SFDV4001 Object Oriented Programming with C++

Comparative Case Study with Java

In this case study you will compare C++ with Java to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in Java and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in Java. The Java example should be a translation of the C++ example.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on 17 December 2013 in the lab.
Submit the presentation slides and all the demo code in C++ and Java which you would use during the presentation.
In this case study you will compare C# with C++ to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in C# and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in C#. The C# examples should be a translation of the C++ examples.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on 17 December 2013 in the lab.
Submit the presentation slides and all the demo code in C# and C++ which you would use during the presentation.
SFDV4001 Object Oriented Programming with C++

Comparative Case Study with the D language

In this case study you will compare C++ with D to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in D and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in D. The D example should be a translation of the C++ example.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on **17 December 2013** in the lab.
Submit the presentation slides and all the demo code in C++ and D which you would use during the presentation.
Comparative Case Study with Objective-C

In this case study you will compare C++ with Objective-C to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in Objective-C and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in Objective-C. The Objective-C example should be a translation of the C++ example.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on 17 December 2013 in the lab.
Submit the presentation slides and all the demo code in C++ and Objective-C which you would use during the presentation.
Comparative Case Study with Ruby

In this case study you will compare C++ with Ruby to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in Ruby and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in Ruby. The Ruby example should be a translation of the C++ example.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on **17 December 2013** in the lab.
Submit the presentation slides and all the demo code in C++ and Ruby which you would use during the presentation.
Comparative Case Study with Python

In this case study you will compare C++ with Python to have a better understanding how OOP is used by different languages.

You will compare both the languages on the following topics:
1) Memory management – constructors, destructors, garbage collection, cleanup of objects etc
2) Inheritance – including overriding, shadowing, multiple inheritance and abstract classes and interfaces
3) Polymorphism – including polymorphic code usage, covariance and contravariance, generics and templates
4) Exception handling and resource management, RAII (mostly files)
5) General differences, arrays and the standard class library (cover container classes and their usage mostly)

The result of your case study is to be presented as a presentation with running code examples in both the languages for each of the above topics – do NOT write a report.

In the presentation slides make the points of differences and/or similarities and show a running demo of the code in Python and also in C++. You should be clearly able to explain what the code does and how it is different or similar in both the languages.

For comparison on the topics above you will use the C++ code from the lectures slides or the labs or from the website ONLY and you have to write the same code in Python. The Python example should be a translation of the C++ example.

The points on the slides should be expressed in simple English showing what you have understood – so do not take them directly from other sources such as books, internet etc

Marks: 20 marks (Towards course work - 10%)
For each of the above topics 4 marks.

Issue date: 26/11/2013

Submission: All group presentations on 17 December 2013 in the lab.
Submit the presentation slides and all the demo code in C++ and Python which you would use during the presentation.