Experiment No. - 1

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Subject Name: Software Testing Lab **Subject Code: 20CSP-380**

- **Aim/Overview of the practical:**

  Testing principles through illustrations with respect to different SDLC Models.

1. Waterfall Model:

In the waterfall model, testing is performed after the development phase. The testing phase starts after the development phase is completed. The testing phase can only start when all the required development work is completed.

The sequential phases in Waterfall model are –

- Requirement Gathering and analysis
- System Design
- Implementation
- Integration and Testing
- Deployment of system
- Maintenance

Illustration:

```rust
Development Phase  ->  Testing Phase
```

2. Agile Model:

In an Agile model, testing is performed iteratively and incrementally throughout the development process. Testing is an integral part of each iteration, and it begins as soon as a small portion of the software is developed.

Agile Manifesto principles-

- **Individuals and interactions**
- **Working software**
- **Customer collaboration**

- **Responding to change**

Illustration:

```rust
Iteration 1: Development -> Testing
Iteration 2: Development -> Testing
...
Iteration N: Development -> Testing
```

3. Spiral Model:

In the Spiral model, testing is performed in each iteration along with the development. The testing phase is also an integral part of each iteration, and it begins as soon as a small portion of the software is developed.

- Identification
- DESIGN
- CONSTRUCT OR BUILD
- EVALUTION AND RISK ANALYSIS

Illustration:

```rust
Iteration 1: Development -> Testing
Iteration 2: Development -> Testing
...
Iteration N: Development -> Testing
```

4. V Model:

In the V model, testing is performed in parallel with the development phase. For each development phase, there is a corresponding testing phase, and these two phases are performed in parallel.

- Requirements Gathering and Analysis:
- Design:

- Implementation:
- Testing:
- Deployment:
- Maintenance:

Illustration:

```rust
Requirements -> Design -> Development -> Testing
                          |               |
                          v               v
                    Integration      System Testing
```

Evaluation Grid (To be created per the faculty's SOP and Assessment guidelines):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day).		
2.	Post-Lab Quiz Result.		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		
	Signature of Faculty (with Date):	Total Marks Obtained:	