Question 1 (a)

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| **Doctor** | **Contact Number** | **Service Points** | **Department** |
| Dr. Lissa  MwendaContact | +260766219936 | Antenatal Care,  Family Planning,  Postnatal Care | Gynecology |
| Dr. Yvonne Sishuwa | +260766219937 | Family Planning,  Postnatal Care | Pediatrics |
| Dr. Machalo  Mbale | +260766219938 | Antenatal Care | Radiology and  Imaging |

1NF:

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| **Department(FK)** | **Service Points** |
| Gynecology | Antenatal Care |
| Gynecology | Family Planning |
| Gynecology | Postnatal Care |
| Pediatrics | Family Planning |
| Pediatrics | Postnatal Care |
| Radiology and  Imaging | Antenatal Care |

2NF:

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| --- | --- |
| **Department(PK)** | **Doctor(FK)** |
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3NF:

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| --- | --- |
| **Department(PK)** | **Doctor(FK)** |
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It’s already been 3NF. Because there is no Transitive Dependency.

Question 1 (b)

Question 2

|  |  |  |  |
| --- | --- | --- | --- |
| **Iteration** | **Value of i** | **Expression evaluated** | **Value of n** |
| 1 | 0 | n += i (i.e., n = 30 + 0) | 30 |
| 2 | 1 | n += i (i.e., n = 30 + 1) | 31 |
| 3 | 2 | n += i (i.e., n = 31 + 2) | 33 |
| 4 | 3 | n += i (i.e., n = 33 + 3) | 36 |
| 5 | 4 | n += i (i.e., n = 36 + 4) | 40 |
| 6 | 5 | n += i (i.e., n = 40 + 5) | 45 |

Question 3

Method Overloading:  
  
Method overloading allows us to declare numerous methods with the same name but different arguments. When we call an overloaded method, the compiler decides which version to run based on the amount and type of parameters given.

Example:

using System;

class Calculator

{

public int Add(int a, int b)

{

return a + b;

}

public double Add(double a, double b)

{

return a + b;

}

}

class Program

{

static void Main(string[] args)

{

Calculator calculator = new Calculator();

int result1 = calculator.Add(3, 4);

double result2 = calculator.Add(3.5, 4.5);

Console.WriteLine("Result of integer addition: " + result1);

Console.WriteLine("Result of double addition: " + result2);

}

}

Method Overriding:

Method overriding is an object-oriented programming technique that enables a subclass to offer a customized implementation of a method that has already been specified in the superclass. It is used to implement runtime polymorphism.

Example:

using System;

class Animal

{

public virtual void MakeSound()

{

Console.WriteLine("Animal makes a generic sound.");

}

}

class Dog : Animal

{

public override void MakeSound()

{

Console.WriteLine("Dog barks.");

}

}

class Program

{

static void Main(string[] args)

{

Animal animal = new Animal();

Dog dog = new Dog();

animal.MakeSound(); // Output: Animal makes a generic sound.

dog.MakeSound(); // Output: Dog barks.

}

}

Question 5

using System;

public class HelloWorld

{

public static void Main(string[] args)

{

int n1, n2, n3, min;

Console.WriteLine("Enter three integer values:");

n1 = Convert.ToInt32(Console.ReadLine());

n2 = Convert.ToInt32(Console.ReadLine());

n3 = Convert.ToInt32(Console.ReadLine());

min = n2;

if (n1 < n2)

{

min = n1;

}

if (n3 < min)

{

min = n3;

}

Console.WriteLine("Minimum value is: " + min);

}

}