

Solution Introduction to Programming Languages

Instructions and remarks

- Exercises are given every week on the PL page of the SCG website (<http://scg.unibe.ch/teaching/pl>)
- Solutions to each assignment must be sent to **mohammadreza.hazhirpasand@inf.unibe.ch**
- The solutions of the assignments are to be delivered before every Thursday at 5 PM. Solutions handed in later than the specified time will not be accepted. In case of serious reasons send an e-mail to **mohammadreza.hazhirpasand@inf.unibe.ch**

Exercise (5 points)

Answer the following questions about programming languages:

- What is a programming language? (1 pts)

Answer:

According to Louden's definition, "A programming language is a notational system for describing computation in a machine-readable and human-readable form"

- What is the difference between functional and logic programming style? provide an programming language as an example for each type. (2 pts)

Answer:

Functional style focuses mostly on functions and with pure functional style there is no state change. Functional programming is declarative rather than imperative. One can consider functions as something that have input and output characteristics. Such style of programming is suitable for reasoning. Haskell is an example of functional programming.

In logic programming style, the program is composed of facts and rules and largely focuses on formal logic. Logic programming languages are suitable for searchrelated problems. Prolog is an example of logic programming.

- What is SQL and how can one print "hello world" in SQL? (1.5 pts)

Answer:

SQL is a domain-specific language used in programming and designed for managing data stored in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).

Answer:

*It can be done via various ways but a simple way is to use **select 'hello world'***

- What are the key innovations of the object oriented languages? (0.5 pts)

Answer:

Encapsulation and inheritance