

Software Engineering – 01GSP

Books or notes are **not** allowed.

Write only on these sheets. **Concise** and **readable** answers please.

Surname, name, matricola _____

1-Write an example of functional requirement

2-Write an example of non functional requirement

3-a Model with a class diagram the following software system: Voting System

The voting system supports voting procedures with answer yes - no. The system should run on a PC and support voting procedures on one site only. The site is characterized by a number of people having the right to vote. Each person is characterized by a code (social security number), name, surname, PIN (Personal Identification Number).

The system should provide the following functions:

- ◆ Support voting for a person. The system should control that the person has the right to vote in the site, and has not already voted. Identification of a person shall be done via social security number and PIN.
- ◆ Keep track of votes, provide final results of the vote, provide partial results of the vote, provide percentage of people having voted vs. total number of potential voters.

3-b Enrich the model of the voting system with use case diagram. At least two actors are envisaged: voter and administrator.

3-c Enrich the model of the voting system with one scenario describing a successful voting procedure

Scenario name:

Precondition: person has right to vote and not voted before

Step	Description
1	Identify person
2	Search person in list of voters
	Check if already voted
	Ask vote and record it

Postcondition:

Person is tagged 'hasvoted'

Number of votes incremented according to vote

4- To assemble a musical CD for a certain rock band the following is available:

-txt file describing the CD, in English

-txt file describing the CD, in Italian

-jpg cover, in English

-jpg cover in Italian

-6 mp3 files with musical tracks

From these elements different versions of the CD are assembled and sold: a long version (6 tracks) and a short version (2 tracks), an English version and an Italian version.

List the configuration items:

__all files (10 files, 2 txt, 2 jpg, 6 mp3)

Write one possible baseline:

English version short: madeof txt file in English, jpg cover in English, two musical files

or

English version long: madeof txt file in english, jpg cover in italian, six musical files

or

Italian version short: madeof txt file in italian, jpg cover in English, two musical files

or

Italian version long: madeof txt file in italian, jpg cover in italian, six musical files

5-List the activities of an inspection process

6-Define fault and failure, underlining the difference

7-What is the difference between testing and debugging?

8-What is the definition of software reliability?

9-Define black box tests for the following function

Una funzione converte una sequenza di caratteri in un numero intero. La sequenza può cominciare con un – (numero negativo). L'intero rappresentato dalla sequenza deve essere compreso tra minint e maxint (minint = -32768 maxint = 32767).

La funzione deve segnalare errore se la sequenza non è ammessa.

int convert(string s)

“1” → “ 1” → 1

“1234” → 1234

“1234567” → error

“99999” → error

“12ff99” → error

Criterion	Valid class	Invalid class	Boundary Condition