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168. 'A'

O.S.T. Assignment.

Tittle - Open source software in the software industry, including a discussion of its principles and standard requirements.

Open source software (oss) is software that is distributed with its source code, allowing users to modify and distribute it freely. This model has become increasingly popular in the software industry due to many benefits. In this essay, we will discuss the principles of open source software, the standard requirements for open source software, and the benefits of using an open source software in the software industry.

The principles of open source software are based on the idea of collaboration and sharing. The core principles of open source software include the following

- Free redistribution - Open source software can be freely distributed and shared without any other restrictions.
- Acess to sourse code - The source code of the software is made available to the users, which allows them to modify and customize it according to their needs.
- Open participation - Any one can participate in the development of open source ware regardless of their background or expertise.
- Collaboration - Open source software development is based on collaboration and sharing of knowledge, resources and expertise.
- Transparency - The development process of

open source software is transparent, which allows users to see how the software is developed and maintained.

The standard requirements for open source software are established by the open source initiative (O.S.I) which is a non-profit organization that promotes open source software. The O.S.I has defined a set of criteria source. This criteria includes:

1) Free distribution — The software must be freely, must be made available to the users, which allows them to modify and customize it to anyone who wants to use it.
2) Source code — The source code of the software must be made available to users, which allows them to modify and customize it.
3) Derived works — User must define to be allowed to create and distribute derived works based on the software.
4) Integrity of the author's source code — The original author of the software must be given credit for their work.
5) No discrimination against persons or groups — The software must not discriminate against any person or group.
6) No discrimination against field of endeavour — The software must not be restricted to any popular field of endeavour.
7) Distribution of licences — The license of the software must be distributed with the software.
8) License must not be specific to a product —

The license of the software must not be specific to a particular product.

9) License must not restrict other software. — The license of the software must not restrict the use or distribution of other software.

10) License must be technology neutral — The license of the software must not be specific to any particular technology.

- Advantages of using open source software including cost-effectiveness, flexibility, greater transparency and collaboration.

The advantages of using open source software cost-effectiveness — Open software is free to use and distribute. It can significantly reduce software licensing costs. Additionally, many open source software applications are designed to run on low-cost hardware, which can further reduce costs.

flexibility — The source code is available to users, they can modify and customize the software to meet their specific needs. This makes open source software ideal for organizations with unique requirements that cannot be met by off the shelf-software.

greater transparency — The source code is available to users, they can review it to ensure that the software is secure and free from vulnerabilities. this transparency also resolves other issues more quickly.

collaboration — The software is freely available,

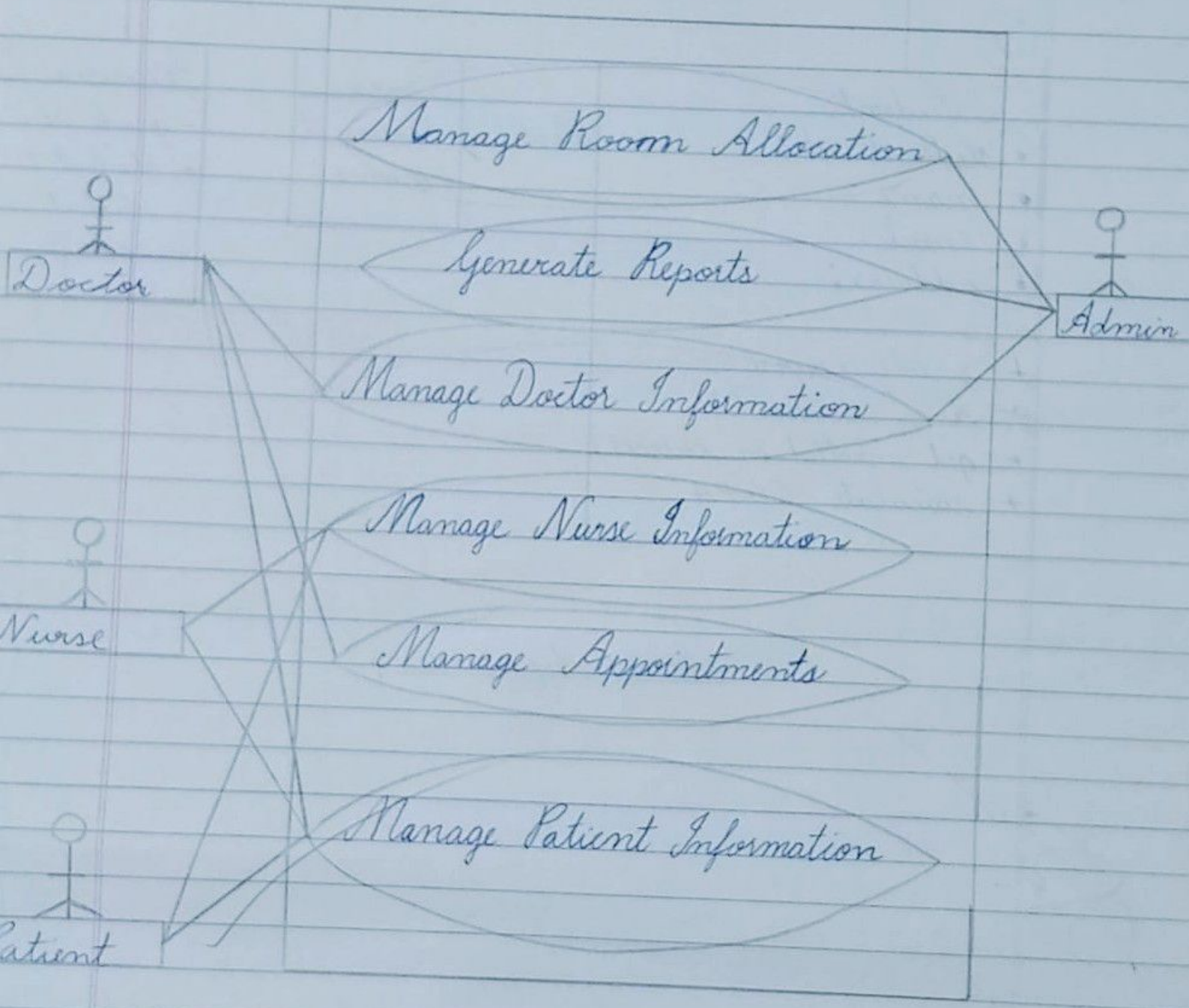
users can share their knowledge and expertise to improve the software. This collection can leas to faster development cycles, better software quality and more innovative solutions.

- Example of sucessful open source software project. Linux operating system - One of the most, sucessful open source software projects is the linux operating system. Linux was created in 1991 by linus torvalds, a student at the university of Helsinki in finland. Linux is based on the unix operation system and is known for its, stability, flexibility and security.

Today, linux is used by millions of people, around the world, from individual user to large corporations. It is used to power everything from, smartphons and tablets to web servers and, supercomputers. Linux is also the foundation for many other open source softwares projects, such as Apache web server, the MySQL database and the openstack cloud computing platform.

The sucss of Linux is due in part of its open source nature. The source code is frely available to anyone who wants to use, modify, or distribute it. This has led to a large active community of developers who contribute to the project. The community has also created a vast ecosystem of software applications and tools that run on linux.

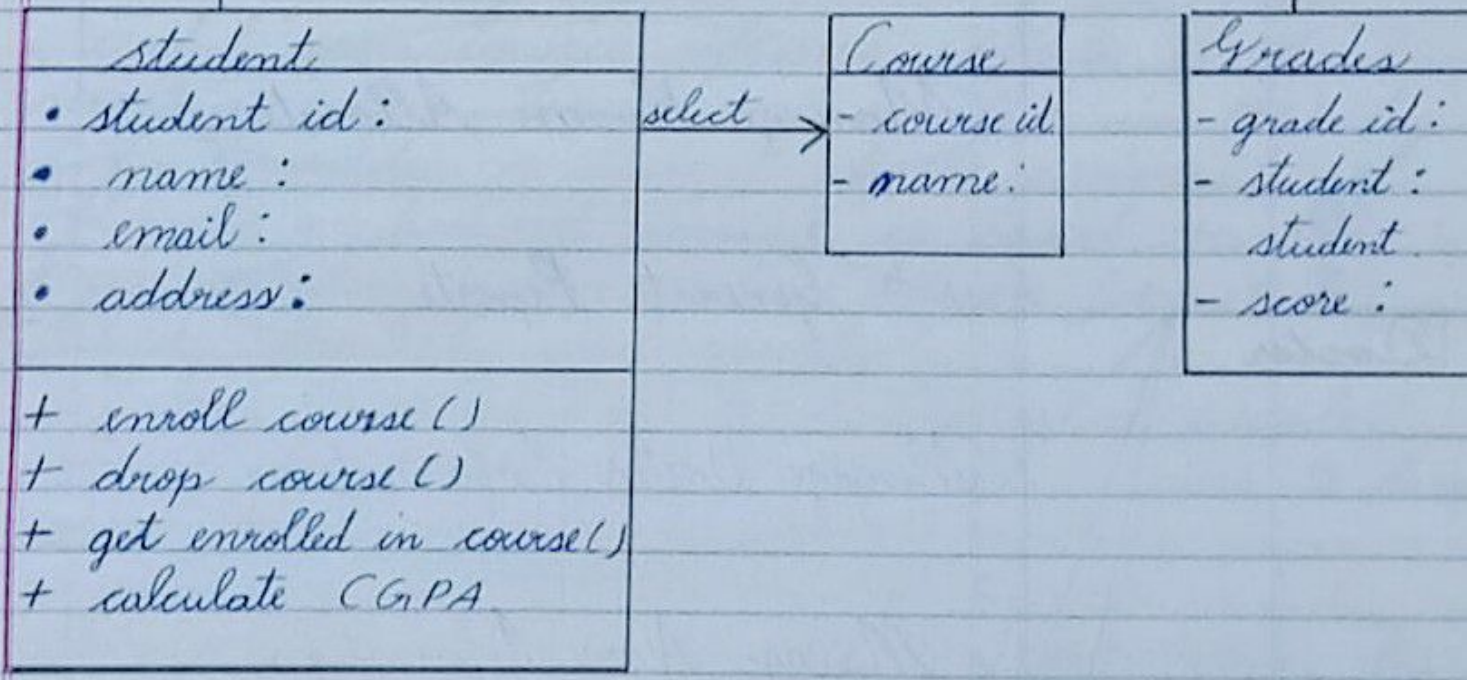
- Create a use case diagram for a hospital system, including actors such as doctors, nurses and patients.



Use Case Diagram.

- Create a class diagram for a student enrollment system, including classes for students, courses and grades.

Gain.



Class diagram.