

Prepared By:

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PROGRAMING FUNDAMENTALS

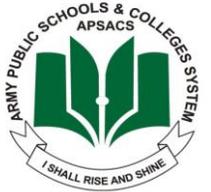
Topics:

**ADVANCED TECHNIQUES FOR
TESTING AND DEBUGGING**

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KNOWLEDGE IS POWER

ADVANCED TECHNIQUES FOR TESTING AND DEBUGGING



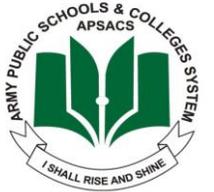
SLOs:

At The End of The Lesson Students Will Be Able to:

- Describe Unit Testing
- Explain debugging

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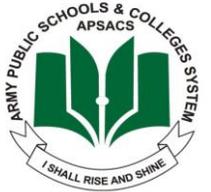


3.5.1 Unit Test

In software development, unit test is a crucial activity to ensure that every module of code functions properly, i.e. the code performs as desired. Unit tests are intended to test each line of code to make sure it functions properly. Error detection at an early stage is critical to prevent more serious issues in the later stages.

Unit test also help in outlining function of every section of code. This makes it easier for developers to understand and maintain their code. If the unit tests continue to pass, you may be certain that the primary functionality will continue to function even after you make significant modifications or rearrange the code.

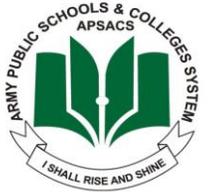
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Unit test can be applied to a function, a module or even to a single line of code. For instance, a mathematical formula is to be incorporated to calculate Zakat of yield from an agriculture land. So, the written formula needs to be tested by the developer for different values based on different possible scenarios; till this line of code passes multiple unit tests. Hence, unit tests ensure the quality of code, by providing developers the confidence in making changes, identify errors early and facilitate code management.

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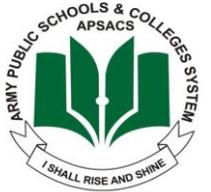
3.5.2. Debugging Allows to Analyze the Code

Debugging is useful as:

- Debugging identifies flaws in the code that might affect the layout or functionality of your webpage.
- Debugging allows you to observe step-by-step operation of your code.
- You may create your website more quickly by identifying and rectifying mistakes right away.

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Breakpoint:

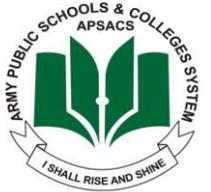
Assume you are monitoring a certain line of code where you think that something is dubious. The application pauses at breakpoints and allows you to examine the code (variable values, data flow, etc.):

Watchpoint:

In a watchpoint, you establish a rule (for example, whether the value is utilized or changed) on variables or expressions. The software pauses at that particular watchpoint if the rule is followed.

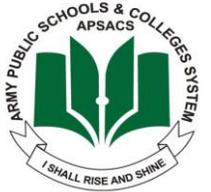
Breakpoints and watchpoints can indicate issues in the code that may be affecting the functionality of your website by highlighting issues and errors.

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Q&A
QUESTIONS &
ANSWERS

ACTIVITY

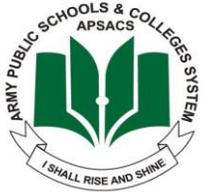


Verbal Questions:

1. What is an array?
2. What is similar between array and list?
3. What is difference between array and list?

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AFL STRATEGIES



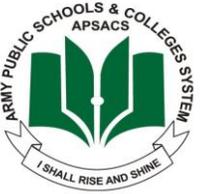
Class Discussion,

Brainstorming,

Feedback and Reflection

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HOME WORK



Reading Text Book Page Number 105-109

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**THANK
YOU**