After you download the program, you will find a folder C:\Program Files\Casino Marketing Manager. In that folder you will find a Help Manual in pdf format. This explains many of the functions of the program.

The program has several modules listed across the top of the Main Menu. Those include Dice, Roulette, Limited Bankroll, Basic Strategy, Dead Chips, Multiple Game Analysis, and Help. These are all accessible from the Main Menu. The Main Menu is the screen that you first see. Each module allows you to go back to the Main Menu.

- Main Menu
    - First I will explain how discounts on loss work. If you are offering a discount on loss, you know that you will give some percentage back of the player's actual loss. However, you really want to know the discount's effect on the player's disadvantage. It is often said that "we only give discounts when a player loses" but this is false. Let me give you an example: Let's say you only have double zero games in your casino and a premium player wants a single zero game. We know the double zero disadvantage is 5.26% and the single zero's disadvantage is 2.7%. What you can do, and many have, is to place a dolly, or a lammer, on the double zero and tell the player that, if the double zero hits, it is a no-roll. This effectively creates a single zero game out of a double zero game. Now, what if the player played two hours and the double zero never showed? Would we say that the player must have been playing at a 5.26% disadvantage because the "00" never hit? No. Although it never hit this session, it could have. Therefore it came into play with every spin. The same with discounts. Even when the player wins, he is playing a game with an "adjusted casino advantage" because of the discount.
    - Theoretical casino win is nothing more than the average of all possible outcomes. When discounts are involved, the player is paid 100% when he wins. However, when he loses, he loses something less than the actual loss. Consequently, when we offer a discount, we have a new average. And the effect is a reduction in casino advantage much greater than the stated discount.
        - If a 10% discount only cost 10% of the theoretical then why not offer it on a per hand basis? That is, when the player wins (just under 50% of the time) he wins 100%, when the player loses (just over 50% of the time) he loses 90% of his wager. You can easily see that this can't be done. So, you must know what affect your discount has on the game's advantage over the player.
    - The effect on casino advantage is determined by: game played (bet made), length of play, and volatility of betting. Here is an example: assume a player is playing baccarat, betting the player, and plays 1,000 total hands. He bets $10,000 for 200 hands, $500 for 500 hands, and $100 for 300 hands. If you enter this into the Main Menu screen the program will calculate and then display:
        - $28,160 Theoretical (average win per trip)
        - $134,950 Standard Deviation (amount Actual will vary from Theoretical)
        - $2,880 Average Bet
        - 1.235% Casino Advantage
        - .58 Probability of Player Losing (58% of player trips will result in the player losing)
    - Now go to "Multiple Game Analysis." What if you wanted to know the probability of the casino losing $100,000? Click on "Win/Loss Probability" button. Enter $100,000 in

"Casino Loss of at Least" field. Hit calculate. There is a 17% probability of the casino losing $100,000 or more (17% or 1 in 5.88 trips).

- Now, let's assume the same player played single zero roulette. Go to the Roulette...Single 0 Menu. He bets $500 per spin for 300 spins on the number 3 (straight-up). Once you hit calculate you will find:

  - $4,054 Theoretical for the Roulette play
  - $50,557 Standard Deviation
  - 2.7% Casino Advantage
  - .53 Probability of Player Loss

- Now go back to Multiple Game Analysis. The combined results of both plays are:

  - $32,214 Theoretical
  - $144,109 Standard Deviation (amount Actual will vary from Theoretical)
  - $1,869 Average Bet
  - 1.326% Casino Advantage
  - .59 Probability of Player Losing

- You can calculate the probability of any player win or casino loss amount. Just click "Win/Loss Probability" button.

- On this player, let's give him a 15% discount on all losses. Click "Rebate Entry." Enter 15% in the " "% on all losses field. Click continue.

  - You find that a 15% discount on loss actually returned **34.9%** of the casino's advantage. Click "Expense Entry" and enter the following:

    - $3,000 room
    - $2,000 food
    - $500 rep commission
    - $2,500 airfare
    - click 8% gaming tax (you can now enter any tax rate but clicking other)
    - The profit on this player after discount and expenses is $11,283.
    - Now print the analysis.

- You can combine various bets, various games, and various players on the "Multiple Game Analysis" form.

Let's assume you have a player who has a $5,000,000 credit line and wants a $250,000 betting limit in baccarat. The program lets you assess your risk. This is how I would do it:

- We have to make several assumptions:

  - We don't know how long he will play.
  - He doesn't have to bet $250,000 every hand.
  - He can quit whenever he wants.
  - He may have access to more money as well but we will assume that if he loses the $5,000,000 he is through.

- Go to the Limited Bankroll...Baccarat form and enter:

- $250,000 bet per round
- Select Banker (more conservative)
- Click "Both Win and Loss Limits"
- Enter $5,000,000 Maximum Player Loss
- Enter $5,000,000 Maximum Player Win
- Enter 1,000 Maximum Player Rounds
- The program will calculate every possible outcome where the player bets under the above assumptions
- The results
  - $1,161,438 Average Player Loss (theoretical)
  - 439.1 average rounds played per trip
  - .62 probability of player losing on any given trip
- You must always enter a Maximum Win Limit, Maximum Loss Limit, or Both Limits **and** maximum player rounds (i.e., hands) per trip
  - If you enter No Maximum Win Limit you will find the players average trip will last 640 hands and with a 71% chance the bettor will lose. (Note: this doesn't mean he will always lose $5,000,000 because sometimes he will leave when he hits the 1,000 maximum hand limit)

- I would then take this information to the Main Menu. We need to calculate the player's standard deviation

  - Enter $250,000 Bet Per Round
  - Enter 439 Rounds
  - Then click Calculate. The program shows:
    - $1,161,053 Theoretical (the difference is the rounding)
    - $4,857,797 Standard Deviation
    - .59 probability of losing (the difference is that the Main Menu approximates the distribution while the limited bankroll form actually calculates every possibility. However, you can see there is little difference.)
  - Go to the Multiple Game Analysis form:
    - Click Win/Loss Probability
    - Enter Casino Loss of at Least $1,000,000. This player will win at least $1,000,000 on 33% of trips.
    - Enter Casino Loss of at Least $2,000,000. This player will win at least $2,000,000 on 26% of trips.

You can see the possibilities. You can change all the variables to whatever you believe is more reasonable. Since we don't know what the player will do, we can at least make a guess as to our risk.

If you look at the top of the Main Menu form you will see a "Dice" link. Click on this link and you have the options: Simulation..Line Bets Only..Dice Advantages.

- Dice...Simulation:

  - Dice is the most difficult of games to track. An average bet is almost impossible to gauge and an accurate casino advantage IS impossible unless the player is the most basic. Further, in dice the casino advantage is "per decision" whereas the casino advantage in blackjack is "per hand" and "per spin" in roulette. Depending on the bet, the rolls per decision could be anywhere to 1 roll per decision to 5.68 rolls per decision.
  - The simulation model allows you to simulate various betting styles. The model then simulates the play pattern specified.
  - The model permits the odds multiples of 0x, 1x, 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x, 10x, and 3/4/5x odds.

- Many casinos now charge "Buy bet" commissions only when the bet wins. This benefit may be offered on a 4/10 buy only or 4/10 and 5/9 buys. The model allows you to simulate any variation of Buy commission policies.
- Try this. Assume you have a player who typically bets:
  - $2,000 Line Bet 3/4/5x odds
  - $4,000 Outside (4/10 & 5/9)
  - Since the player is making bets that include 4/10 & 5/9, a drop-down box appears that allows you to select your casino's buy commission policy. I am selecting the old way where commissions are charged up-front.
  - Please click "Rule Assumptions" to understand when bets are included and excluded (i.e., On or Off).
  - Simulate 10,000 trips at 40 Pass Line decisions per hour and 12 Hours Per Trip.
  - The results of my simulation were:
    - 25.8 seconds to simulate 10,000 trips
    - $54,109 Average Player Loss per trip
    - $249,210 Standard Deviation
    - 1.165% Actual Win Percentage
    - 1.249% Theoretical Win Percentage
    - $9,674 Average Wager Per toss (those tosses where the bet is "off" on the come-out is not counted)
  - Now, what if we offer this player Buy commission charges on the 4/10 ONLY when the bet wins? The results of my simulation are:
    - 25.7 seconds to simulate 10,000 trips
    - $41,298 Average Player Loss per trip
    - $250,136 Standard Deviation
    - .89% Actual Win Percentage
    - .92% Theoretical Win Percentage
    - $9,672 Average Wager Per toss (those tosses where the bet is "off" on the come-out is not counted)
- Since this is a simulation, each simulation will be slightly different than the last. The more trips simulated the more accurate the results. You can simulate 1,000,000 trips but remember a 10,000 trip simulation took 25 seconds. On my computer the 1 million trip simulation would have taken 2,500 seconds (100 x 25)
- Once the simulation is complete you can include any considered discount and expenses and then print the results.
- The simulation does not automatically list the results in the Multiple Game Analysis screen but can be manually input on the Multiple Game Analysis screen by clicking the "Manual Input" link at the top of the form.
- The simulation maintains a "Simulation Archive" link at the top of the page that saves and permits the printing of all previous simulations.

- Dice...Line Bets Only
  - This permits quick analysis of the most basic of play. Assume a player makes a line bet of $2,000 with 3/4/5x odds for 12 hours (assuming 40 decisions per hour). This is easy, just enter the bet, select the odds multiple, enter 40 decisions per hour and 12 hours, and then hit calculate. You can now enter any discount and expense.
  - But what if the player plays 12 hours but he bets $2,000 1/3rd of the time, $4,000 for 1/3rd of the time and $6,000 for 1/3rd of the time? You can use the Multiple Game Analysis to combine the play:
    - On the Line Bets Only form, enter a $2,000 line bet with 3/4/5x odds for 4 hours, click calculate. Enter a $4,000 line bet with 3/4/5x odds for 4 hours, click calculate. And finally enter a $6,000 line bet with 3/4/5x odds for 4 hours, click calculate. You can now go to the Multiple Game Analysis and the play is combined. There you can enter any possible discount and expenses.

- Dice...Dice Advantages
    - Click on this link at the top of the form and see all the different advantages per bet and casino betting rules.

On the modules where you are allowed to include a player "Rebate On Loss" you will find a calculation labeled "Non-Rebate Equivalent Bet." Here is what that means:

- A discount on loss (a.k.a. rebate on loss) effectively decreases the casino's advantage. Let me give you an example of equivalent average bets where the game's advantage has been altered.
    - Consider a Single Zero Roulette player betting $1,000 per spin. An equivalent bettor on a Double Zero Roulette game would only have to bet about $500 (actually $513) to generate the same theoretical win in the same period of time as the Single Zero Roulette player. A Single Zero game's advantage is just over 1/2 that of a Double Zero game's advantage (2.7% to 5.26%).

- Now let's assume a complicated baccarat discount; the player wants the following graduated discount:
    - 5% on Losses over $50,000
    - 10% on Losses over $150,000
    - 12% on Losses over $250,000
    - 15% on Losses over $500,000
    - What would be your cost?
    - How much would you have available for comps?
    - How much profit would you generate?
    - We will use the player's history to estimate his future trips.

- On the player's last trip he played about 12 hours. At 50 hands per hour, his betting looked something like this:
    - $2,000 x 200 hands
    - 5,000 x 50 hands
    - $7,500 x 100 hands
    - $8,000 x 500 hands
    - $10,000 x 350 hands

- You figure he will play accordingly the next trip. So how does the proposed discount on loss affect the game's advantage?

    - Go to the main screen and enter the above bets and hands played. I used baccarat banker as the side wagered. By using the Multiple Game Analysis you can be more exact by specifying the betting on each side (banker or player).

    - After the bets are entered, hit calculate. The results are:
        - $94,154 Theoretical Win
        - $253,428 Standard Deviation
        - 1.058% Casino Advantage
        - $7,417 Average Bet
        - .64 probability of player losing (64% of trips)

    - Now hit Rebate Entry. On the Rebate Schedule Form click "Variable Rebate" and enter the above graduated discount. Click continue.

    - The form now shows the effect of the proposed discount:
        - $76,422 After Rebate Theoretical Win

- 18.8% Actual Cost of Rebate (the Rebate on Loss has reduced the casinos advantage 18.8%)
- $6,021 Non-Rebate Equivalent Bet (a bettor betting **$6,021 who does not receive a discount** will generate the same theoretical win as the $7,417 bettor who does receive the discount)
- .859% After Rebate Casino Advantage
-

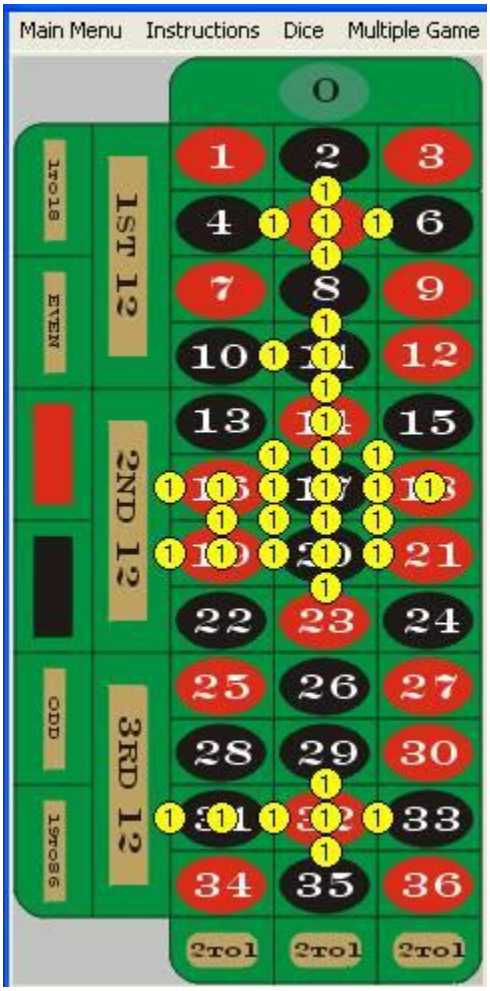
Click the Roulette...Single Zero link from the Main Menu.

- Here is how you enter the bets. First left click on a betting area:

- Enter the number of chips wagered per spot:

- Next, press "Tab" or "Enter":

- Now here is the problem. We have a big roulette player who comes to Vegas. Many of you may know this player once you see his betting style. He makes the following bets:



- Each spot typically equals $1,000. He may be betting 10 x $100 chips. Nevertheless, each spot equals $1,000. He requests a Single Zero game. He wants a discount, airfare, and a room setup that costs around $40,000 per trip. Let's assume he wants a 15% discount whenever he loses. He has a $3,000,000 credit line.

    - Enter the above bets.
    - Enter $1,000 Chip Value
    - Enter 200 Spins
    - Click Calculate. The results are:
        - $189,189 Theoretical Win
        - $634,997 Trip Standard Deviation
        - .62 Probability of Player Loss
    - Now go to the Rebate Entry form and enter:
        - 15% Rebate on All Losses
        - Click Continue
    - Go to the Expense Input form and enter:
        - $5,000 Room
        - $10,000 Food and Beverage
        - $25,000 Rep Commission (he usually has a rep that gets something)
        - $25,000 Airfare
        - $40,000 Other (for Room setup)
        - Click Continue

- You see:
  - the 15% Rebate actually reduces the casino's advantage by 28.5%
  - the after Rebate, Expenses, and Taxes profit is $21,871
- You use the model to possibly condition the play. That is, what is the minimum number of spins before you will give a rebate on loss?

I have forgotten the particulars of what his costs were but this is a real player who came in while I was at the Rio. I was the first to require a minimum number of spins for the discount. I wanted 300 but, for fear of losing the player, the President of the Rio intervened and agreed to 200 spins. You have to decide what is reasonable. Is a $634,997 Standard Deviation a reasonable risk for a $21,871 “Profit Contribution” reward?

You must not be afraid to just say "no."

The module also allows you to enter "0's Effect on Even-Money Bets." In many casinos throughout the world, if a green number hits the player loses 1/2 on his even-money wagers. Some casinos "en prison" this wager which results in the same effect. You can use the Multiple Game Analysis to combine unusual betting patterns and the same Multiple Game Analysis to calculate the probability of the casino losing or winning "x."

The same options are available on the "Roulette...Double Zero" form.

Casinos in Asia offer a program in Baccarat (most often) that is referred to as the "rolling program." I have always used the term "Dead Chip." But Rolling and Dead Chip are one in the same.

Basically, the dead chip program works just like a slot club. With a slot club we know the "coin-in" and the game's advantage. A slot club merely returns a percentage of the theoretical in cash or comps. A "dead chip" program essentially does the same. And just like the slot club, a dead chip program will allow a player to win and still receive the cash bonus. The only difference is we "estimate" the total wagered.

Let me use Baccarat..Banker Bets as an example. What if you were given a chip that can only be wagered, that is, it cannot be redeemed for cash? On average how many times can that chip be wagered before being lost and how much theoretical win is generated in the process of losing the chip? This is the basis of how the program works.

The Banker Bet loses when the player side wins. The player side wins 44.62466% of the time. Therefore, this dead chip you were given will last, on average, 2.24 wagers (1 / .4462466) before being lost. Any chip that is wagered on the Banker a total of 2.24 wagers will generate a theoretical casino win of 2.37% (2.24 x 1.058%).

So, let's assume you are given a 1% cash bonus for every dead-chip lost. What is the cost? Well, you are returning 1% of your 2.37%. In this case, you’re returning 42% of your theoretical.

- If you go to the "Dead Chip" module you can enter any bonus (in decimal) and the program will calculate the bonus' effect on the game's advantage over the player. You will see that some games just don't lend themselves to the program.
- If you enter .01 in the bonus entry field, it will calculate a casino advantage on banker bets at .612%. That is, the game’s advantage is now .612%. If the game's advantage was 1.058% and is now .612%, this means that 42% of the game's non-dead chip advantage is returned via the dead chip bonus.

Calculating the effect of rule changes in blackjack

The tab “Basic Strategy” allows one to determine how a possible rule change will affect the game’s base advantage. For example, let’s assume you currently offer a 6-deck game, house stands on soft 17, and the player cannot double after splitting. The base game, played according to basic strategy, has an advantage over the player of .54%. Further, assume you are considering allowing the player to double after splitting. What is the effect? You can enter the considered rule variation and, in this case, you will find that the game now earns at a .4% casino advantage.

If you have any questions, please email or phone.

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