

Subject Name (Code) - Exam Term Solution

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Month Day, Year

Question 1(a) [3 marks]

Explain the usage of “Smart Quotes” and inline code styling.

Solution

When writing text, always use LaTeX smart quotes. For double quotes, use two backticks and two single quotes: “Like This”. For single quotes, use one backtick and one single quote: ‘Like This’.

For inline code fragments, use the `code{}` command. Do not use `texttt{}`.

- **Consistency:** Ensures all files look professional.
- **Typography:** Smart quotes look better than straight quotes in text.

Mnemonic

“SQC: Smart Quotes in Content, Straight Quotes in Code”

Question 1(b) [4 marks]

Differentiate between Abstract Class and Interface using a table.

Solution

Use the `table` environment for comparisons. Note that the caption is placed **above** the table.

We use `tabulary` as the standard environment because it adapts to content width automatically. use L for left-aligned columns that wrap if needed, C for centered, etc.

Example 1: Wrapping Text (Adaptive)

Table 1. Abstract Class vs Interface

| Feature | Abstract Class | Interface |
|---------|------------------------------|----------------------------------|
| Method | Can have implementation | Abstract (mostly) |
| Vars | Any type | <code>public static final</code> |
| Inherit | <code>extends</code> keyword | <code>implements</code> keyword |

Example 2: Compact Data (Auto-shrinks)

Table 2. Simple Data Comparison

| Type | Size |
|------|---------|
| int | 4 bytes |
| long | 8 bytes |

Mnemonic

“MVI: Methods Variables Inheritance differences”

Question 1(c) [7 marks]

Draw the thread life cycle and write a program to demonstrate thread creation.

Solution

For diagrams, use standard TikZ with inline styles. Caption goes **below** the figure.

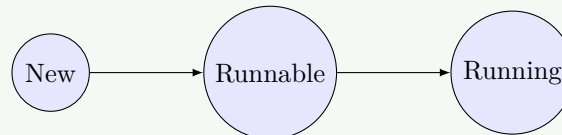


Figure 1. Simplified Thread Life Cycle

For code, use the `lstlisting` environment. Ensure you use **straight quotes** (") inside the code block so text can be copied correctly.

Listing 1. Thread Creation Example

```

1 class MyThread extends Thread {
2     public void run() {
3         // correct: using straight quotes
4         System.out.println("Thread is running...");
5     }
6 }
7
8 public class Main {
9     public static void main(String[] args) {
10         MyThread t1 = new MyThread();
11         t1.start(); // Start the thread
12     }
13 }
  
```

Mnemonic

“NRR: New Runnable Running states”

Question 1(c OR) [7 marks]

How do we handle alternative questions?

Solution

Simply use the OR suffix in the question number argument. This ensures proper indexing in the final document.

- **Flexibility:** Supports GTU’s optional question format.
- **Apostrophes:** Use single quote ‘: It’s easy!