

# 10 Lecture - CS401

## Important Subjective

### 1. **What is a debugger and how does it work?**

Answer: A debugger is a software tool that allows developers to identify and fix errors in their programs. It works by enabling developers to pause program execution at specific points in the code, examine the state of the system, and modify program behavior.

### **What is a single step interrupt and how does it help with debugging?**

Answer: A single step interrupt is a debugging technique that allows developers to execute a program one instruction at a time and examine the state of the system after each instruction. It helps with debugging by enabling developers to quickly and easily identify errors and correct them in a timely and efficient manner.

### **What is a breakpoint and how does it help with debugging?**

Answer: A breakpoint is a debugging technique that allows developers to pause program execution at a specific point in the code. It helps with debugging by enabling developers to examine the state of the system at a specific point in the code and identify errors.

### **What is a watchpoint and how does it help with debugging?**

Answer: A watchpoint is a debugging technique that allows developers to pause program execution when a specific memory location is accessed. It helps with debugging by enabling developers to identify errors related to memory access.

### **What is the difference between a breakpoint and a watchpoint?**

Answer: A breakpoint pauses program execution at a specific point in the code, while a watchpoint pauses program execution when a specific memory location is accessed.

### **How does a debugger help with optimizing program performance?**

Answer: A debugger can help with optimizing program performance by enabling developers to identify bottlenecks in the code and make necessary changes to improve performance.

### **What is the role of a debugger in testing and debugging software?**

Answer: The role of a debugger in testing and debugging software is to enable developers to identify and fix errors in their programs and ensure that the software works as intended.

### **What is the importance of using a single step interrupt in debugging?**

Answer: Using a single step interrupt in debugging is important because it enables developers to execute a program one instruction at a time and examine the state of the system after each instruction, making it easier to identify errors.

### **How can a debugger be used to debug multithreaded applications?**

Answer: A debugger can be used to debug multithreaded applications by enabling developers to pause program execution at specific points in the code and examine the state of each thread.

### **What are some common features of a debugger?**

Answer: Some common features of a debugger include the ability to set breakpoints and

watchpoints, examine the state of the system, modify program behavior, and optimize program performance.