Types of User Errors

There is an goal behind every action a user takes, based on their mental model.

Slip – When the user has the *correct mental model*, but takes the *wrong action*.

Mistake – When the user has the *incorrect mental model*. 
Slips

Click the wrong button. I know I want to continue, but click No instead.
Mistake

Waiving an Xbox game controller like a motion-sensitive Wii remote.

My mental model is that I can interact by moving the controller, not clicking buttons.
Slips vs Mistakes

Slips – typically easier to detect.
Capture errors
Description errors
Data-driven errors
Associative action errors
Loss of activation errors
Mode errors

Mistakes – harder to detect
Errors in logic
Incorrect mental model
Capture Error

A slip where a more frequent and more practiced behavior takes place when a similar, but less familiar, action was intended. Most often when two actions have similar “initial stages” You find yourself completing the more familiar of the two.

Examples:
Telling someone your home phone number when you intended to give your work number
Typing my CatId password at my bank website login.
Driving to work on Saturday morning, instead of driving to the store.
Description Error

Performing the right action for the wrong object.

Occurs most often when the two objects are physically near each other

Examples:
Pouring your orange juice on your cereal
Clicking the tab/button right next to the one you intended to click
Intending to grab your glass to get a drink but grabbing the salsa jar instead
Data-Driven Error

“When an automatic routine applies the wrong information because the wrong information was immediately available to perception.”

Sensory reactions that, while they may be correct in and of themselves, arrive at the wrong time and interrupt the current process.

Examples:
A dog barking at a non-threatenning noise.
Filling in fields incorrectly in a data form.
Associative Action Error

An error that occurs when a thought or related idea interferes with the current action when it isn’t appropriate (like a Freudian slip).

Examples:
A waitress hands you your order and says “enjoy your meal” and you say “thanks, you too.”

You mean to ask your mother to pass the potatoes and instead you say, “You’ve ruined my life.”
Loss of Activation Error

An error that occurs when, after beginning a goal-directed behavior, the reason for starting it is forgotten.

Examples:

You perform a web search only to forget what you were looking for.

You walk to the kitchen to get a snack and then can’t remember what you were doing.

Going to drop the pasta into the boiling water and realizing you hadn’t ever turned on the stove.
Mode Error

A slip where a user performs an action appropriate to one situation in another situation, common in software with multiple modes.

Examples:
Drawing software, where a user tries to use one drawing tool as if it were another (e.g. brushing with the Fill tool)
Text editors with both a command mode and an insert mode, where a user accidentally types commands and ends up inserting text.
Holding a cup of coffee and then, without thinking, checking the time on your watch.
Preventing errors

Avoiding slips
  Different things should look different
  Consistent confirmation is not useful
  Immediate confirmation may not be useful

Simplify tasks
  Make task structure narrow or shallow
More ways to prevent errors

Support recovery
  Undo and backups
  Support exploration toward a goal

Prevent errors with forcing functions — failure in one step means later steps can’t be done
  Make illegal actions unavailable
  Disable buttons or menus
  Turn illegal actions into legal ones
Design Team

Interaction Designer (Generator)
Leads the visualization of how the system will behave.
Articulates the design in visual terms.

“Must have the ability and drive to visualize concrete solutions.”
Design Team

Interaction Designer (Synthesizer)
Leads the analysis and communication of the design.
Develops from the narratives to analyze how the system should work.

“Identify problems that are not evident from the structural design”
Design Team

Visual Interface Designer

Responsible for the visual aspects of the system.

Does the interface provide a good representation of the current state and provides cues to functionality.

Also responsible for the look and feel of the system.

“Maximize usability while maximizing desireability.”
Design Team

Industrial Designer

Does the physical hardware design.
Design Team

Design Team Lead
Senior designer that organized the design team.
Design Team

Product owner
  Ultimate authority on the product.

Business or system analyst
  Understands business/system processes.

Subject Matter Experts (SME)
  Users that know what the system should do.

User Acceptance Testers (UAT)
  Users that test the system.