**Intelligent Systems**

**Exercise 12. Representation in   
First-Order Predicate Logic**



# Exercise description

The objective of this exercise is to apply the concepts of knowledge representation to translate English statements into First-order Predicate Logic sentences.

**Team members**

Write the student id, name, and campus of each member in a different line.

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**REPRESENTATION FOL**

1. Translate the following sentences from English to First-Order Predicate Logic sentences using adequate vocabularies of predicates (show the interpretation of each used constant, predicate and/or function:
2. Peter does not play football.

~PlayFootball(Peter)

1. Frank and Louis are cousins.

AreCousins(Frank, Louis)

1. Neither Maria nor Lupita is a nurse.

~(isNurse(Maria) ^ isNurse(Lupita))

1. Every visitor is either Chinese or Japanese.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xVisitor(x) 🡪(isChinese(x) v isJapanese(x))

1. God is bigger than all my problems.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xProblems(x) 🡪 isBigger(God, x)

1. Every coyote chases some roadrunner.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xCoyote(x) [∃](https://en.wikipedia.org/wiki/%E2%88%83)yRoadrunner(y)Chases(x,y)

1. Some Tigres fans are friends of some Rayados fans.

[∃](https://en.wikipedia.org/wiki/%E2%88%83)xTigresFans(X)[∃](https://en.wikipedia.org/wiki/%E2%88%83)yRayadosFans(y) AreFriends(x,y)

1. All the girls between George and John are taller than Lupita.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xGirlsBetweenGeorgeAndJohn(x) 🡪 TallerThan(x, Lupita)

1. Every student takes at least one course.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xStudent(x)[∃](https://en.wikipedia.org/wiki/%E2%88%83)yCourse(y), Takes(x,y)

1. Students who do class exercises also pass the course.

[∀](https://en.wikipedia.org/wiki/%E2%88%80)xStudentsWhoDoClassxercises(x) 🡪PassTheCourse(x)