

Detailed Functional Layout

Specify the functional capabilities of the system in detail. This is at a more technical level whereas the preliminary functional layout was at a managerial level.

Determine the EXACT information to gather in each User Interaction sub-functional component as specified in the Preliminary Functional Layout.

The information to gather from each major section of the CADDIE system can be determined by first considering the assertions to make about the course, player, and shot. For example, what is it that the CADDIE system would like to know about the environment? Well, is it raining for starters? This can be translated into an assertion, GOLF-COURSE-WET if in fact it has been raining. This is the logic that is used to determine the exact path to lead the user down.

Environment Description (Weather, etc.)

Assertions

- ASSERT GC-ENV-WET

Sub-Assertions

- ASSERET ENV-NOT-RAINING

Assert GC-WET

- Question; Is it raining?
 - If YES, ASSERT GC-WET
 - If NO, ASSERT ENV-NOT-RAINING
- Question; (If it is not raining) Has it rained recently and is the grass wet?
 - If YES, ASSERT GC-WET

Course Description (Course Difficulty, Slope Rating, etc.)

Assertion

- ASSERT GC-DES-EASY
- ASSERT GC-DES-AVERAGE
- ASSERT GC-DES-HARD

Sub-Assertions

- DES-DIST-SHORT
- DES-DIST-AVERAGE
- DES-DIST-LONG
- DES-SLOPE-LOW
- DES-SLOPE-AVERAGE

- DES-SLOPE-HIGH
- DES-PGARATE-EASY
- DES-PGARATE-AVERAGE
- DES-PGARATE-HARD

Assert DES-DIST-SHORT, DES-DIST-AVERAGE, DES-DIST-LONG

- Question; What is the total length in yards of the golf course?
Make sure to consider what tees you will play from.
 - If < 6200 yards, ASSERT DES-DIST-SHORT
 - If > 6200 and < 6800 yards, ASSERT DES-DIST-AVERAGE
 - If < 6800 yards, ASSERT DES-DIST-LONG

Assert DES-SLOPE-LOW, DES-SLOPE-AVERAGE, DES-SLOPE-HIGH

- Question; What is the slope rating for this golf course?
 - If < 100, ASSERT DES-SLOPE-LOW
 - If > 100 and < 120, ASSERT DES-SLOPE-AVERAGE
 - If < 120, ASSERT DES-SLOPE-HIGH

Assert DES-PGARATE-EASY, DES-PGARATE, DES-PGARATE

- Question; What is the PGA Rating for this golf course?
 - If < 70, ASSERT DES-PGARATE-EASY
 - If > 70 and < 72, ASSERT DES-PGARATE-AVERAGE
 - If < 72, ASSERT DES-PGARATE-HARD

Assert GC-DES-EASY

- If DES-DIST-SHORT and DES-SLOPE-LOW and DES-PGARATE-EASY
 - ASSERET GC-DES-EASY
- If DES-DIST-AVERAGE and DES-SLOPE-LOW and DES-PGARATE-EASY
 - ASSERET GC-DES-EASY
- If DES-DIST-SHORT and DES-SLOPE-AVERAGE and DES-PGARATE-EASY
 - ASSERET GC-DES-EASY
- If DES-DIST-SHORT and DES-SLOPE-LOW and DES-PGARATE-AVEARGE
 - ASSERET GC-DES-EASY

Assert GC-DES-AVERAGE

- If DES-DIST-AVERAGE and DES-SLOPE-AVERAGE and DES-PGARATE-AVERAGE
 - ASSERET GC-DES-AVERAGE
- If DES-DIST-SHORT and DES-SLOPE-AVERAGE and DES-PGARATE-AVERAGE
 - ASSERET GC-DES-AVERAGE
- If DES-DIST-AVERAGE and DES-SLOPE-LOW and DES-PGARATE-AVERAGE
 - ASSERET GC-DES-AVERAGE
- If DES-DIST-AVERAGE and DES-SLOPE-AVERAGE and DES-PGARATE-EASY
 - ASSERET GC-DES-AVERAGE

- If DES-DIST-LONG and DES-SLOPE-[AVERAGE|LOW] and DES-PGARATE-[AVEARGE|EASY]
 - ASSERET GC-DES-AVERAGE
- If DES-DIST-[AVERAGE|SHORT] and DES-SLOPE-HIGH and DES-PGARATE-[AVEARGE|EASY]
 - ASSERET GC-DES-AVERAGE
- If DES-DIST-[AVERAGE|SHORT] and DES-SLOPE-[AVERAGE|LOW] and DES-PGARATE-HARD
 - ASSERET GC-DES-AVEARGE

Assert GC-DES-HARD

- If DES-DIST-LONG and DES-SLOPE-HIGH and DES-PGARATE-HARD
 - ASSERET GC-DES-HARD
- If DES-DIST-* and DES-SLOPE-HIGH and DES-PGARATE-HARD
 - ASSERET GC-DES-HARD
- If DES-DIST-LONG and DES-SLOPE-* and DES-PGARATE-HARD
 - ASSERET GC-DES-HARD
- If DES-DIST-LONG and DES-SLOPE-HIGH and DES-PGARATE-*
 - ASSERET GC-DES-HARD

Player Ability Description (Driving distance, Handicap, etc.)

Assertion

- ASSERT GC-PLAYER-BEGINNER
- ASSERT GC-PLAYER-INTERMEDIATE
- ASSERT GC-PLAYER-PRO

Sub-Assertions

- PLAYER-HNDCP-NONE
- PLAYER-HNDCP-HIGH
- PLAYER-HNDCP-MEDIUM
- PLAYER-HNDCP-LOW
- PLAYER-PLAY-FREQ
- PLAYER-PLAY-INFREQ
- PLAYER-PLAY-NEVER
- PLAYER-AVGSCR-LESS80
- PLAYER-AVGSCR-BTW80N95
- PLAYER-AVGSCR-ABV95

Assert PLAYER-HNDCP-NONE, PLAYER-HNDCP-HIGH, PLAYER-HNDCP-MEDIUM, PLAYER-HNDCP-LOW

- Question; What is your golf handicap?

- If < 10 , ASSERT PLAYER-HNDCP-LOW
- If >= 10 & < 20, ASSERT PLAYER-HNDCP-MEDIUM
- If >= 20, ASSERT PLAYER-HNDCP-HIGH
- If NONE, ASSERT PLAYER-HNDCP-NONE

(Note, the following questions are only asked if the player does not have a handicap)

Assert PLAYER-PLAY-FREQ, PLAYER-PLAY-INFREQ, PLAYER-PLAY-NEVER

- Question; How often do you play, Please enter the number for your answer ?
 1. Once a week
 2. Twice a week or more
 3. Once a month
 4. Twice a month
 5. A couple of times a year
 6. Never played before
 - If 1 or 2 or 4 , ASSERT PLAYER-PLAY-FREQ
 - If 3 or 5, ASSERT PLAYER-PLAY-INFREQ
 - If 6, ASSERT PLAYER-PLAY-NEVER

Assert PLAYER-AVGSCR-LESS80,PLAYER-AVGSCR-BTW80N95,PLAYER-AVGSCR-ABV95

- Question; What would you say is your average score for the last ten times you have played? If you have played less than ten times then just average all the scores you have.
 - If < 80, ASSERT PLAYER-AVGSCR-LESS80
 - If >= 80 and < 95, ASSERT PLAYER-AVGSCR-BTW80N95
 - If >= 95, ASSERT PLAYER-AVGSCR-ABV95

Assert GC-PLAYER-BEGINNER

- If PLAYER-HNDCP-HIGH
 - ASSERT GC-PLAYER-BEGINNER
- If PLAYER-HNDCP-NONE and PLAYER-PLAY-NEVER
 - ASSERT GC-PLAYER-BEGINNER
- If PLAYER-HNDCP-NONE and PLAYER-PLAY-INFREQ and PLAYER-AVGSCR-ABV95
 - ASSERT GC-PLAYER-BEGINNER

Assert GC-PLAYER-INTERMEDIATE

- If PLAYER-HNDCP-MEDIUM
 - ASSERT GC-PLAYER-INTERMEDIATE
- If PLAYER-HNDCP-NONE and PLAYER-PLAY-INFREQ and PLAYER-AVGSCR-[BTW80N95|LESS80]
 - ASSERT GC-PLAYER-INTEREMEDIATE

- If PLAYER-HNDTCP-NONE and PLAYER-PLAY-FREQ and PLAYER-AVGSCR-[ABV95|BTW80N95]
 - ASSERT GC-PLAYER-INTEREMEDIATE

Assert GC-PLAYER-PRO

- If PLAYER-HNDTCP-LOW
 - ASSERT GC-PLAYER-PRO
- If PLAYER-HNDTCP-NONE and PLAYER-PLAY-FREQ and PLAYER-AVGSCR-LESS80
 - ASSERT GC-PLAYER-PRO

SHOT RECOMMENDATION SEQUENCE

Player Course Placement (Par of hole, Distance to green, etc.)

Assertion

- ASSERT GC-POS-TEE
- ASSERT GC-POS-FAIRWAY
- ASSERT GC-POS-GREEN
- ASSERT GC-POS-FRINGE
- ASSERT GC-POS-SANDBUNKER
- ASSERT GC-POS-FAIRWAYROUGH
- ASSERT GC-POS-FAIRWAYTREES

- ASSERT GC-DIST-LESS5F
- ASSERT GC-DIST-10F
- ASSERT GC-DIST-15F
- ASSERT GC-DIST-20F
- ASSERT GC-DIST-25F
- ASSERT GC-DIST-ABV25F

- ASSERT GC-DIST-LESS10Y
- ASSERT GC-DIST-20Y
- ASSERT GC-DIST-30Y
- ASSERT GC-DIST-40Y
- ASSERT GC-DIST-50Y
- ASSERT GC-DIST-60Y
- ASSERT GC-DIST-70Y
- ASSERT GC-DIST-80Y
- ASSERT GC-DIST-90Y
- ASSERT GC-DIST-100Y
- ASSERT GC-DIST-110Y
- ASSERT GC-DIST-120Y
- ASSERT GC-DIST-130Y
- ASSERT GC-DIST-140Y
- ASSERT GC-DIST-150Y

- ASSERT GC-DIST-160Y
- ASSERT GC-DIST-170Y
- ASSERT GC-DIST-180Y
- ASSERT GC-DIST-190Y
- ASSERT GC-DIST-200Y
- ASSERT GC-DIST-210Y
- ASSERT GC-DIST-220Y
- ASSERT GC-DIST-230Y
- ASSERT GC-DIST-240Y
- ASSERT GC-DIST-250Y
- ASSERT GC-DIST-ABV250Y

Sub-Assertions

- NONE

Assert Player Position, GC-POS-???

- Question; Where are you on the golf course?
 1. Tee
 2. Fairway
 3. Green
 4. Rough
 5. Fringe
 6. Sand Bunker
 7. Trees
 - If < 1 , ASSERT GC-POS-TEE
 - etc.

Assert Player Distance From Hole, GC-DIST-??

If on green;

- Question; How many feet are you from the hole?
 - If < 5 , ASSERT GC-DIST-LESS5F
 - If > 5 and < 10, ASSERT GC-DIST-10F
 - etc.

If not on green;

- Question; How many yards are you from the hole? If you do not have a clear shot to the green, because of a dogleg, etc., answer how many yards are available for a clear, unobstructed shot.
 - If < 50 , ASSERT GC-DIST-LESS50Y
 - If > 50 and < 60, ASSERT GC-DIST-60Y
 - etc.

Ball Placement (Feet above or below the hole, etc.)

Note, these assertions will only be made if the player is in the fairway, rough, or trees.

Assertions

- ASSERT GC-BALLPOS-ABOVEFEET
- ASSERT GC-BALLPOS-BELOWFEET
- ASSERT GC-BALLPOS-ATFEET
- ASSERT GC-BALLPOS-OBSTRUCTED

Sub-Assertions

- NONE

Shot Recommendations

Recommend One Wood

- If GC-POS-TEE and GC-DIST-[230Y|240Y|250Y|ABV250Y] and GC-PLAYER-[PRO|INTERMEDIATE] and NOT GC-ENV-WET

Recommend Three Wood

- If GC-POS-[TEE|FAIRWAY] and GC-DIST-[210Y|220Y] and GC-PLAYER-[PRO|INTERMEDIATE]

Recommend Five Wood

- If GC-POS-[TEE|FAIRWAY] and GC-DIST-200Y and GC-PLAYER-[PRO|INTERMEDIATE]
- If GC-POS-[TEE|FAIRWAY] and GC-DIST-[190Y|200Y|210Y|220Y|230Y|240Y|250Y|ABV250Y] and GC-PLAYER-BEGINNER

Recommend Three Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-190Y and GC-PLAYER-[PRO|INTERMEDIATE]
- If GC-POS-ROUGH and GC-DIST-[200Y|210Y|220Y|230Y|240Y|250Y|ABV250Y] and GC-PLAYER-[PRO|INTERMEDIATE]
- If GC-POS-TREES

Recommend Four Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-180Y and GC-PLAYER-[PRO|INTERMEDIATE]

Recommend Five Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-170Y and GC-PLAYER-[PRO|INTERMEDIATE]
- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[170Y|180Y] and GC-PLAYER-BEGINNER
- If GC-POS-ROUGH and GC-DIST-[190Y|200Y|210Y|220Y|230Y|240Y|250Y|ABV250Y] and GC-PLAYER-BEGINNER

Recommend Six Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-160Y and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Seven Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-150Y and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Eight Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-140Y and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Nine Iron

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[110Y|120Y|130Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Pitching Wedge

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[90Y|100Y|110Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Pitching Wedge 3/4 Swing

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[70Y|90Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Pitching Wedge 1/2 Swing

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[50Y|70Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Pitching Wedge 1/4 Swing

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[20Y|30Y|40Y|50Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Pitching Wedge Chip

- If GC-POS-[TEE|FAIRWAY|ROUGH] and GC-DIST-[LESS10Y|20Y] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Putter Full Swing

- If GC-POS-[GREEN|FRINGE] and GC-DIST-ABV25F and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Putter 3/4 Swing

- If GC-POS-[GREEN|FRINGE] and GC-DIST-[20F|15F] and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Putter 1/2 Swing

- If GC-POS-[GREEN|FRINGE] and GC-DIST-10F and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]

Recommend Putter 1/4 Swing

- If GC-POS-[GREEN|FRINGE] and GC-DIST-LESS5F and GC-PLAYER-[PRO|INTERMEDIATE|BEGINNER]