PES UNIVERSITY

AUGUST – DECEMBER 2022 SEMESTER 5

SOFTWARE ENGINEERING LAB TASKS
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Problem Statement – 1:

You are a manager at a large MNC. You and your team have been working closely with a client to develop their product. Through this project you have developed a good business relationship and friendship with the client. On the eve of the product release, your team notifies you about a major bug in the code that had been overlooked before. Your client asks you if the product is defect free.

Keeping in mind personal, business & professional ethics, how would you tackle this situation as a manager? Brainstorm ideas which would lead to a defect free product release without jeopardizing the good relationship with your client. Make use of ethical frameworks and principles in your answer.

⇨ Firsly I would talk to my team of what exactly is the error,Ask questions to find out why

⇨ Find out the true reason for the error.

⇨ Asking the individual who started the fire pointed questions will help you learn why, as opposed to berating them:

⇨ What were you thinking about? What outcome did you anticipate? Why did you consider this to be a wise decision?

- ⇨ Intervene and provide remedies
- ⇨ When the lava is getting close to the coast is not the time to lecture and chastise. Your first duty is to intervene and make an effort to make things right. Come up with ideas on how to solve the issue and lessen its effects.
- ⇨ Consider whether the error is a one-off or indicative of a pattern of conduct.
- ⇨ Should they have been more savvy?
- ⇨ If the errors are frequent and many, then it's time for a stern talk or perhaps a warning letter.
- ⇨ But even very effective workers make mistakes. It's a necessary and awkward component of the growing process. Don't assume that the wisest course of action is to overlook a mistake made by a high achiever. Even the best performers benefit from mentoring and the odd polite reprimand.
- ⇨ Don't expect your top employees to live up to an unattainable standard of perfection. Inform them of their mistakes. Even diamonds require polishing and buffing.
- ⇨ Accept responsibility and avoid public reprimands.
- ⇨ Behind closed doors, a straight discussion is one thing. Another is a public drawing-and-quartering.
- ⇨ You have to stand up for and represent your followers as a leader. Don't openly discuss their errors in front of other employees.
- ⇨ Consider taking the fallout on your own, even if the error is well-known, rather than placing a team member in danger.
- ⇨ You are accountable for the individuals you are in charge of. And on sometimes, that entails accepting accountability for someone else's error.
- ⇨ Even if the person in the backseat instigated the collision, it is your obligation to take the biggest hit if you are the driver. This will increase team loyalty as well.
- ⇨ The underlying concept? We should discuss failure. Nobody benefits by sweeping it under the rug like a dirty little secret. We have the chance to learn from one another when we share. Everybody stammers. Without it, growth cannot take place.

⇨ How can your team implement this? Make time in your meetings to discuss failure, as opposed to solely emphasising your recent victories and triumphs.

⇨ Discuss events that didn't go smoothly. Consider the customers who departed. But failure should always be seen as a shared responsibility.

⇨ Not dragging someone out for a public beating is the goal. Realizing that we are all human is important. It conveys the strong message that failure is OK.

Problem Statement – 2:

In line with the four pillars of DevOps – Collaboration, Tools, Scaling and Affinity, your team has to come up with innovative solutions to tackle social issues such as child safety for example (each team is free to choose their own topic based on social issues). This will be done using techniques such as Crazy 4s and S.C.A.M.P.E.R. You are then required to provide a list of tools for an end-to-end technical solution for the best idea you generated. You are also required to provide information regarding scaling in terms of teams, Infrastructure, workload, organization and complexity.

Crazy 4s:

1) Open a new text editing document.

2) Set a timer for four minutes.

3) In these four minutes each participant is required to come up with four rough ideas as solutions for the problem. You can note your ideas down as small points instead of entire sentences.

4) At the end of four minutes, you are required to discuss your ideas with your teammates to come up with the best possible solution.

NOTE: This can be extended to Crazy 6s or Crazy 8s with six minutes for six ideas or eight minutes for eight ideas depending on team size.

S.C.A.M.P.E.R:

In order to further improve your ideas ideated using Crazy 4s, use this technique. Answer these following questions as a team to improve your idea.

Substitute: What can I substitute to make an improvement?

Combine: What ideas, features, processes, or components can I combine?

Adapt: What processes, features, or components should I adapt?

Modify: What can I make larger or make smaller?

Put to another use: What else can it be used for? Who else could use it?

Eliminate: What would happen if I removed a feature or part of it?

Reverse/rearrange: How can we rearrange the current status for an improved solution? What would happen by reversing the process?

CLIMATE CHANGE (Social Issue)
Crazy 4s

1. adopting an electric alternative in vehicle models rather of a fossil fuel or extensive gas option.
2. Eliminate harmful emissions from large companies so that only dangerous and unavoidable pollutants are allowed to enter the atmosphere.
3. preventing the careless disposal of waste from various sources and aiding in the effective separation and handling of it.
4. lowering CFC emissions from products like air conditioners.

S.C.A.M.P.E.R:
S - Renewable energy sources can replace fossil fuels as a very viable alternative.

C - Factory waste emissions and CFC emissions could both benefit from a similar tool to help reduce consequences of such substances on the environment.

A - Every person who adopts waste segregation is taking a significant step toward reducing global warming.

M - In the long run, it will be beneficial to make electric vehicles more widely accessible to the general public.

P - In general, electric options can be used for almost any entity that currently relies on non-renewable energy sources, including vehicles.

E - It would not work efficiently.

R - The situation would be alarming and much worse than any of the current states if we reverse the steps that we have already taken to control global warming.

Problem Statement – 3:

For your SE projects, convert your software architecture into a business roadmap and devise a Service strategy by including service value definition, business case development, service assets, market analysis and service provider types.

PROJECT NAME: Mars data scraping

LAST REVISION DATE: 16/11/2022

CONTRIBUTION TO BUSINESS STRATERGY: We worked to build a user-friendly UI to ensure that the users have a workspace which they can easily use and navigate around to do their work efficiently.

OPTIONS CONSIDERED: Hire skilled computer engineers and frontend developers, comfortable interview process, training period for anyone facing any difficulties.

TIMESCALE: Built using agile scrum.

BENEFITS: Easy to use GUI with a variety of features.

RISKS: The project is simple and user-friendly. However, one hurdle is opening the file in extensions other than .txt.