories.
* The customers focus in the scenario card and increase the chance that the software produced will meet user needs. By eliminating repetitive scenarios you can also eliminate certain tasks that can be a burden.

The Disadvantages are

* Using scenarios on a card can bring to a function overlooked or omission which can lead to a huge time-consuming process to complete the system.
* Two different scenarios can lead to the same function as it will conflict with other.

**2. Identify and briefly describe four types of requirements that may be defined for a computer-based system.**

Types of requirements for a computer based system: Generally, system requirements are included to communicate the functions that the system should provide. And every computer based systems consists of many requirements.

They are:

**1. User requirements:**

The requirements are the statements in a natural language plus diagrams of the services the system provides and its operational constraints.

**2. System requirements:**

A structured document setting out detailed description of the system’s functions, services and operational constraints. Define what should be implemented. It may be part of a contract between client and contactor.

**3. Functional requirements:**

These are the statement of the services the system should provide, how the system should react to particular input and how the system should behave in particular situation.

**4. Nonfunctional Requirements:**

Constraints on the services or functions offered by the system such as timing constraints, constraints on the development process, standards, etc. often these are applied to the system as a whole rather than individual features or services.

**3. Who should be involved in a requirements review? Draw a process model showing how a requirements review might be organized.**

The requirements are analyzed systematically by a team of reviewers who check for errors and inconsistencies. This group of people read and analyze the requirements, look for problems, meet and discuss the problems, agree on action to address problems.

Stakeholders overseeing the Business Requirements

Stakeholders overseeing the System Requirements

Stakeholders within the Solution team

Stakeholders receiving the Solution

Stakeholders in the Supply Chain

**4. Using the technique suggested here, where natural language descriptions are presented in a standard format, write plausible user requirements for the following functions:**

1. **An unattended petrol (gas) pump system that includes a credit card reader. The customer swipes the card through the reader then specifies the amount of fuel required. The fuel is delivered and the customer’s account debited.**

-The card transaction should be completed within 5 seconds.  
-The user interface should be easy to navigate and use.  
-The user should be able to switch between petrol grades instantly.  
-The display should output real-time amount of gallons already pumped.  
-The display should be bright during night time hours.  
-The nozzle should be able to sense when the fuel tank is overflowing  
and stop pumping.

1. **The cash-dispensing function in a bank ATM.**

-The user should be able to pick his/her denominations.  
-The system should be touch screen.  
-The user interface should be intuitive.  
-The ATM should audibly alert the user when transactions are completed  
and the card is left in the reader.

1. **The spelling-check and correcting function in a word processor.**

The spell checking and correcting function should be a prompt provided whenever the system finds a word that is not within its dictionary.

Once the system finds an undefined word, the system should provide the following functions:

1. The system should underline the word in question, making it visible to the user.

2. The system should allow the user to ignore a specific instance of the error or ignore all instances of this error.

3. The system should provide suggestions of other similarly spelled words within its dictionary.

4. The system should allow the user to add the undefined word to the system's dictionary, if the user chooses.

**5. List and discuss four ways to elicit requirements from a client.**

List and discuss four ways to elicit requirements from a client.

 Discovery

You should be interacting with stakeholders to discover their requirements. You should do some brainstorming with them to find out requirements because they usually won’t know the requirements. Domain requirements are also discovered at this stage.

Classification and organisation

Groups related requirements and organises them into coherent clusters. Host a focus group meeting to gather ideas, determine opinions, and expose feelings about a product, service, problem, or opportunity.

Prioritisation and negotiation

Prioritising requirements and resolving requirements conflicts. Make sure that all task are prioritized in a fashion where the most important processes get the most time.

Specification

Requirements are documented and input into the next round of the spiral. You should document how the process currently works, not to offer solutions, critiques, or judgment about the effectiveness of the current process

**6. Suggest how an engineer responsible for drawing up a system requirements specification might keep track of the relationships between functional and non-functional requirements.**

An engineer responsible for keeping track of the relaonship between funconal and non-funconal

requirements could group the requirements by topic and placing the funconal/non-funconal

requirements appropriately. Another way an engineer could keep track of the funconal/non-funconal

requirements is by using diagrams when creang this document to help idenfy relaonships between

the requirements or to separate them accordingly

An engineer responsible for keeping track of the relaonship between funconal and non-funconal

requirements could group the requirements by topic and placing the funconal/non-funconal

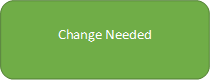
requirements appropriately. Another way an engineer could keep track of the funconal/non-funconal

requirements is by using diagrams when creang this document to help idenfy relaonships between

the requirements or to separate them accordingly

An engineer responsible for keeping track of the relationship between functional and non-functional requirements could group the requirements by topic and placing the functional/non-functional requirements appropriately. Another way an engineer could keep track of the functional/non-functional requirements is by using diagrams when creating this document to help identify relationships between the requirements or to separate them accordingly

**7. When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Suggest a model of a process for making these modifications that will ensure that the requirements document and the system implementation do not become inconsistent.**

****

Change analysis

Emergency change needed

Normal change procedure

Resubmit change for analysis

No

Yes

Change design and code if need

Closed change

Emergency change needed program & modules

Changed code & module & resubmit

No

Yes

**8. Define all the stakeholders for your project (software system you are developing).**

Project Leader – Distribute project task to team members, monitor the pace of development and watches over team member, responsible for system to be delivered on time.

Technical Writer – creates the requirement documentation, Writes the report and does the research

Web Developer – Develops the website structure and implements functionality so that the system satisfy the users and system requirement, creates database table to store users information.

Mobile Application Developer – develops the code structure and mainframe for mobile devices app, implement function so the mobile application satisfy the users and system requirement

Graphics Designer – Design the aesthetic of the website and mobile application,

Testers – tests the systems to see if the app/ website meets user requirement, ensure that the system is suitable for the use of the consumers

**9. Using one of the formats discussed in Chapter 4, write all the user requirements for your project.**

The user shall be able to sign up/ register for the app

The user shall be able to protect their personal information

The user shall be able to login to their own account to have access to all the functions the app provides

The user shall be able to receive email notifications from registering with email

The user shall be able to filter distance, city and etc. to their needs

The user shall be able to search for specific things by entering keywords

The user shall be able to upload and store resumes

The user shall be able to apply for a volunteer position in one simple click

The user shall be able to view the status of the volunteer position they applied for (In Progress, Interview Required, Approve, or Declined)

The user shall be able to bookmark volunteer position that they may be interested, and be notified that the position has been taken.

**10. Using one of the formats discussed in Chapter 4, write all the system requirements that correspond to the user requirements listed in question 9 above.**

The system will create a new entry in the database table, and fill in the field with the information of the new user

The system will encrypt all of the users’ personal information before it is enter into the database table

The system will check if the login information matches any of the login information on the database table, and will only allow access to the app function to users if a match has been found and the login is successful.

The system will be able to automatically send emails when new service becomes available if the user accepts.

The system will be able to filter out based on what the user asked as in miles, county and etc.

The system will be able to auto suggest and perform a search based on user inputs.

The system will create a unique name for the file to be uploaded and it will store the upload in a file and the name in the database table with a reference to the user that uploaded the file.

The system will read the id of the button that the user click and it will send all off the require information to the organization related to the id number.

The system will create a unique application number when the user apply for a volunteer position, it will upload the application number into the In Progress database table, the system will read the decision of the organization and from there it will move the application number to either the Interview Required, Approve, or Declined database table depending on the organization decision.

The system will read the id of the button that the user click and it will send it to the bookmarked database table with a reference to the user, if the system recognizes that the volunteer position related to that id has been taken it will delete the id number from bookmarked database table and it will notify any user that have been reference by that id number.