**Homework 11**

**Serialization in Java**

**Question #1**

Using the Internet and other available resources, write a paper (minimum of 150 words excluding references, use APA format) explaining what is serialization and its advantages and disadvantages. When do you use serialization?

**Answer:**

**Serialization**

Serialization is a method that involves converting items into a byte stream in order to transmit them from one machine to another and reconstruct them back original initial state (Taranov, Bruno, Alonso, & Hoefler, 2021). Serialization converts an item into a byte stream (Kono & Masuda, 2000), while deserialization uses the byte stream to reconstruct the original object in memory (Jang et al., 2020).

**Advantages**

Serialization helps in storage of objects directly in to the database in byte streams form.

Serialization is simple to realize (Troelsen, 2007)

Serialization is platform independent (Cejka, 2019)

It is adaptable to the demands of the programmer

All types of developers are familiar with it (Allen, Sridharan, & Sohi, 2009)

It allows Encryption (Wang, 2011)

It allows Authentication (Vather et al., 2018)

It allows Compression and secure computing (Samara, El-Halabi, & Kawash, 2007)

**Disadvantages**

It does not provide fine control over object access (DataFlair, 2022).

Sometimes byte streams do not entirely transform into objects, resulting in problems (Thanuja, 2020).

When it comes to memory use, this process is inefficient (DataFlair, 2022).

When you define a variable to be transient, the compiler allocates it a memory area. However, the constructor of the class remains uncalled. This causes in a variation of Java Standard Flow (DataFlair, 2022).

**When do you use serialization**

An object's states can be sent over the network or stored in a permanent storage like disc files or databases via a process called serialisation (Net-informations, 2022).

So, serialization is used in many applications like:

Storing data in an object-oriented manner to storage disc like employ record of company etc (Minh, 2019).

Saving programme states on disc, such as saving a game's state (Minh, 2019).

Sending data over the network in the form of objects, such as messages in a chat application (Net-informations, 2022).

**Question #2**

Use Serialization to write and synthesize the presenter’s program. Use and collect the following information:

Name

Phone Number

Date of birth

Email Address

Create a menu-driven program as follows:

1) Add information into a file.

2) Retrieve information from a file and display them.

3) Delete information.

4) Update information.

5) Exit.

**Answer:**

serialization is used to store a person data in file and then using deserialization data is retrieved using a readfile method. Additionally, option of updating data and deleting data is also provided to modify the entry.

**Program Output**

Program Output is shown below.

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| --- | --- |
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**Learning Report Summary**

1. **1. Did you complete your assignment and did it run without errors?**

Yes, I was able to complete the assignment and programs are running without any error.

1. **Did your program produce the correct result?**

My programs are producing correct output.

1. **Did you test your program thoroughly?**

I have verified all the results, and tested my programs for different inputs, they are working fine.

1. **How much time did you spend to complete your assignment?**

I spent five days on assignment.

1. **Did you write the program yourself? Did you get any help from anyone?**

Yes, I wrote programs myself with the help of videos. Google search was required for the first question.

1. **How did you resolve the issues when you encountered obstacles to completing your program? Did you use Google to get help? Describe how Google was abled or not able to assist you.**

I was able to complete the assignment with ease after going through lectures and videos. Google search was required for question 1. I was able to find desired information related to sterilization.

1. **What did you learn from doing this assignment?**

I understood the applications of serialization to convert object to bit stream and then convert a bitstream back to objects.

1. **Any other information you would like to share with your instructor? Make sure you provide program output on each option.**

I have provided program outputs at each stage using screenshots.

**References**

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