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Q.1 what is software? what is software engineering?

→ Enabling hardware to perform useful functions so that the user can interact and control the computer to achieve various features is called software.

→ The work needed to manage the complexity of large software projects and to ensure that the software is reliable and maintainable is called software engineering and is a discipline . Whose main objective is to produce quality, reliable and efficient software.

Q .2 Explain types of software?

→ type's of software =

1.system software

2.application software

3.development software

4.mobile software

5.open source software

-> 1. System software

->Definition = The software that provides the core functions required to operate a computer or computing device is called system software. It provides a platform to run application software so that all the hardware works well together.

-> part's of system software =

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1.operating system =Operating System It manages the hardware resources such as CPU, memory, storage, provides interface to the user and acts as a platform to run application software.

->Examples . windows, macOS , Linux ,android ,iOS.

2.device drivers =Device drivers are special software programs. The driver that allows the operating system to communicate with the hardware components of a computer or device is called a device driver.

-> Examples. Graphics driver.

-> 2 . application software

-> **Definition =An application driver** is a software component that allows an application to communicate with and control a specific hardware device or peripheral. It is called an application driver.

->Which enables the operating system to interact with hardware.

->an application driver typically acts as a bridge between a particular software application.

-> Example . Ms word, MS Excel, MS power point ,etc.

-> 3. Development software

-> **Definition =The software** which is used to create software and programming and maintaining the source code is the main task of this process is called development software.

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-> **Development software is essential for creating new applications, websites, systems and other software products.**

-> **It provides developers with the tools they need to write, edit and manage code and test programs.**

-> **part's of development software =**

1.code editor

-> **features=Syntax highlighting , code completion ,error detection, and support for multiple programming languages.**

2.compiler/interpreter

-> **features=error reporting, optimization of code during compilation.**

3.project management tools

-> **features=task assignment, progress tracking, issue tracking.**

4.version control system

-> **features=branching ,merging, history tracking and conflict resolution.**

->4. Mobile software

-> **Definition=Software that is specifically designed to run on mobile devices such as smartphones and tablets is called mobile software.**

-> **This software is optimized for the small screen touch, interface and hardware cap**

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abilities of mobile devices.

->Examples. WhatsApp, YouTube, game, etc.

Q.3 what is SDLC? Explain each phase of SDLC

→ The structured process used to develop a software application is called SDLC or software development life cycle.

→ It has seven phases =

->1. **Analysis** = Before making any software, we should Analyze the software in the market so that .

->we can know whether the software we want to make is needed in the market or not

->And whether it solves the real life problem or not, for which we should analyze the market.

->2. **Planning** = After analyzing the market, we have to do planning in which who will use our software. How will it be used or how will it work. Planning has to be done for all this etc.

->3. **Designing** = After planning, we have to design the software including its system design, database design and user interface.

-> After showing it to the user, the user agrees to it. Only then is the software designed.

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-> If the user wants to change the design or any other function in it, then we have to make changes in the software.

→4. **Development/implementation** = After designing, the software is developed in which the mentioned software is made as per the consent of the user and the user can use it.

-> In this way any software is developed and implemented.

→5. **Deploy/testing** = After development, the software is tested which is done by quality analyst testers. There are two types of testing in it, first is manual testing and second is automatic testing.

-> In manual testing, the tester himself checks each function and in automatic testing, the tester makes a script and gives it to the software.

-> If there is any kind of bug in the software, the tester will raise a ticket. Which will go to the developer and the developer will solve it and send it back to the tester and the tester will test it again and if the bug is not solved, it will go back to the developer.

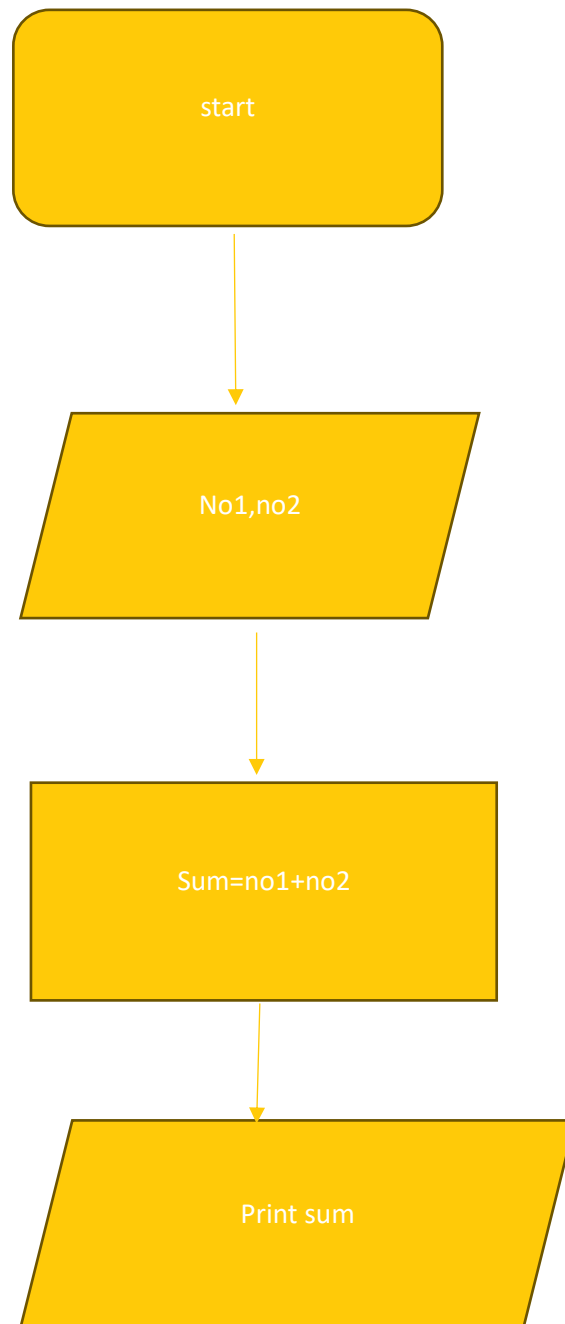
-> If the bug is solved, the ticket will be closed and this is how testing is done.

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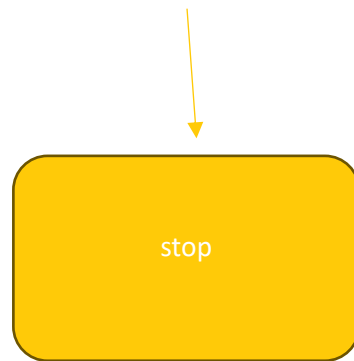
→ **6.Maintain** = After testing, the software is maintained. Maintenance is an important phase in which bug fixes, updates and enhancement, performance optimization, security maintenance, backup and recovery, user support and training, monitoring and reporting etc. are maintained.

Q 5. What is flow chart? Create a flowchart to make addition of two numbers.

→



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Q 4 .What is DFD? Create a DFD diagram on Flipkart

→ **The way data moves through a system or process is called a DFD (data flow diagram).**

→ **A data flow diagram (DFD) is a visual representation.**

→ **DFD (data flow diagram) on Flipkart :-**

Customer prices

Item to purchase prices

items and prices

Item id

**Identify
item**

**Look up
prices**

**Computer total
Cost of order**

amount to be paid

customer

**payment
receipt**

**Settle transaction
And issue Receipt**

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Q6. What is use case diagram? create a use -case on bill payment on paytm.

→ Which shows the interaction between users and the system. It is called use case diagram.

→ Use case diagram that provides a high-level overview of the functional requirements of the system.

Use case diagram :-

