A. **Domestic service robot**.

B. **Robot in household:**

A robot that can do household tasks like cooking, sweeping, cleaning and other chores. This robot's targeted environment is a house. It has the ability to handle various equipment of a kitchen and is skilled at cooking, chopping vegetables, handling laundry, feeding pets etc. To train the system, data of different types of house setup is used so the agent generalizes when it is deployed to the new house environment. Also, data of human interactions will also be used. The robot is also equipped with imitation learning techniques. It will learn the tasks from human demonstrations.

C. **Direct stakeholders**: The person/family who owns the robot.

**Indirect stakeholders**: Considering the people(except the direct stakeholders) who are potentially in trouble if something goes wrong with the robot, then it is the neighbours of people who own the robot.

**Ethics:** The robot should try to be friendly and helpful to everyone. The robot shouldn't harm anyone.

D. **The worst cases are:**

i . the robot performing a task with knives if something goes wrong, then there is a high chance of direct stakeholders getting injured or possibly death.

ii. Possibility of gas explosion if the robot does something wrong thus killing everyone in the house and injuring neighbours.

E. The person who owns the robot may not want the robot friendly to the visitors. Imagine a robber, we don't expect the robot to be friendly with him and assist him in robbery. In the same scenario, it is acceptable to harm the robber to protect the hourse owner/family.

F. In my opinion, taking votes from the stakeholders is reasonable as long the number of stakeholders who voted is high. There are some issues with the voting as well, if the majority stakeholders have something in common then the voting is biased. For example, if all the stakeholders are rich and influential and assume they prefer saving rich humans in a scenario then the robot that is trained on this will do the same which is not acceptable. So, votes should be taken from all classes of stakeholders.

E. One key difference is that robots should be able to identify what is being taught by the stakeholder is ethical or not and have a freedom to deny if it is not ethical. For example, a stakeholder might be training a robot to kill neighbour's pets or even worse attack a person.