

# Ethics And Ownership

Q- What is ethics?

- System of moral principles
- That guides behaviours
- Based on philosophical and religious issues.
- Example: Respectful and Considerate behaviour

## 8 IEEE Code of Ethics

compatible

- ① Public: Developer must act consistently with the public interest
- ② Client and employer: Developer must act in the best interest of their client and employer consistent with the public interest.
- ③ Product: Software engineers should ensure that their product meets the highest professional standards
- ④ Profession: Software engineers should advance their integrity and reputation of the profession consistent with the public interest
- ⑤ Judgement: Software engineers should maintain integrity and independence in their

## professional judgement

- ⑥ Management: Software engineer managers should promote ethical approach to the management of software development and maintenance
- ⑦ Colleagues: Software engineers should be supportive and fair to their colleagues.
- ⑧ Self: Software engineers shall participate in life-long learning regarding the practise of their profession.

Q- How can a developer ensure that he is acting in the best interests of his client?

- keeps Client personal data private
- Involve the client in development. (ziptech Jani)
- Provide the solution client asks for
- keep the project running on time
- keep the client informed.

Q- What a developer can do to feel more confident before joining new job?

- Read about language that the developer would be using.

- Visits the office prior to starting
- Speak to the manager about concerns.

Q- What is the action done by manager to make a new developer feel comfortable?

- Prepare an **induction** Admitting to an organization formally.
- Invite developer before starting
- Introduce developer to the team.

Q- What is the action done by colleague to make a new developer feel comfortable?

- Prepare a greeting
- Provide structured support
- Invite developer to social events.

Q- Why a professional code of conduct should be signed before starting?

- To confirm that the developer understands the code of conduct
- To make sure what behaviour is expected from the developer.
- To make developer understand that there may be consequences of some actions.
- To make sure all employees adhere to the same standard.

# Ownership

Q- What is meant by copyright?

- The formal and legal rights of ownership
- Protects against unauthorized reproduction of work.
- Provides legal right of redress.

## Software Licensing

- ① Commercial
- ② Free software
- ③ Shareware
- ④ Open source

Q- What is meant by commercial licensing?

- Restricted use
- Software key needed to install
- Source code not provided
- Anyone can purchase/download if agree to the terms
- Limited Number of installations

Q- Benefit of commercial license to owner

- They can charge a fee
- retains copyright
- So software can not be distributed by third-party

Q- Benefit of commercial license to customer

- Potentially better support as fee is paid
- Redress is available if software does not work correctly
- Likely to have fewer bugs

Q- What is meant by open source licensing?

- The source code is released with the program
- User can edit the source code to suit their needs.
- User re-release their version under same terms
- Can be cost-free but may also need payment.

Q- What is Shareware license?

- User gets a free trial which may be limited in features

- No access to source code
- The user has to pay after expiry date

Q- Benefits of shareware to customer

- They can check if it works
- without paying fee if it does not.

Q- What is meant by freeware license?

- There is no fee
- The software could be copyrighted
- Modification, redistribution is prohibited without permission.

## Artificial Intelligence

• Artificial Intelligence is the ability of a computer or a robot controlled by a computer to do tasks that are usually done by humans because they require human intelligence

# Impacts of Artificial Intelligence

- Easier life → repetitive or dangerous tasks are done by computers, so it saves lives and frees human workforce.
- Economic Crisis → About 99% job loss b/c of total AI control.
- Environmental → Monitoring and Control Systems (Pre-planned alert)

## Application of Artificial Intelligence

Q- Describe how the computer would use AI to play chess board game.

- The rules, past moves and decision making algorithms of the game will be stored
- The AI program is trained by playing many times
- AI will look ahead at possible moves
- and analyze the pattern for past choices.
- and choose the move most likely to be successful. implemented choices.
- Computer could learn how to improve from previous mistakes.
- by storing positive/negative result of choices.
- and changing its future choice.

Note: For every question, include that AI will learn from previous

Q- Describe application of Artificial Intelligence

① Police identifying wanted People

- Uses image recognition
- to identify features in an image

- Limb technology
- Weather Prediction
- Drones

② Self-Driving Cars

- Directs its position on the road and within the traffic
- Follows a route, collision avoidance and self-parking

③ Game Playing

- Models characters in a game
- to allow computer characters to react according the player's movement.

Q- Explain how the use of AI can help improve the safety and efficiency of a factory.

- Machines can learn from past problems
- They can adapt to stop the same problem occurring again

- They can learn to predict what might happen and raise an alert
- Machines can learn how to work efficiently
- When an action slows the system down, it can prevent this happening again
- When an action increases the speed of the system, it can repeat this when necessary to improve the efficiency.