CS 161
Intro to CS I

More Variables, Input, and Conditions

Odds and Ends

- Peer Reviews due Thursday, 11:59pm
  - Use notepad or any text editor to open
- Get Assignment 1 demoed

- **Study Sessions LINC 268:**
  - Tuesdays: 5-6:30pm
  - Wednesdays: 6-7:30pm
  - Thursdays: 7-8:30pm

Reflections

- What are C++ primitive types?

- What is an acceptable C++ variable name?

- What is an operand?

- What is an lvalue vs. rvalue?

Printing Variables/Reading Into Variables

- C++: **cout**
  - Example:

    std::cout << "The integer value is: "<< value;

    variable to print

  - What about the newline?

- C++: **cin**
  - Example:

    std::cin >> value;

Variables Demo...

rand() demo...

Constants

- What is a constant?
- How do we define a constant?
  - Use of a macro
    - #define
    - Placed at top of program
    - No semicolon at end
    - Example: **#define MAX_SIZE 100**
  - Use of const
    - Same as declaring variable but const
    - Example: **const int MAX_SIZE = 100;**

Constants Demo...

Additional Operators

- Common operation: fetch/store same variable

  var=var + 2; //increment variable contents

  var=var * 2; //double variable contents

  – operator/assignment combination (all ops supported):

    var += 2;

    var *= 2;

- Pre/Post increment/decrement: ++ and −−

  – Example: age++ vs. ++age

Demo...

Prediction

- What are conditional statements?

- How do we implement these in C++?

Decisions in Life

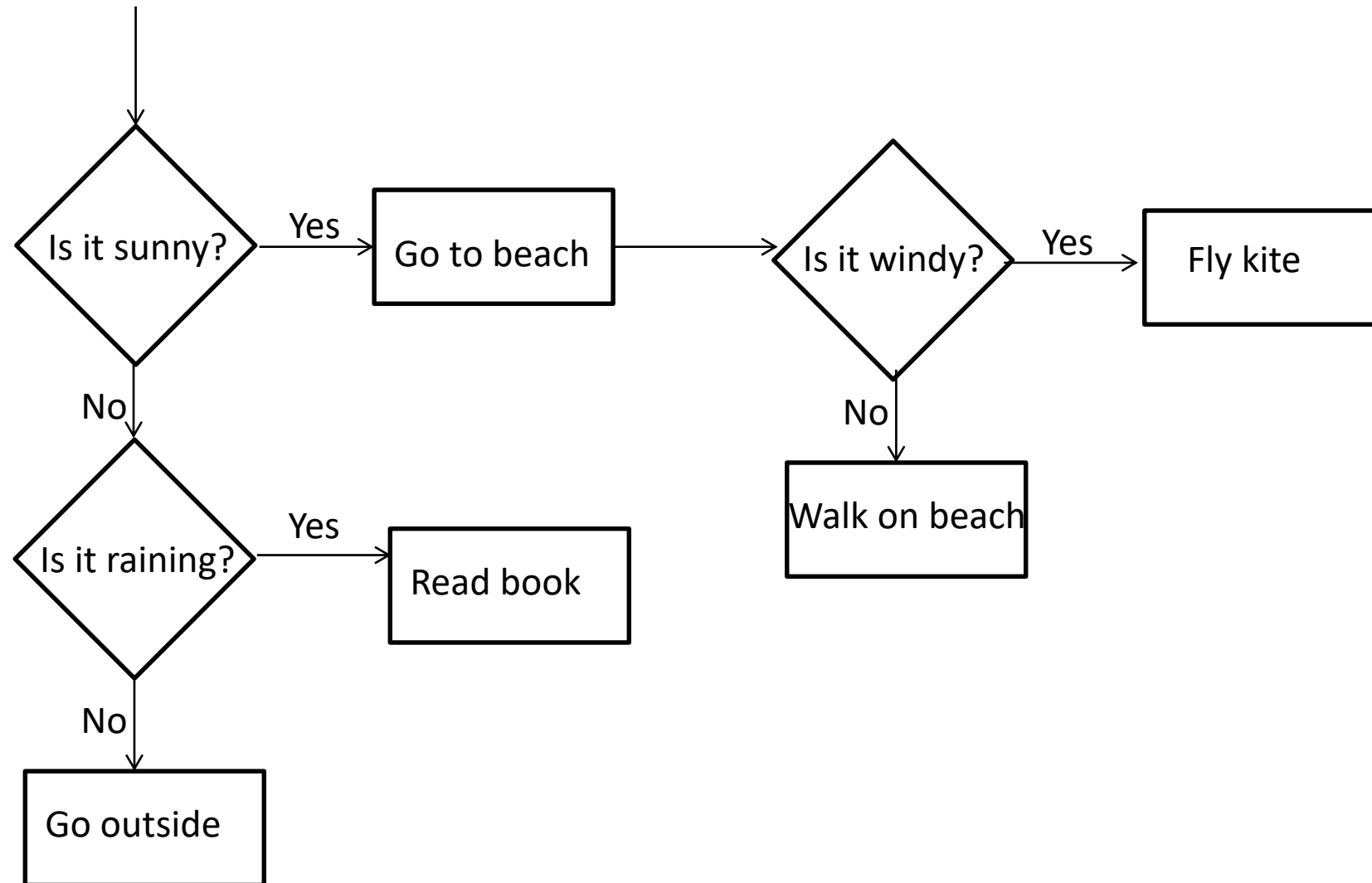- What is a decision?
- When do we make decisions?
- How do we make decisions?

  If it is sunny today

    then I'll go to the beach and fly a kite

  Else if it is raining today

    then I'll stay inside and read a book

  Else if it is snowing

    then I'll go to the mountains to ski

Decisions within Decisions

- What happens if there is no wind at the beach?
- How does this change our decisions?

  If it is sunny today

      then I'll go to the beach

      if it is windy at the beach

          then I'll fly a kite

      if it is not windy at the beach

          then I'll walk on the shore

Flow chart for decisions

Decisions in our programs

- Use an if/else

```
if (<expression>) {
    <statement>;

    …

    <statement>;
}
else {
    <statement>;

    …
}
```

What is the <expression>?

Could be a relational expression:

   <expression> <relational op> <expression>

- Relational Ops

   == - equal to

   != - not equal to

   < - less than

   > - greater than

   <= - less than or equal to

   >= - greater than or equal to

If/Else Demo...