

改寫Quiz9

The screenshot shows a Java Swing application window titled "106_Quiz9". The window is divided into several panels. The "Material" panel contains a "材質選擇" button and two input fields: "材質" (Material) and "密度" (Density), both containing the value "0". The "Geometry" panel contains a "形狀" (Shape) dropdown menu set to "球" (Sphere) and an empty "半徑" (Radius) input field. The "Amount Of Shape" panel contains an "Add" button, a "總數" (Total) input field with the value "0", and four input fields for "球" (Sphere), "立方體" (Cube), "圓柱體" (Cylinder), and "金字塔" (Pyramid), each with the value "0". The "Sort" panel contains a "排序方式" (Sort Method) dropdown menu set to "形狀" (Shape), two radio buttons for "遞增" (Ascending) and "遞減" (Descending) (with "遞增" selected), and a "確認" (Confirm) button. There are two large empty text areas for "Message" and "滾球大賽" (Rolling Ball Competition).

- (1)在輸入幾何參數時，若輸入值不是一個數字，則程式會發生錯誤，請利用 `try catch + FormatException` 來處理這個問題。
(2)在輸入幾何參數時，若輸入的數字是負數，會讓產生的物件在計算體積及重量產生問題。請利用 `try catch`、自訂的 `Exception`類別以及 `throw`來處理這個問題。
- 請利用工廠模式(大話設計模式第八章)的概念修改參考程式碼(簡單工廠模式)

本次考試採用openbook 方式，可參考任何資料。