

Excel Technologies Ltd.

Competency Assessment

Position: Software Engineer
Total Marks: 30

Ensure you are indicating accurately what question you are answering. Make sure your script is clean and easily readable. Do not forget to fill up the box below with your information. Attach the question paper with you script. During competency assessment, you are not allowed to use internet through any means.

Name																			
Cellphone																			
Email																			

Marks

- Consider the following register. Holy Family Red Cross Hospital is using this register to manage doctors' list, their contact number, and the departments where the doctors are belongs to. With this register, the hospital is also managing doctor's service points within the hospital.

5 X 2 = 10

- Apply normalization rule to normalize this register up to 3rd normal form.
- After normalization, draw Entity Relationship Diagram and show the degree of cardinality among entities using crow's foot notation.

Doctor	Contact Number	Service Points	Department
Dr. Lissa Mwenda	+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

- Consider the following loop. Trace the value of "n" in every iteration of the loop.

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```
int n = 30;

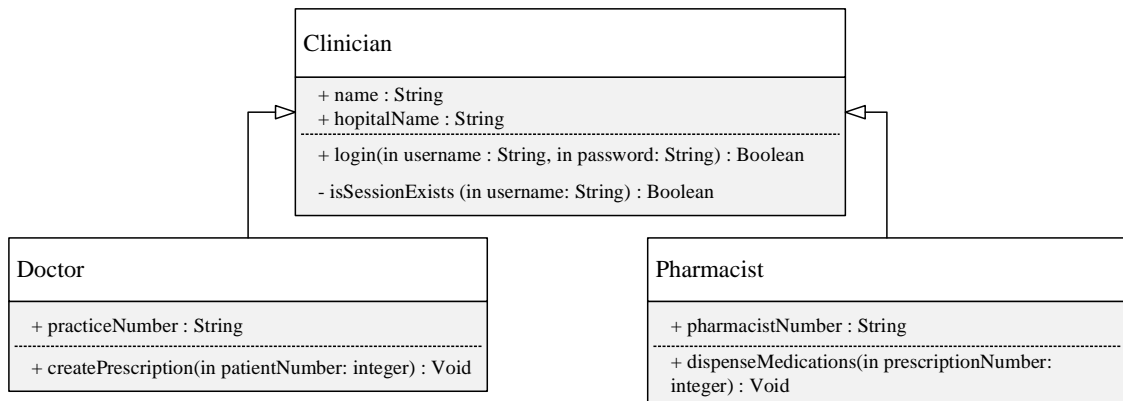
for (int i = 0; i <= 5; i++)
{
    n += i;
}

print(n);
```

- Explain method overloading and method overriding with example. Write your code in C# programming language.
- Translate the following UML Class Diagram into program code. Write your code in C# programming language.

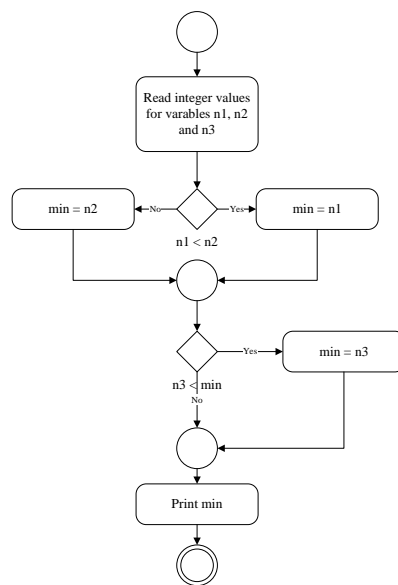
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6 Translate the UML Activity diagram into program code. Write your code either in C# programming language.

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