



Information systems

01PDWOV 20210224 Exam



Only questions

Informazione

Scholarship management

Politecnico di Torino offers scholarships, periods of time in which a student performs a defined job for a defined amount of money (ex. two months, 1000 euro per month).

Scholarships are managed by a dedicated office (UB, Ufficio Borse), and are subject to rules defined both at university level and by national laws. For instance, scholarships cannot be attributed directly, but must be allocated after a public competition (concorso).

AS IS process

A professor, who must be employed by Polito, and who is part of a certain Department, decides to offer a scholarship. She must fill in a scholarship request (MS Word document) containing: title of the scholarship, description of the activities and results to be performed by the winner; duration (must be between 1 and 6 months); amount paid (must be between 500 and 1500 per month); level of education required (minimum bachelor degree, maximum PhD degree), type of education (ex mechanical engineering, computer engineering, etc). Further, she must indicate the fund that will pay the scholarship. (A fund is an amount of money to be spent for research activities. A fund is managed by the Department the professor belongs to, and is allocated to the professor as a result of winning national or European grants). Finally, she must propose the names of 3 professors (all belonging to Polito) that will compose the evaluation board to decide the winner of the scholarship.

The document is printed and signed on paper. Then the document is scanned and sent by email to the department director. The director checks that the fund indicated exists and has enough availability, if yes approves the request and sends it by email to UB. (By law the professor is not owner of any funds, funds are owned by the University, so the director's approval is needed).

The UB receives the documents, checks that the other rules (duration, amount of money per month, etc) are satisfied. If yes the call for the scholarship is published on the Polito web site. The call is published for 3 weeks. Within this period whoever is interested can send an application.

Applications are sent on the web site. Applications contain identity of the applicant, address, email, CV and attached proofs of the qualifications (ex degrees, grades per exam etc).

At the expiration of the application period UB checks the applications, possibly excluding some of them for formal problems. UB sends by email the applications (including attached documents) to the three professors who compose the evaluation board. The professors analyze the applications and decide a winner. They must complete an evaluation report, containing the grades allocated to each candidate on specific criteria (education, CV, suitability for the job). They print and sign the report and send it to UB. UB publishes the winner (on the same web site used for applications), and passes the file to HR office that will start the administrative part regarding enrollment and payments. (The part managed by HR is not relevant here).

TO BE process

The overall process does not change. However, email is avoided in all steps. A web site is set up to manage the initial part of the process (scholarship request), and the final one (evaluation report)

All signatures are digital (using a service for digital signatures available to all employees of Politecnico).

In the following *model the TO BE situation*.

Domanda 1

Completo

Punteggio max.: 1,00

List roles or organizational units involved

Domanda 2

Completo

Punteggio max.: 1,00

List the key processes. For each process define name, input, output, description

Domanda 3

Completo

Punteggio max.: 1,00

Describe key concepts and their relationships using UML class diagram

Basic plantuml syntax (// introduces comments), access www.plantuml.com for rendering, do not use 'ALT - key' sequences

```
Class A {
    attribute1
    attribute2
}

Class B {
    attribute3
    attribute4
}

Class C
Class D
Class E

A -- B
A "many"--"1" B
A -- B : relationName

C <|-- D
C *-- D      // composition or black diamond
C o-- D      // aggregation or hollow diamond

C "many roleName1" -- "1 roleName2" E      // role names

(A,B) -- C      // C is association class

note "this is a note" as N1    // notes
N1 .. C
```

Domanda 4

Completo

Punteggio max.: 1,00

Describe the hardware / software architecture of the system using UML deployment diagram

Basic plantUml syntax, www.plantuml.com for rendering, dont use 'ALT - key' sequences

node N1

node N2

artifact A1

artifact A2

N1 -- N2 : label

N1 -- A1 : label2

Domanda 5

Completo

Punteggio max.: 1,00

Define at least one business rule for the process(es)

Domanda 6

Completo

Punteggio max.: 1,00

Define the KPIs, considering these high level business goals (or CSF),

CSF1 provide maximum convenience for Polito employees, CSF2 decrease cost of scholarship management

If needed, define also indicators that are not KPIs.

Domanda 7

Completo

Punteggio max.: 1,00

Compare the previous and the current situation, using the KPIs defined above

(add rows as needed)

Comparison

KPI name	AS IS	TO BE
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Domanda 8

Completo

Punteggio max.: 1,00

Considering the insurance company and the infrastructure it has to build or acquire for the TO BE, define the software functions needed

(Add rows as needed)

Software functions

Process / activity	Software functions needed
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Domanda 9

Completo

Punteggio max.: 1,00

Considering the comparison in question 7, summarize pros and cons for the actors in the TO BE situation

(add actors / rows as needed)

Comparison

Actor name	PROS	CONS
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Domanda 10

Completo

Punteggio max.: 1,00

Lessons at Polito are supported by BigBlueButton, an open source product, that is installed on a number of computers property of Polito and installed in Polito premises. Frame this case in terms of the outsourcing dimensions.

Domanda 11

Completo

Punteggio max.: 1,00

What is the meaning of 'economy of scope'? Provide an example

Domanda 12

Completo

Punteggio max.: 1,00

What are the main points of Agency theory?

Domanda 13

Completo

Punteggio max.: 1,00

Company Music is an ecommerce company that sells vinyl records. Shipping of parcels is outsourced to another company. Propose a few SLAs to allow Music monitor the outsourcing relation.

Domanda 14

Completo

Punteggio max.: 1,00

List the possible Customer relationship modes according to the Business Model Canvas
