Clean-code

Object-oriented software design

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True or false

True or false

Is the following statement true or false?

In an application written in an object-oriented programming language there should never be data structures developed in a procedural way.

True or false

Is the following statement true or false?

Solution: False

In an application written in an object-oriented programming language there should never be data structures developed in a procedural way.

True or false

Is the following statement true or false?

Exceptions must be defined
from the called object's point of view.

True or false

Is the following statement true or false?

Solution: False

Exceptions must be defined
from the called object's point of view.

True or false

Is the following statement true or false?

Developers are not the only one responsible for bad code.
There are other factors, too.

True or false

Is the following statement true or false?

Solution: False

Developers are not the only one responsible for bad code.
There are other factors, too.

True or false

Is the following statement true or false?

The Law of Demeter can be violated on classes which represent database tables.

True or false

Is the following statement true or false?

Solution: True

The Law of Demeter can be violated on classes which represent database tables.

True or false

Is the following statement true or false?

Shorter names are generally better than longer ones, so long as they are clear.

True or false

Is the following statement true or false?

Solution: True

Shorter names are generally better than longer ones, so long as they are clear.

True or false

Is the following statement true or false?

A long descriptive name is better than a short enigmatic name.

True or false

Is the following statement true or false?

Solution: True

A long descriptive name is better than a short enigmatic name.

True or false

Is the following statement true or false?

A long descriptive name is better than a long descriptive comment.

True or false

Is the following statement true or false?

Solution: True

A long descriptive name is better than a long descriptive comment.

True or false

Is the following statement true or false?

A comment explaining a regular expression is acceptable as long as it is not misleading and it is kept in sync with the meaning of the regular expression.

True or false

Is the following statement true or false?

Solution: True

A comment explaining a regular expression is acceptable as long as it is not misleading and it is kept in sync with the meaning of the regular expression.

True or false

Is the following statement true or false?

The public API must be documented, but it is enough to follow the clean code principles in the internal implementation.

True or false

Is the following statement true or false?

Solution: True

The public API must be documented, but it is enough to follow the clean code principles in the internal implementation.

Code snippets

Is following code snippet correct according to the clean-code principles?

```
int t; // elapsed time in seconds
```

Is following code snippet correct according to the clean-code principles?

Solution: No

```
int t; // elapsed time in seconds
```

Is following code snippet correct according to the clean-code principles?

```
List<Book> bookSet;
```

Is following code snippet correct according to the clean-code principles?

Solution: No

```
List<Book> bookSet;
```

Is following code snippet correct according to the clean-code principles?

```
public static bool Precedes(Account first, Account second)
{
    return first.Id < second.Id;
}
```

Is following code snippet correct according to the clean-code principles?

Solution: Yes

```
public static bool Precedes(Account first, Account second)
{
    return first.Id < second.Id;
}
```

Is following code snippet correct according to the clean-code principles in Java?

```
public interface IPerson {
    int getAge();
    String getName();
}
```

Is following code snippet correct according to the clean-code principles in Java?

Solution: No

```
public interface IPerson {
    int getAge();
    String getName();
}
```

Is following code snippet correct according to the clean-code principles in .NET?

```
public interface IPerson
{
    int Age { get; }
    string Name { get; }
}
```

Is following code snippet correct according to the clean-code principles in .NET?

Solution: Yes

```
public interface IPerson
{
    int Age { get; }
    string Name { get; }
}
```

Is following code snippet correct according to the clean-code principles regarding return values?

```
public List<Book> FindBooksByName(List<Book> books, string name)
{
    if (name == null) return null;
    List<Book> result = new List<Book>();
    for (var b: books)
    {
        if (b.Name.Contains(name)) result.Add(b);
    }
    return result;
}
```

Is following code snippet correct according to the clean-code principles regarding return values?

Solution: No

```
public List<Book> FindBooksByName(List<Book> books, string name)
{
    if (name == null) return null;
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        if (b.Name.Contains(name)) result.Add(b);
    }
    return result;
}
```

Is following code snippet correct according to the clean-code principles regarding error handling?

```
public int Max(List<int> values)
{
    if (values == null) return -1;
    if (values.Count == 0) return -2;
    int result = values[0];
    for (int i = 1; i < values.Count; i++)
    {
        if (values[i] > result) result = values[i];
    }
    return result;
}
```

Is following code snippet correct according to the clean-code principles regarding error handling?

Solution: No

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public int Max(List<int> values)
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    }
    return result;
}
```

Is following code snippet correct according to the clean-code principles regarding error handling?

```
public int Max(List<int> values)
{
    if (values == null)
        throw new ArgumentNullException(nameof(values));
    if (values.Count == 0)
        throw new ArgumentException("At least one value "+
                    "must be specified.", nameof(values));
    int result = values[0];
    for (int i = 1; i < values.Count; i++)
    {
        if (values[i] > result) result = values[i];
    }
    return result;
}
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Is following code snippet correct according to the clean-code principles regarding error handling?

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    return result;
}
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Is following code snippet correct according to the clean-code principles regarding exception handling?

```
public void Save(string message)
{
      try
      {
          file.WriteLine(message);
      }
      catch(Exception ex)
      {
          // Oh, come on!
      }
}
```

Is following code snippet correct according to the clean-code principles regarding exception handling?

Solution: No

```
public void Save(string message)
{
    try
    {
        file.WriteLine(message);
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    catch(Exception ex)
    {
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    }
}
```

Is following code snippet correct according to the clean-code principles?

```
public class Book
{
    /// <summary>
    /// Default constructor
    /// </summary>
    public Book()
    {
    }

    /// <summary>
    /// Gets or sets the title.
    /// </summary>
    public string Title { get; set; }

    /// <summary>
    /// Gets or sets the author.
    /// </summary>
    public string Author { get; set; }
}
```

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```

Is following code snippet correct according to the clean-code principles?

```
// TODO(https://github.com/myproject/issues/36176):
// Remove when it is provided by the Logger API
internal string FormatSymbol(Symbol symbol)
{
    return this.Format(symbol, true);
}
```

Is following code snippet correct according to the clean-code principles?

Solution: Yes

```
// TODO(https://github.com/myproject/issues/36176):
// Remove when it is provided by the Logger API
internal string FormatSymbol(Symbol symbol)
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}
```

Is following code snippet correct according to the clean-code principles?

```
// 2010.04.10. Added by Bob
// 2010.05.03. Modified by Alice
public class Date
{
    public int Year { get; set; }
    public int Month { get; set; }
    public int Day { get; set; }
}
```

Is following code snippet correct according to the clean-code principles?

Solution: No

```
// 2010.04.10. Added by Bob
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public class Date
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Selection

Which of the following are good for-loop variable names according to the clean code principles?

1. bookIdentifier
2. a
3. i
4. accountIterator

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Solution

Which of the following are good function names according to the clean code principles?

1. CP
2. Copy
3. F
4. Manager
5. PickColor
6. Pick
7. ColorPicker

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7. ColorPicker

Solution

Which of the following are good comments according to the clean code principles?

1. Public API documentation
2. Closing brace comments
3. Commented-out code
4. TODO comments

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Solution

Which of the following are bad comments according to the clean code principles?

1. Banner comments
2. Warning of consequences
3. Journal comments
4. Clarification

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1. Banner comments
2. Warning of consequences
3. Journal comments
4. Clarification

Solution

The return type of a function is a list. Which of the following is a return value that follows the NullObject pattern?

1. "null" value
2. A list with one item.
3. Empty list.

The return type of a function is a list. Which of the following is a return value that follows the NullObject pattern?

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Solution

Which of the following are good class names according to the clean code principles?

1. ColorPicker
2. Copy
3. Manager
4. Pick
5. Color
6. CP

Which of the following are good class names according to the clean code principles?

1. ColorPicker
2. Copy
3. Manager
4. Pick
5. Color
6. CP

Solution

How many parameters should a function have according to the clean code principles?

1. At most 5
2. Arbitrarily many
3. At most 3
4. As few as possible

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4. As few as possible

Solution

We reduced the number of parameters of a method by making fields from some of the parameters. Which of the following cases could have been corrupted by this transformation?

1. If the method can be called from multiple threads.
2. If the method was a recursive function.
3. If the method passed the parameter to a private method.
4. If the method processed the parameter in a loop.

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Solution