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java assignment section A.
Question 1.
n Java, these are the two types of data : Primitive data types : these are the ones that are predefined by the language and named by a reserved keyword.
Reference data types: These are created using defined constructors of the classes.

Question two.

The scope of a variable is the part of the program where the variable can be accessible.

Question 3.

It gives an initial value to a variable before it is used. This leads to prevention of errors which may occur if the variable is used before being assigned a value.

Question 4.

Static variables belong to the class and are shared among all instances of the class while Instance variables belong to an instance of a class and are unique to each instance whereas local variables are declared within a method and are only accessible within that method.

Question 5.

Widening casting occurs when a smaller primitive data type is automatically converted into a larger primitive data type while Narrowing casting is experienced when a larger primitive data type is explicitly converted into a smaller primitive data type.

Question 6.

Boolean =false
char=`\u0000'
byte=1,-128 to 127
short=2
int=0,-2147483648 to 2147483647
long=8,-9223372036854775808 to 9223372036854775807
float=+/-3.40282347E+38f(6-7)
double=0.0 d

Question 7.

A package is a way to organize related classes and interfaces into a single namespace.

Question 8

Using Java packages is important because:
It helps in organizing code into modular units.
Packages also provide access control, allowing classes and interfaces to be visible only within their own package or to other packages that explicitly import them.

Section B

import java.util.Scanner;

public class SurnameAndAge {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);

```
    // Prompt the user to enter their surname
    System.out.print("Enter your surname: ");
    String surname = scanner.nextLine();

    // Prompt the user to enter their current age
    System.out.print("Enter your current age: ");
    int age = scanner.nextInt();

    // Calculate the number of characters in the surname
    int surnameLength = surname.length();

    // Print the number of characters in the surname
    System.out.println("The number of characters in your surname is: " + surnameLength);

    // Check if the age is even or odd
    String ageType = (age % 2 == 0) ? "even" : "odd";

    // Print whether the age is even or odd
    System.out.println("Your current age is an " + ageType + " number");

    scanner.close();
}
```

}

import java.util.Scanner;

public class AverageMarks {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);

```
    // Prompt the student to enter the marks of five units
    System.out.println("Enter the marks of the five units:");

    double totalMarks = 0;

    // Loop to read the marks of each unit and calculate the total marks
    for (int i = 1; i <= 5; i++) {
        System.out.print("Enter marks for unit " + i + ": ");
        double marks = scanner.nextDouble();
        totalMarks += marks;
    }

    // Calculate the average marks
    double average = totalMarks / 5;

    // Display the average marks on the screen with two decimal places
    System.out.printf("Average marks: %.2f%n", average);

    scanner.close();
}
```

}

import java.util.Scanner;

public class DivisibilityTest {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

```
    // Prompt the user to enter an integer
    System.out.print("Enter an integer: ");
    int number = scanner.nextInt();

    // Check divisibility by integers in the range of 0-9
    for (int divisor = 0; divisor <= 9; divisor++) {
        if (divisor == 0) {
            // Check divisibility by 0 separately
            if (number == 0) {
                System.out.println("The number
```