

INSTRUCTIONS

- You have 10 minutes to complete this quiz.
- The exam is closed book, closed notes, closed computer, closed calculator.
- Mark your answers **on the exam itself**. We will *not* grade answers written on scratch paper.
- For multiple choice questions, fill in each option or choice completely.
 - means mark **all options** that apply
 - means mark a **single choice**

| | |
|---|-------|
| Last name | |
| First name | |
| Student ID number | |
| CalCentral email (_@berkeley.edu) | |
| Discussion Section | _____ |
| <i>All the work on this exam is my own.</i> (please sign) | |

0. **Your thoughts?** How are you feeling this week?

1. Yes, No, but Sometimes Maybe?

Fill in the environment diagram that results from executing the code below until the entire program is finished, an error occurs, or all frames are filled. *You may not need to use all of the spaces or frames.*

A complete answer will:

- Add all missing names and parent annotations to all local frames.
- Add all missing values created or referenced during execution.
- Show the return value for each local frame.

You must list all bindings in the order they first appear in the frame.

| | | | | | | | | | | | |
|--|---|-------|--|-------|-------|--|-------|-------------------------------------|--|-------|------------------------------------|
| <pre>def yes(no): yes = 'no' return no no = 'no' def no(no): return no + yes(no) yes = yes(yes)(no)('ok')</pre> | <p>Global frame</p> <table border="1"> <tr> <td>yes</td> <td> </td> <td>_____</td> </tr> <tr> <td>no</td> <td> </td> <td>_____</td> </tr> </table> | yes | | _____ | no | | _____ | <p>func yes(no) [parent=Global]</p> | | | |
| yes | | _____ | | | | | | | | | |
| no | | _____ | | | | | | | | | |
| | <p>f1: _____ [parent= _____]</p> <table border="1"> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>Return Value</td> <td> </td> <td>_____</td> </tr> </table> | _____ | | _____ | _____ | | _____ | Return Value | | _____ | <p>func no(no) [parent=Global]</p> |
| _____ | | _____ | | | | | | | | | |
| _____ | | _____ | | | | | | | | | |
| Return Value | | _____ | | | | | | | | | |
| | <p>f2: _____ [parent= _____]</p> <table border="1"> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>Return Value</td> <td> </td> <td>_____</td> </tr> </table> | _____ | | _____ | _____ | | _____ | Return Value | | _____ | |
| _____ | | _____ | | | | | | | | | |
| _____ | | _____ | | | | | | | | | |
| Return Value | | _____ | | | | | | | | | |
| | <p>f3: _____ [parent= _____]</p> <table border="1"> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>Return Value</td> <td> </td> <td>_____</td> </tr> </table> | _____ | | _____ | _____ | | _____ | Return Value | | _____ | |
| _____ | | _____ | | | | | | | | | |
| _____ | | _____ | | | | | | | | | |
| Return Value | | _____ | | | | | | | | | |
| | <p>f4: _____ [parent= _____]</p> <table border="1"> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>_____</td> <td> </td> <td>_____</td> </tr> <tr> <td>Return Value</td> <td> </td> <td>_____</td> </tr> </table> | _____ | | _____ | _____ | | _____ | Return Value | | _____ | |
| _____ | | _____ | | | | | | | | | |
| _____ | | _____ | | | | | | | | | |
| Return Value | | _____ | | | | | | | | | |