

Solutions TMM4230 Technology for Integrated Operations and Semantic Web – Spring 2008

Send questions to ois@ntnu.no and hansolno@stud.ntnu.no.

PART 1 Microsoft .NET and C#

1.1 a

1.2 d

1.3 b

1.4 c

1.5 c

1.6 b

1.7

Inside try IOException caught Inside finally After try

Comment: The most specific catch block is executed. Finally is always executed.

1.8 d

Comment: All managed .NET languages are compiled into MSIL in assemblies, and can be referenced and used in any direction (the assemblies should preferably have CLS compliance).

1.9 c

1.10

Inside if After if

Comment: After evaluating `i == 4` (which is true), short circuit evaluation will find that the OR expression is true regardless of the value returned from `Evaluate()` and skip calling it.

1.11

```
public string Name  
{  
    get { return name; }  
}
```

Comment: Line breaks are not important, but the code needs to be equal to the code above. The `readonly` keyword can not be used for read only properties, only for fields.

1.12 b.

Comment: In C#, the `==` operator is overloaded to compare the string contents, not only the pointer to the string (as is the case in Java).

PART 2 Windows Communication Foundation

2.1 d

2.2 a

2.3 b

Comment: XML: Data format, SOAP: Simple Object Access Protocol, WSDL: Web

Service Description Language.

2.4 d

2.5

3: [ServiceContract]

6: [OperationContract]

10: [DataContract]

13: [DataMember]

15: [DataMember]

Comment: The brackets [] must be included as shown above. We do accept

3: [System.ServiceModel.ServiceContract]

6: [System.ServiceModel.OperationContract]

10: [System.Runtime.Serialization.DataContract]

13 and 15: [System.Runtime.Serialization.DataMember]

as well, since the task do not say that

using System.ServiceModel

using System.Runtime.Serialization

is in place.

2.6 b

2.7 d

2.8 e

2.9 a

PART 3 Windows Workflow Foundation

3.1 Sequential (sekvensiell) and State-Machine (tilstandsmaskin)

3.2 f

3.3 b

3.4 a, d, e

3.5 b, c, e

3.6 a

3.7 d

PART 4 Real Time Communication

4.1 a

4.2 a, b, c, d

4.3 b

4.4 d

Comment: In voice and video applications, it is often not desirable to retransmit a package that does not make it to its destination; because of the extra delay this would give (the data is not interesting after such a delay in a voice conversation, for instance). TCP retransmits packages; therefore d) is correct.

Part 5. Introduction to the Semantic Web

- 5.1 b)
- 5.2 d)
- 5.3 d)
- 5.4 a)
- 5.5 d)

Part 6. Ontology languages

- 6.1 c)
- 6.2 a)
- 6.3 a)
- 6.4 b)
- 6.5 c)

Part 7. OWL Modeling

- 7.1 d)
- 7.2 b)
- 7.3 b)
- 7.4 d)

7.5 *The complementOf construct selects all individuals from the domain of discourse that do not belong to a certain class.*

The disjointWith construct ensures that an individual being is a member of one class cannot simultaneously be an instance of a specified other class

- 7.6 e)
- 7.7 a)
- 7.8 b)

7.9 *An NTNU skier is a skier that only has other skiers as friends and studies at NTNU*

7.10 $A \sqcap B \sqsubseteq \perp$

Part 8. Abstract OWL Syntax

8.1 *Debtor is a subclass of person that must have taken at least one loan.*

8.2 c)

8.3

Class: NTNU_skier

SubClassOf:

Skier AND

hasFriend ONLY Skier AND

studiesAt VALUE NTNU

8.4

Class: Skiing_resort

SubClassOf:
Rural_area AND
hasActivity SOME Skiing AND
hasLifts MIN 2

8.5 c)

Part 9. Ontology Engineering

9.1 b)

9.2 a)

9.3 d)