**Worksheet 9: Ethics and Professionalism**

Thi Van Anh DUONG Student ID: 90023112

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Coordinator: Khurram Hameed

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1. **Motivation**

why some of people might behave unethically in a software project?

**\*\*\*Reasons**

* Receiving unreasonable amount of salary compared with heavy workload

🡺 worsen performance.

* Cannot get along with team members

🡺 loss of interest while working

* Assigning a task that not the suitable for team member’s strength and major

🡺 bad performance.

* Peer pressure

🡺 mental and psychological issues, lack of coordination between team members.

* Procrastination + Laziness

🡺 Postpone the whole projects and cause conflicts among the team.

* Poor planning, don’t assign tasks evenly

🡺 the whole project will fall into chaos

* Calculate the wrong finishing days.

🡺 The team have to meet deadline frequently, loss of performance

* Forcing the whole team work extra hours to finish the project on time

🡺 worsen performance and quality of the software project.

* Unreasonable request from customers

🡺 make the team stress when fixing and adding more features.

* Lack of recognition

🡺 loss of performance, less coordination as team members, mistrust in company

**\*\*\*Solutions:**

* Provide software team with well-paid salary and bonus money which worths their efforts in the project.
* Organizing holidays or vacations: the whole team will take a rest in resort, camping, picnic and together take part in team building activity to strengthen their bonds.
* Having a team leader who are good at plaining and tracking the project.
* Frequently have meeting with customers to gather information, keep themselves updated with the project’s progress and avoid misunderstanding between the software team and customers as well.
* Level up salary and make compliments on those perform a brilliant job.

1. **Imagining Harm**
2. **A video chat system.**

*Scenario*:

The video chat system was design by a software team, they have done everything except for the poor call security features such as: do not let the host verify participants when they join a video call, allow people do screenshots, record screen without permission of the host, etc. However, they still put it into operation.

When a company use this video chat system to operate a private meeting with their team member for upcoming marketing strategies. Hackers will take advantages of this bugs to sneak into the meeting easily, they capture screen or even record the whole conversation during the meeting and report it to their company.

These private information can be leaked, sold for the company’s rivals for copying marketing ideas, hence the loss of billions of dollars to the company.

1. **A software system for controlling traffic lights.**

*Scenario:*

A software company **A** was assigned by the government to design a controlling traffic lights system for a newly-built city. Some places should have traffic light should be: intersections, busy roads, school zones, etc.

Due to the limited amount of time and budget, the team cannot cover all the circumstances (functional requirements). They set the same time set for red light, green light and yellow light for all time frame in a day.

When peak hour is coming, the number of vehicles increase rapidly, especially in the intersection, but the time set is still the same as usual. As a result, a lot of vehicles are stuck in the same place and cause to long- lasting traffic congestion. This cause heavy burden for police department to control the road.

1. **An online banking system.**

*Scenario:*

A bank company has just established, and they hired a software team to design for them a new online banking system. There was a support and maintenance team in charge of testing and update the bank app version every 6 months.

However, after 12 months the support and maintenance administration became neglect in testing which give chance for a type of virus sneaks into. The whole banking system was blocked and stopped accidentally, huge amount of customers cannot do any transaction as well as withdraw their money to do their business. This takes the whole bank a long time, through multiple processes to solve it and refund for customers, the whole software team ages to fix bug and delete the virus. As a result, the bank lost their reputation and some potential customer withdraw money and leave them.

1. **A software package for helping to design houses.**

*Scenario:*

A software team was hired to create a design house package. Everything runs smoothly except for the conversion from inches (map) to feet (real life). When programming, a developer accidentally created a semantic error by write a wrong formular of conversion. However, when testing the team skip it to boost the project productivity.

A company use this software to design an apartment where accommodate thousands of people. As a result, due to the big differences between the wrong and right measurements, the apartment after building is extremely weak. After 6 months operating it collapsed which makes hundreds of people die, and put them under life threat. The company after that was sued by victim’s family and went bankruptcy, hundreds of families will no longer have enough members.

1. **An aircraft autopilot.**

*Scenario:*

A brand name airline wants to improve their flight quality and lessen their pilot pressure while flying, so they hire a software team to design an aircraft autopilot. This software will control the whole plane on the right track based on the prepared guidelines.

The programing tasks were divided evenly for each team members. However, there was a guy in navigation-processed team who usually postponed and missed the deadlines. The whole team had to wait him and certainly happened conflicts among them. The project followed that cannot run smoothly. When the deadline was coming, everyone worked in rush. They did miss a very important task is that not adding the warning device when the plane is in danger zone or run out of energy.

When the autopilot is put in practice, pilot takes a rest and leave autopilot, the plane at that time is nearly facing with a strange object but due to lacking of warning feature the software cannot inform for the pilot. As a result, they plane crashed and hundreds of people died, they airline company was sued and loss billions of dollars.