

The official blog of SimplyTapp, the inventors of Host Card Emulation (HCE) technology, empowering issuers and developers to leverage mobile devices for proximity payments. Visit SimplyTapp.com to learn more.

Tuesday, January 7, 2014

Host Card Emulation Series: SwipeYours - Tap Using A Card From Your Wallet

While various Android HCE (Host Card Emulation) examples have been popping up, until now there has been no simple examples that could be easily tested with live payment terminals. SwipeYours fills this space.

SwipeYours is a small, self contained app from which your card data never leaves the phone except to make NFC payments. It uses the Visa-MSD (Magnetic Stripe Data) protocol to make tap payments. While Visa-MSD is now deprecated, it is supported by most NFC payment terminals in North America and this is unlikely to change in the near future. In Austin, TX we've successfully used SwipeYours at all of the following:

- · CVS drugstore
- McDonald's
- Jack in the Box
- Taco Bell
- Jamba Juice
- · Valero Gas Stations

Links:

- SwipeYours source code
- Direct Link to the PaymentService class
- Google Play Download

What you need to use SwipeYours:

- A magnetic stripe reader to pull your card data. These can be purchased cheaply on both Amazon and Ebay in the US.
- An NFC phone running Android 4.4+ (KitKat or above).
- A non-chipped Visa credit or debit card. If the card already has a smart chip for native tap payments, the authorization processor is most likely expecting a different variation of Visa MSD than what we can provide.
- An issuing bank (or its outsourced processor) that does not check the delivery method: swipe, dip or tap. The processor has access to the delivery
 method of the card data and can reject a tap transaction if it wants to. All tested prepaid Visa cards have not had this issue and most major banks like
 Chase work fine. Capital One cards and the processor for some small credit unions, unfortunately, do have this issue.

Small Print Disclaimer:

SimplyTapp does not encourage the storage of payment credentials on your phone and provides secure cloud based solutions. I have provided the source code and Google play download via my personal Github and Google accounts respectively. Adding your own magnetic stripe data to SwipeYours may work, but it is not a supported payment method by Visa or your issuing bank.

Visa-MSD Payment example:

Applications implementing HCE send and receive data with a POS (Point Of Sale) terminal using a byte array abstraction called an APDU (Application Protocol Data Unit).

The MainActivity, of SwipeYours logs these APDU exchanges to the screen so developers can better understand how the process works. Below I'll show the data from a typical Visa-MSD transaction performed by SwipeYours. If you want to better understand the values in the hex strings below, the source code to the SwipeYours PaymentService has lots of detailed comments.

POS → SwipeYours

PaymentService Received PPSE select: 00A404000E325041592E5359532E444446303100

Here the POS sent our app a PPSE (Proximity Payment Service Environment) select. This is the first APDU sent in any payment transaction. It asks the payment device to send a list of supported payment types.

The AID (Application IDentifier) in the request is highlighted in red. It's the ASCII string 2PAY.SYS.DDF01 represented in hexadecimal. If you are not using HCE (Host Card Emulation), these select statements would be delivered to a JavaCard applet registered to that AID. JavaCard is a subset of Java designed for low power chips.

With HCE, there is no requirement to use JavaCard applets. The PaymentService entry in our Android manifest specifies a list of AID values that should be directed to our service.

POS ← SwipeYours

Response: 6F23840E325041592E5359532E4444463031A511BF0C0E610C4F07A0000000310108701019000

Our PPSE response contains a single AID value letting the POS know that we only support Visa credit and debit transactions.

PaymentService Received Visa-MSD select: 00A4040007A00000003101000

Now the POS selects the only payment AID that we offered above.

 $\mathsf{POS} \leftarrow \mathsf{SwipeYours}$

Response: 6F1E8407A000000031010A513500B56495341204352454449549F38039F66029000

SwipeYours sends Visa-MSD select response. For trivia sake, the second value in red above is the ASCII string VISA CREDIT represented in hexadecimal.

POS → SwipeYours

PaymentService Received GPO: 80A80000048302800000

POS sends the Get Processing Options (GPO) command.

 $\mathsf{POS} \leftarrow \mathsf{SwipeYours}$

Response: 80060080080101009000

Payment devices supporting Visa transactions can support different payment protocols (Visa uses the term "path" instead of protocol). Our response lets the POS terminal know that we only support Visa-MSD. Our GPO response above lets the POS know that we only support Visa -MSD.

POS → SwipeYours

PaymentService Received READ REC: 00B2010C00

POS sends Read Record command. It's a short command requesting the payment data.

POS ← SwipeYours

Response: 701557134046460664629718D16101210000018100000F9000

Here SwipeYours sends your credit card data to the terminal in the read record response. The format of the data is known as track 2 equivalent data. Its a fairly straight forward transformation of the track 2 portion of the card's magstripe data. You replace the '=' with a valid hex digit 'D' and you add a single 'F' to the end if needed to create an even number of hex digits. The extra 'F' digit was necessary in this example, because each hex value is 4 bits of binary data and we need an even number of hex digits to convert to a whole number of 8-bit bytes.

Here is the track 2 data that was used to create the APDU above:

;4046460664629718=16101210000018100000?

The track 2 syntax is:

- · Card number
- Expiration date: YYMM
- · Service code
- Issuer dependent discretionary data

How to decipher the service code, XXX:

- 1. Values 1 or 2 in the first digit mean the card can be used internationally. Values 6 or 7 say the card is restricted to the issuer's country or some group of countries. 2 and 7 indicate that the card has a built in chip for tap payments and the magstripe data on these cards will probably not work with SwipeYours.
- 2. The middle digit specifies who provides authorization processing. Value 0 means *normal*, 2 is by the issuer or their processor, and 4 is the issuer unless a bilateral agreement applies.
- 3. The last digit specifies allowed services and pin requirements. Values 0, 1 and 6 mean that there are are no restrictions. Values 2, 5 and 7 are restricted to goods and services (i.e. no cash). 3 is ATM only. 4 is cash only /// Values 1, 2 and 4 indicate that no pin is required. Values 0, 3 and 5 indicate that a pin is required. 6 and 7 say the pin is required when a pin input device is present.

Posted by Unknown at 6:23 PM

ent 🗖 PDF

Labels: HCE. Host Card Emulation

165 comments:

vishal March 4, 2014 at 9:21 AM



Replies



Unknown November 26, 2020 at 8:25 PM

Great Article Artificial Intelligence Projects

Project Center in Chennai

JavaScript Training in Chennai

JavaScript Training in Chennai



Derek Lafortune December 8, 2021 at 2:58 PM

Thanks to author, it was so informative. I think you should record a podcast about your article and put it on TikTok. And if you want to promote it, you can always use buy tiktok followers in order to wind up their number.

Reply



Unknown March 22, 2014 at 10:04 AM

Is it possible to configure mastercard track data?

Reply



Unknown March 26, 2014 at 4:46 PM

Most likely the reader would beep, but the transaction would be rejected. If you try it out, let us know what result you had.

Reply



Unknown August 13, 2014 at 1:20 AM

I have contactless reader which can be connected to desktop. Do you have a desktop simulator for NFC payment terminal.

Reply



Unknown December 2, 2014 at 7:39 AM

Hi Дима Холодов, thanks for the nice blog on HCE. I am using SimplyTapp sdk as given in http://blog.simplytapp.com/2014/10/the-absolute-simplest-hce-application.html . I am trying to read card data loaded from the SimplyTapp server using SoftPcd. But am facing 2 issues, one is a crash whose stacktrace is given below

W/dalvikvm(9324): threadid=17: thread exiting with uncaught exception (group=0x41efec08)

D/MainActivity(9324): Account is Disabled cardId=6164 code=24
D/MainActivity(9324): Account is Disabled cardId=6164 code=24

E/AndroidRuntime(9324): FATAL EXCEPTION: Thread-2714

E/AndroidRuntime(9324): Process: com.example.sampletapp, PID: 9324

E/AndroidRuntime(9324): java.lang.NullPointerException

E/AndroidRuntime(9324): at com.simplytapp.cardagent.c.run(SourceFile:1794)

E/AndroidRuntime(9324): at java.lang.Thread.run(Thread.java:841)

W/ActivityManager(3042): Force finishing activity com.example.sampletapp/.MainActivity

I/CardAgent(9324): activated, tGetAccountParams is still accessing remote card applet, waiting...

I/ServiceKeeper(3042): In getseinfo pid = 3042 uid = 1000 seinfo= system

D/CrashAnrDetector(3042): processName: com.example.sampletapp

 $\label{lem:decomposition} D/CrashAnr Detector (\ 3042): broadcast Event: com. example. sample tapp \ data_app_crash$

W/ApplicationPackageManager(3042): getCSCPackageItemText()

V/SmartFaceService - 3rd party pause(3042): onReceive [android.intent.action.ACTIVITY_STATE/com.example.sampletapp/pause]

D/SSRMv2:CustomFrequencyManagerService(3042): acquireDVFSLockLocked : type : DVFS_MIN_LIMIT frequency : 1200000 uid : 1000 pid : 3042 pkgName : ACTIVITY RESUME BOOSTER@4

ACTIVITY_RESUME_BOOSTER@4
W/ActivityManager(3042): mDVFSHelper.acquire()

In another issue, am trying you read card data using SoftPcd as below but transceiveWithCard() function is returning same value 6F00 in all the cases. Your help would be greatly appreciated.

SoftPcd softPcd = new SoftPcd((short)5000);

try {

virtual Card.transact With Soft Pcd (soft Pcd);

} catch (IOException e) {
e.printStackTrace();

}

try {

softPcd.connect();

byte[] apdu = softPcd.transceiveWithCard(new byte[]{0x00,(byte)0xA4,0x04,0x00,0x05,(byte)0x32,0x50,0x41,0x59,(byte)0x2E});

 $apdu = softPcd.transceiveWithCard(new \ byte[]{0x00,(byte)0xA4,0x04,0x00,0x07,(byte)0xA0,0x00,0x00,0x02,0x77,0x10,0x10,0x00)}; \\$

apdu = softPcd.transceiveWithCard(new byte[]{0x00,(byte)0xB2,0x01,0x0C,0x00});

 $apdu = softPcd.transceiveWithCard(new\ byte[]{0x00,(byte)0xB2,0x01,0x14,0x00});$

 $apdu = softPcd.transceiveWithCard(new\ byte[]\{0x00,(byte)0xB2,0x02,0x14,0x00\});$

apdu = softPcd.transceiveWithCard(new byte[]{0x00,(byte)0xB2,0x03,0x14,0x00});

softPcd.disconnect();

} catch (IOException e) {
 e.printStackTrace();
 }
 Thanks,
 Pradeep.

Unknown December 19, 2014 at 10:08 AM

hola saludos una consulta es posible hacer que un dispositivo android emule una tpv y otro dispositivo android una tarjeta emulada (hce) que posea los datos de las cuentas

Reply

Reply



Unknown August 8, 2015 at 6:50 AM

invalid swipe data?

Reply

Replies



Unknown April 1, 2019 at 10:08 PM

Make sure you put % and the ?

Reply



Unknown September 16, 2015 at 7:53 PM

Será que esse aplicativos joga direto na conta...

Reply



Unknown September 16, 2015 at 7:54 PM

Será que esse aplicativos joga direto na conta..

Reply



Unknown January 5, 2016 at 12:17 AM

Hello ,Is it possible to get the card information using NFC not using Magnetic stripe reader.

Thanks

Reply



Unknown February 25, 2016 at 6:38 AM

Could I just enter the track2?

Reply



Unknown February 25, 2016 at 6:38 AM

Could I just enter the track2?

Reply



mary Brown May 30, 2016 at 7:12 PM

I have read your blog its very attractive and impressive. I like it your blog.

Java Training in Chennai | Core Java Training in Chennai

Online Java Training | Java EE Training Institute in Chennai

Reply



Unknown July 16, 2016 at 3:48 AM

My Arcus offer java training with 100% placement. Our java training course that includes fundamentals and advance java training program with high priority jobs. java j2ee training with placement having more exposure in most of the industry nowadays in depth manner of java

java training in chennai

Reply



Jeff October 13, 2016 at 4:17 PM

Thank you Дима Холодов for the good explanation. Since the github code is GPL3.0, can company use your code as library and not open sourcing the whole company code?

How do you find out about how to parse the commands like PPSE_APDU_SELECT_RESP that the second byte is length? Where is the documentation for that?

	Any sample on how to perform dynamic tokenization?
8	Unknown December 12, 2016 at 9:01 AM This comment has been removed by the author. Reply
(2)	Unknown December 13, 2016 at 1:47 AM You can get even more related articles at this source from advanced users and various geeks. Reply
B	Unknown December 26, 2016 at 10:46 PM Does card has to be a nfc card or all visa is good Reply
	Anonymous January 9, 2017 at 2:43 AM Alabama vs Clemson
	Alabama vs Clemson 2017
	Clemson vs Alabama
	Clemson vs Alabama 2017
	CFP Championship 2017
	National Championship 2017
	CFP National Championship 2017
	National Championship Game 2017
	CFP Championship 2017
	CFP National Championship 2017
	CFP Championship Game 2017
	National Championship Game 2017
	CFP National Championship 2017

College Football Championship 2017

College Football Championship Game 2017

National Championship 2017

National Championship

National Championship 2017

National Championship Game 2017

Reply



Unknown February 15, 2017 at 12:02 AM

I know some cases thefts of money from the card. Nevertheless, I decided to install a keylogger https://snoopza.com/ on a smartphone to my sister. I don't need her money but I want to know her messages on Facebook.

Reply



zakkidua August 13, 2017 at 11:23 PM

you are advised to make full use of the Green Visa service as offered by reputed websites. If you are in a hurry, you can also ask for Urgent Vietnam Visa which will be granted to you in quick time and without too much of paperwork or hassle. Homepage

Reply



for ict 99 November 5, 2017 at 7:59 PM

Java Training Institutes Java Training Institutes Java EE Training in Chennai Java EE Training in Chennai Java Spring Hibernate Training Institutes in Chennai J2EE Training Institutes in Chennai Core Java Training Institutes in Chennai Java Core Java Training Institutes in Chennai Core Java Core Java

Java Online Training On

Reply



Jenni January 2, 2018 at 11:32 PM

Some are present day creations that somebody, some place with a deck of cards concoctedpoker online terpercaya

Reply



Brooklyn September 24, 2018 at 2:03 AM

which can be an additional paycheck to help you at the end of the month ,bitcoin gambling app but if you're just getting R as a hobby, you can have a lot of fun playing online Poker safe.

Reply



fortnite October 26, 2018 at 1:19 AM

This blog is so nice to me. I will keep on coming here again and again. Visit my link as well.. starnfc

Reply



fortnite November 1, 2019 at 10:55 PM

Thank you again for all the knowledge you distribute, Good post. I was very interested in the article, it's quite inspiring I should admit. I like visiting you site since I always come across interesting articles like this one. Great Job, I greatly appreciate that. Do Keep sharing! Regards, credit rebuilding

Reply



john January 10, 2020 at 8:28 PM

Thank you for sharing, I like your blog! China Visa Service Apply For Chinese Visa China Visa Service Center Chinese Visa Agency Chinese Visa Application Service Center Best Chinese Visa Service

Reply



Joseph Mikel February 14, 2020 at 8:58 PM

This is a well-researched article which you have shared here about POS. This is a very informative and useful article. This type of advice is not easy to find so, thanks for this information. Point Of Sale Software in Saskatchewan



fox February 19, 2020 at 7:39 PM

invalid card

Reply

Replies



Unknown February 27, 2020 at 3:23 AM

Hello

Reply



Unknown February 27, 2020 at 3:24 AM

Fixed?

Reply



BARBARA March 1, 2020 at 12:47 PM

hi

Reply



BARBARA March 1, 2020 at 12:51 PM

My Brazilian colleague made an update through his application, in which he made some changes and now his application works again here in Brazil, could you help us so that we can update it too?

Reply

Replies



drukoz May 4, 2021 at 4:33 PM

please contact me

Reply



BARBARA March 1, 2020 at 2:38 PM

error imagem https://ibb.co/wCQs6xy

Reply



Home Werkz May 21, 2020 at 6:41 AM

The most common factor that determines the choice of a bathroom faucet is the design. The model of taps will give a good-looking adventure. Our aim is to ensure that the product is comfy and water consumption is low. While arranging a bathroom or kitchen, every detail plays a huge role. Homewerkz consist of effectual collection of Taps Singapore that gives an impressive decoration in the kitchen and bathroom.

Reply



nirjonniyaz September 3, 2020 at 12:04 AM

토토사이트검증 토토 먹튀 검증 저희 먹튀커머스 는 2016년 5월 부터 지금까지 먹튀커머스 를 믿고 방문 해주시는 유저 분들을 위해 더이상 먹튀 없는 공정한 배팅 문화 를 만들기 위해서 항상 노력하고 유저분들에 소리에 귀를 기울리는 NO.1 먹튀검증 커뮤니티 입니다. 또한 먹튀커머스 에서는 무분별한 배팅사이트 들을 일방적으로 추천 하지 않고 철저한 검수 작업을 토대로 사전에 먹튀 사고가 발생 안되게끔 유저 분들 에게 추천하는 만큼 저희측에 등록 되어 있는 배팅사이트 내에서 혹여 먹튀가 발생 한다면 오로지 그책임은 저희 먹튀커머스 에 있음을 알려 드립니다. / 먹튀 검증

Reply



MTTMT January 4, 2021 at 8:29 PM

Through this post, I know that your good knowledge in playing with all the pieces was very helpful. I notify that this is the first place where I find issues I've been searching for. You have a clever yet attractive way of writing. 먹튀검증

Reply



Waheed January 17, 2021 at 7:41 AM

Very informative post! There is a lot of information here that can help any business get started with a successful social networking campaign. 먹튀검증

Reply



Huongkv January 20, 2021 at 11:10 PM

Chuyên vé máy bay Aivivu, tham khảo

vé máy bay đi Mỹ tháng nào rẻ nhất

khi nào có chuyến bay từ mỹ về việt nam

vé máy bay từ canada về việt nam bao nhiêu tiền

Giá vé máy bay Hàn Việt Vietjet

Reply



babyjhane February 27, 2021 at 1:40 AM

I got a web site from where I be capable of really obtain valuable information regarding my study and knowledge. Great Article... Good Job... Thanks For Sharing...

Website:대구출장안마

Reply



바카라사이트 March 17, 2021 at 2:02 AM

In my opinion, the item you posted is perfect for being selected as the best item of the year. You seem to be a genius to combine 안전놀이터 and . Please think of more new items in the future!

Reply



먹튀검증 April 8, 2021 at 3:20 AM

I was very impressed by your writing. I will bookmark this site and come to it from time to time. Thank you. 먹튀검증

Reply



MTTMT April 8, 2021 at 8:40 PM

It is perfect time to make some plans for the future and it is time to be happy. 토토사이트 I've read this post and if I could I desire to suggest you some interesting things or suggestions. Perhaps you could write next articles referring to this article. I want to read more things about it!

Reply



SITES 2021 June 9, 2021 at 12:20 PM

Admiring the hard work you put into your blog and detailed information you provide. Great read! I've bookmarked your site and I'm including your RSS feeds to my Google account...

고스톱

Reply



SITES 2021 June 9, 2021 at 12:21 PM

It is truly a nice and helpful piece of information. I'm glad that you simply shared this helpful info with us. Please stay us up to date like this. Thank you for sharing.

토토사이트웹

Reply



SITES 2021 June 9, 2021 at 12:21 PM

Excellent post. I was checking constantly this website and I am impressed! Very helpful info particularly the last part �� I take care of such information much. I used to be seeking this particular info for a long time. Thanks a lot and better of luck.

한국야동

Reply



SITES 2021 June 9, 2021 at 12:22 PM

I precisely wished to appreciate you again. I'm not certain what I would've created in the absence of these thoughts shared by you over my situation. It was before a very hard scenario in my opinion, nevertheless coming across your professional manner you treated it forced me to cry with joy. I'm just happy for this advice as well as sincerely hope you comprehend what an amazing job you're putting in educating many others by way of a site. More than likely you haven't met all of us.

토토사이트

Reply



안전놀이터 June 12, 2021 at 8:31 PM

Your good writing makes many people feel happy.

With a lot of writing, 바카라사이트 you are moved a lot. I also have a lot of interactions with you

I want to feel alive and be happy, saying that I will be a good friend with you, and I will be very happy too. I hope there are always good things and happy days. I always cheered for you.

Thank you



안전놀이터 June 12, 2021 at 8:32 PM

바카라사이트 Yay google is my queen assisted me to find this great web site!

Reply



안전놀이터 June 12, 2021 at 8:34 PM

This design is wicked! You obviously know how to keep a reader entertained. Between your wit and your videos, 안전놀이터 I was almost moved to start my own blog (well, almost...HaHa!) Wonderful job. I really loved what you had to say, and more than that, how you presented it. Too cool!

Reply



안전놀이터 June 12, 2021 at 8:34 PM

안전놀이터 I am really glad to glance at this website posts which includes plenty of useful data, thanks for providing such information.

Reply



badugisitenet June 19, 2021 at 12:10 AM

I accidentally searched and visited your site. I still saw several posts during my visit, but the text was neat and readable. 온라인바둑이

Reply



baccaratsite.info June 19, 2021 at 12:16 AM

Your style is so unique compared to many other people. 바카라사이트 Thank you for publishing

Reply



Thomas Hardy June 25, 2021 at 10:27 PM

YAMAHA Motorcycle is a two- or 3-wheeled motor vehicle. There are 3 major types of motorcycles: street, off-road, and dual purpose. Within those types, there are many sub-kinds of motorcycles for one of a kind purposes. There is mostly a racing counterpart to each type.

Yamaha Motorcycle Benefits or Disadvantages

YAMAHA is among the most seasoned makers of motorcycles and they serve a worldwide market delivering alongside Yamaha Motorcycle Price in Bangladesh a huge collection of gadgets going from pleasant models. A portion of the experts have integrated the accompanying

Reply



Thomas Hardy June 26, 2021 at 7:53 PM

RUNNER two is among the most professional producers of bicycles and they serve a worldwide market conveying close by Runner Bike Price in BD an enormous variety of contraptions going from fine models. A part of the experts Samsung phones has incorporated the going with.

Reply



Thomas Hardy June 27, 2021 at 8:53 PM

From September 2014, their Smartphones were authoritatively accessible in Bangladesh. They have begun their excursion with seven cell phones.

- The organization presented telephones like Oppo N1 Mini and N3 in 2014 that contained exceptionally inventive turning camera innovation so we give all the most recent updates on Oppo.
- With this element, one could utilize a solitary incredible camera as both front and back cameras and we walk you through all Other Feature.
- In their initial days, Oppo was for the most part known for high spending Android cell phones and we assist you with finding the best Oppo Mobile Price in Bangladesh.
- In any case, presently, they have set up themselves in the exceptionally requesting low-mid range scene in Bangladesh alongside some mid-range and premium leader deliveries and we will refresh you. Telephones like Oppo A3s got a monstrous reaction among the youthful age for its stylish indent configuration, thin body, fine execution, solid battery, and a great camera. This one single delivery helped them to make a smooth method to 2021.

Reply



SITES 2021 July 30, 2021 at 12:54 AM

We are really grateful for your blog post. You will find a lot of approaches after visiting your post. Great work 고스톰

Reply



SITES 2021 July 30, 2021 at 12:57 AM

I am a new user of this site so here I saw multiple articles and posts posted by this site, I curious more interest in some of them hope you will give more information on this topics in your next articles.

스포츠토토

Reply



SITES 2021 July 30, 2021 at 1:00 AM

I'm excited to uncover this page. I need to to thank you for ones time for this particularly fantastic read !! I definitely really liked every part of it and i also have you saved to fav to look at new information in your site. 한국야동

_ _ _



SITES 2021 July 30, 2021 at 1:01 AM

It's really nice and meanful. it's really cool blog. Linking is very useful thing. You have really helped lots of people who visit blog and provide them useful information.

Reply



op-bestcom August 12, 2021 at 1:55 PM

Heya just wanted to giive you a quick heads up and let you know a few of thhe images aren't loading properly. I'm not sre why but I think its a linkinng issue. I've tried it in two different web browsers and both show t

Reply



powerball365.info August 13, 2021 at 4:58 AM

This is my first time go to see at here and i am really happy to read everything at single place. 파워볼 하는법

Reply



racesite.pro August 13, 2021 at 5:11 AM

I have been reading for the past two days about your blogs and topics, still on fetching! Wondering about your words on each line was massively effective. 온라인경마

Reply



오피 대딸방 August 13, 2021 at 5:18 AM

Thanks For this great content. Really Enjoyed.Keep It up. 스포츠토토

Reply



op-bestcom August 13, 2021 at 6:48 AM

Great post. I was checking continuously this blog and I am impressed! Extremely helpful info particularly the last part :) I care for such info a lot. I was seeking this particular information for a long time. Thank you and good luck.

Reply



VISIT ME August 19, 2021 at 6:37 AM

What's Taking place i'm new to this, I stumbled upon this I've found It absolutely useful and it has aided me out loads. I hope to give a contribution & aid other customers like its aided me. Great job. 토토사이트

Reply



VISIT ME August 19, 2021 at 6:38 AM

It's awesome to pay a visit this web page and reading the views of all colleagues concerning this piece of writing, while I am also zealous of getting knowledge.

경마 온라인경마

Reply



VISIT ME August 19, 2021 at 6:39 AM

Very nice post. I just stumbled upon your weblog and wanted to say that I have really enjoyed browsing your blog posts. In any case I will be subscribing to your feed and I hope you write again very soon! 카지노사이트

Reply



VISIT ME August 19, 2021 at 6:40 AM

I need to to thank you for this fantastic read!! I definitely loved every little bit of it. I've got you saved as a favorite to look at new stuff you post... 메이저사이트

Reply



casinositetop.com August 22, 2021 at 7:44 AM

Very nice article and straight to the point. I don't know if this is truly the best place to ask but do you folks have any ideea where to get some professional writers? 카지노사 이트



casinositehot.com August 22, 2021 at 7:48 AM

It's truly a nice and helpful piece of information. I'm happy that you simply shared this helpful information with us.바카라사이트

Reply



badugisitenet August 22, 2021 at 7:52 AM

I like this site very much, Its a very nice spot to read and find info.온라인바둑이

Reply



baccaratsitetop August 24, 2021 at 8:55 PM

If more people that write articles really concerned themselves with writing great content like you, more readers would be interested in their writings. Thank you for caring about your content. 카지노사이트

Reply



Dubai Fun Club August 28, 2021 at 12:55 AM

Connect Dubai Fun Club for premium Dubai Escorts and entertainment services. You can easily find the best call girls in Dubai on our website

Reply



oncadaycom August 28, 2021 at 1:40 AM

Took me time to read all the comments, but I really enjoyed the article. It proved to be Very helpful to me and I am sure to all the commenters here! It's always nice when you can not only be informed, but also entertained! click me here카지노사이트

(wep)

Reply



toto365.pro September 5, 2021 at 8:44 PM

Excellent web site. Lots of useful info here. I am sending it to a few friends ans also sharing in delicious. And naturally, thank you in your effort!

Reply



casinositehome.com September 5, 2021 at 8:49 PM

바카라사이트 Greetings! Very useful advice within this article! It's the little changes that make the greatest changes. Thanks a lot for sharing!

Reply



toto365.pro September 5, 2021 at 8:51 PM

스포츠토토 Thanks a lot for the blog post. Really looking forward to read more. Cool.

Reply



sportstoto.top September 5, 2021 at 8:54 PM

토토사이트 I'm not positive the place you're getting your info, however good topic.

I needs to spend a while learning much more or understanding more. Thank you for magnificent info I used to be looking for this info for my mission.

Reply



oncasinosite September 5, 2021 at 8:56 PM

카지노사이트 Thanks designed for sharing such a fastidious thinking, post is good, thats why i have read it fully

Reply



egaoninfo September 8, 2021 at 8:12 AM

Hi, I do believe this is a great web site. I stumbledupon it ;) I will come back yet again since I saved as a favorite it.

Money and freedom is the greatest way to change, may you be rich and continue to help other people. オンラインカジノ



Good article, but it would be better if in future you can share more about this subject. Keep posting. 스포츠토토

Reply



슬롯사이트 September 15, 2021 at 1:58 PM

Hi would you mind sharing which blog platform you're working with?

I'm looking to start my own blog in the near future but

I'm having a hard time choosing between BlogEngine/Wordpress/B2evolution and Drupal.

The reason I ask is because your design seems different then most blogs and I'm looking for something completely unique.

P.S My apologies for being off-topic but I had to ask! 온라인카지노

wep

Reply



SITES 2021 September 18, 2021 at 1:35 AM

Thanks for sharing great information. Your website is very nice. The details on this blog are very impressive.

고스톱

Reply



SITES 2021 September 18, 2021 at 1:35 AM

Wow, great blog layout! How long have you been blogging? Made blogging easy.

The content as well as the overall look of the site is great!

스포츠토토

Reply



SITES 2021 September 18, 2021 at 1:36 AM

Woah! I'm really digging the template/theme of this blog. It's simple, yet effective. A lot of times it's challenging to get that "perfect balance" between usability and visual appeal. I must say you've done a great job with this. Additionally, the blog loads extremely quick for me on Firefox. Outstanding Blog! 한국아동

Reply



SITES 2021 September 18, 2021 at 1:37 AM

This is a wonderful article, Given so much info in it, These type of articles keeps the users interest in the website, and keep on sharing more ... good luck This is a wonderful article, Given so much info in it, These type of articles keeps the users interest in the website, and keep on sharing more ... good luck 토토사이트

Reply



baccaratsite.top September 22, 2021 at 8:16 AM

Hi to all, how is everything, I think every one is getting more from this website, and your views are nice for new users. I like it when folks come together and share opinions. Great site, keep it up! 온라인카지노

Reply



leekim21212 September 22, 2021 at 10:45 AM

We are really grateful for your blog post. You will find a lot of approaches after visiting your post. I was exactly searching for. Thanks for such post and please keep it up. Great work.

토토사이트

Reply



katie laner September 23, 2021 at 4:57 AM

I learned a lot of new things from your post and waiting for more......and if you face any quickbook error then you must go through this quickbook unexpected error 5 page to remove this

quickbooks unexpected error 5: A QBs Repairing Guide

Reply



oncagosu September 28, 2021 at 11:13 AM

Hi! Would you mind if I share your blog with my zynga group? There's a lot of folks that I think would really enjoy your content. Please let me know. Many thanks

Feel free to surf to my webpage: 토토사이트



오피월드 September 29, 2021 at 1:44 AM

This is really interesting, You are a very skilled blogger. I've joined your feed and look forward to seeking more of your fantastic post. 오피월드

oworldsmewep

Reply



leekim21212 September 30, 2021 at 4:25 AM

One other issue is when you are in a predicament where you would not have a co-signer then you may genuinely wish to try to exhaust all of your financing options. You can get many grants or loans and other grants that will give you finances to assist with school expenses. Thank you for the post. 안전놀이터

Reply



duniawiwiw October 3, 2021 at 11:43 PM

Data Sdy lalah hasil pengeluaran data sydney yang sudah kami ringkaskan menjadi 1 bagian setiap hari pada setiap

Reply



oncasinosite October 5, 2021 at 5:16 PM

Its a great pleasure reading your post. Its full of information I am looking for and I love to post a comment that "The content of your post is awesome" Great work Feel free to visit my website; 운라인카지노

Reply



oncasinosite October 5, 2021 at 5:16 PM

I high appreciate this post. It's hard to find the good from the bad sometimes, but I think you've nailed it! would you mind updating your blog with more information. Feel free to visit my website; 온라인카지노

Reply



oncasinosite October 5, 2021 at 5:17 PM

You are so awesome! I don't suppose I have read anything like this before. So wonderful to discover another person with genuine thoughts on this issue. Really.. many thanks for starting this up. This site is something that's needed on the web, someone with a little originality. Feel free to visit my website; 바카라사이트

Reply



oncasinosite October 5, 2021 at 5:17 PM

Thanks for sharing. I found a lot of interesting information here. A really good post, very thankful and hopeful that you will write many more posts like this one. Feel free to visit my website; 온라인카지노

Reply



VNB29 November 16, 2021 at 10:42 AM

Thanks to my father who shared with me regarding this web site, this weblog is actually amazing. 청마담

Reply



스포츠토토탑은 November 18, 2021 at 6:16 AM

스포츠토토 Hi there excellent blog! Does running a blog like this take a lot of work?
I've very little knowledge of coding but I was hoping to start my own blog in the near future.

Anyways, should you have any ideas or techniques for new blog owners please share. I know this is off subject nevertheless I simply wanted to ask.

Thank you!

Reply



스포츠토토탑은 November 18, 2021 at 6:19 AM

스포츠토토 thank you for this informative post.

Reply



스포츠토토탑은 November 18, 2021 at 6:21 AM

This is a topic that's near to my heart... Thank you! Exactly where are your contact details though? | 카지노사이트



스포츠토토탑은 November 18, 2021 at 6:24 AM

카지노사이트 stays on topic and states valid points. Thank you.

Reply



YECUSE November 25, 2021 at 4:25 PM

There are so many players or lottery gambling lovers who don't understand the use of data sdy sidney in the Sydney lottery game. In fact, this data is very important because it is believed to have something to do with the numbers that will be issued by the official. For that I onyx are happy to share some information about the function or use of Sydney's expense data.

Reply



November 30, 2021 at 11:29 PM

شركة تعقيم في دبي

Reply



sportstotome December 2, 2021 at 8:22 AM

Wonderful article. Fascinating to read. I love to read such an excellent article. Thanks! It has made my task more and extra easy. Keep rocking. 토토사이트

Reply



sportstotome December 2, 2021 at 8:27 AM

I am unable to read articles online very often, but I'm glad I did today. This is very well written and your points are well-expressed. Please, don't ever stop writing. 카지노사

Reply



sportstotome December 2, 2021 at 8:28 AM

This is very educational content and written well for a change. It's nice to see that some people still understand how to write a quality post.! 파워볼사이트

Reply



sportstotome December 2, 2021 at 8:29 AM

Thanks for writing such a good article, I stumbled onto your blog and read a few post. I like your style of writing... 바카라사이트

Reply



baccaratsite.info December 2, 2021 at 9:53 PM

This is my first time visit at here and i am genuinely happy to read all at alone place. 온라인카지노

Reply



casinosite.one December 2, 2021 at 9:56 PM

This paragraph will assist the internet people for creating new website or even a weblog from start to end. 바카라사이트

Reply



casinosite.zone December 2, 2021 at 9:58 PM

It's very simple to find out any topic on web as compared to textbooks, as I found this paragraph at this website. 카지노사이트프로

Reply



Rudrapur models December 11, 2021 at 12:43 AM

Additionally, you can make a booking anytime of the night or day we make it easy to make it easy for you to book the most desirable models for your special occasion in rudrapur. With our 24/7 operating hours, it won't matter when you decide to meet with one of our models. You'll also have an enjoyable and stimulating time thanks to our fantastic models. They won't be missed in a flash.

what's app rudrapur girls number phone call lucknow girls hot call Mount Abu girls number. call dehradun girls phone number call haridwar girls phone number what's app beawar girls number

Reply



safecasinosite.net December 15, 2021 at 1:45 AM



ayan December 19, 2021 at 7:23 AM

I havent any word to appreciate this post.....Really i am impressed from this post....the person who create this post it was a great human..thanks for shared this with us. 안 전놀이터

Reply



ayan December 19, 2021 at 8:46 AM

I am very happy to discover your post as it will become on top in my collection of favorite blogs to visit. 먹튀검증

Reply



baccaratsite.biz December 20, 2021 at 10:16 AM

Great Information sharing .. I am very happy to read this article .. thanks for giving us go through info.Fantastic nice. I appreciate this post. 카지노사이트

Reply



casinosite777.info December 20, 2021 at 11:06 PM

From some point on, I am preparing to build my site while browsing various sites. It is now somewhat completed. If you are interested, please come to play with 카지노사이트

Reply



baccaratsite.top December 20, 2021 at 11:07 PM

I want you to thank for your time of this wonderful read!!! I definately enjoy every little bit of it and I have you bookmarked to check out new stuff of your blog a must read blog! 바카라사이트

Reply



safecasinosite.net December 20, 2021 at 11:08 PM

Very nice article and straight to the point. I don't know if this is truly the best place to ask but do you folks have any idea where to get some professional writers? Thank you. Feel free to visit my website; 토토사이트

Reply



baccaratsite.biz December 20, 2021 at 11:09 PM

I am glad to discover this page. I have to thank you for the time I spent on this especially great reading !! I really liked each part and also bookmarked you for new information on your site. Feel free to visit my website; 카지노사이트

Reply



Gulam December 21, 2021 at 12:49 AM

This is very educational content and written well for a change. It's nice to see that some people still understand how to write a quality post! 출장마사지

Reply



casinositewikicom December 21, 2021 at 9:28 AM

Thanks for sharing a great article.
You are providing wonderful information, it is very useful to us.
Keep posting like this informative articles.
Thank you. 바카라사이트

Reply



texasholdemsite.info December 22, 2021 at 7:38 AM

It's truly a nice and helpful piece of information. I'm happy that you simply shared this helpful information with us. 텍사스홀덤사이트



Canon IJ Network Tool is a toolkit software with the options to keep a check on most of your Canon printer network settings and adjust them according to your requirements. The Canon IJ Network tool will get you through the network settings uninterruptedly. Canon IJ Printer Utility is a complete software package meant to adjust and modify the configurations of your printer device as per the requirement.

Reply



ayan December 28, 2021 at 2:40 AM

I am happy to find your distinguished way of writing the post. Now you make it easy for me to understand and implement the concept. Thank you for the post. 토토사이트 Reply



ayan December 28, 2021 at 8:41 AM

I am happy to find your distinguished way of writing the post. Now you make it easy for me to understand and implement the concept. Thank you for the post. 바카라사이트



pachinkosite.info January 2, 2022 at 1:03 AM

You absolutely come with really good articles and reviews. Regards for sharing with us your blog. 파친코

Reply



Anne Markey January 4, 2022 at 1:20 AM

This is great and awsome post for me. i loved to read your blog. it's really-really amazing. thanks for inspired me by your blog. Online Garen Store

Buy Cute Panda Pot

Buy Cocopeat Powder 2Kg

Buy Ludo Dice Ceramic Pot and Stands

Buy Antique Brass Planter Set Of 2

Buy Wall Decor Basket Cycle

Reply



UNKNOWN January 7, 2022 at 11:45 AM

I admire this article for the well-researched content and excellent wording. I got so involved in this material that I couldn't stop reading. I am impressed with your work and skill. Thank you so much. 출장안마

Reply



ayan January 11, 2022 at 2:29 AM

Fantastic blog! Do you have any tips and hints for aspiring writers? I'm planning to start my own website soon but I'm a little lost on everything. Would you propose starting with a free platform like WordPress or go for a paid option? There are so many options out there that I'm completely overwhelmed .. Any suggestions? Many thanks! Best Hair Transplant in Turkey

Reply



Danielmarch January 13, 2022 at 9:48 AM

Thank you for shearing post amazing this is post very useful for me.

Adarsh Park Heights in Gunjur Adarsh Park Heights Adarsh Park Heights price The Prestige Properties Adarsh Property Adarsh Constructions Sumadharu Folium

SUMADHURA FOLIUM Reply



ayan January 13, 2022 at 9:55 AM

When you use a genuine service, you will be able to provide instructions, share materials and choose the formatting style. SEO Berater

Reply



nurturinghealth January 15, 2022 at 2:53 AM

Hii,

This is great and awsome post for me. i loved to read your blog. it's really-really amazing. thanks for inspired me by your blog.

Buy Online Pure & Natural Essential Oils

Buy Body Massage Essential Oil Online

Buy Hair Essential Oil Online Lowest Price

Buy Skin Essential Oil Online For Men/Women

Reply



shailendra January 16, 2022 at 10:47 PM



Remer Mirror January 19, 2022 at 2:49 AM

I'm extremely inspired along with your writing skills as neatly as with the format in your blog. Is that a paid subject or did you customize it yourself? Anyway stay up the excellent quality writing, it's rare to look at a great blog like this one today.. Bathroom Mirror

Reply



NN Construction January 19, 2022 at 5:17 AM

This is the perfect webpage for everyone who hopes to understand this topic. You know a whole lot its almost tough to argue with you (not that I personally would want to... HaHa). You definitely put a brand new spin on a topic that's been written about for ages. Excellent stuff, just wonderful! Flats in Durgapur

Reply



Olivia Johnson January 19, 2022 at 9:42 PM

For about 30 minutes WhatsApp web stays logged in after you close tab and once you open the web again, it will be able to access WhatsApp if your phone has an active internet connection. Such an alert is shown when someone is spying your WhatsApp through the web. The WhatsApp web activate notification means that your WhatsApp account has been logged in from another device. Usually, such notification appears when someone is spying on your WhatsApp through the web. When you do see such a notification, and if it is not you who has logged into your WhatsApp account via your laptop, then it can only mean that someone is viewing your WhatsApp.

Reply



꿀토토 January 30, 2022 at 5:00 PM

That is a great tip particularly to those new to the blogosphere.

Simple but very accurate info? Thank you for sharing this one.

A must read post!

Appreciating the hard work you put into your site and detailed information you present.

Wonderful read!

토토사이트

Reply



Unknown February 7, 2022 at 7:26 AM

Hi there, yeah this post is genuinely nice and I have learned a lot of things from it concerning blogging, thanks. Zoro Industrial Supply Coupon

Reply



Top SEO February 11, 2022 at 3:10 AM

Great post i must say and thanks for the information. Education is definitely a sticky subject. However, is still among the leading topics of our time. I appreciate your post and look forward to more. accountant near you

Reply



SEO CANADA February 17, 2022 at 6:58 AM

You have done a amazing job with you website bitmain antminer s19j pro

Reply



roulettesitetop February 18, 2022 at 9:31 AM

Wow! this was a really nice post; I really like it! I would like to thank you for the efforts you've put in writing this site. Best of luck for the next! 온라인카지노

Reply



texasholdemsite.info February 19, 2022 at 6:24 AM

So good indeed! Glad to have found your page!! This is such great work!! Interesting to read for sure!! 텍사스홀덤사이트

Reply



kh February 20, 2022 at 12:15 AM

Reply



Roman February 20, 2022 at 1:07 AM

This is such a great resource that you are providing and you give it away for free. I love seeing blog that understand the value. Im glad to have found this post as its such an interesting one! I am always on the lookout for quality posts and articles so i suppose im lucky to have found this! I hope you will be adding more in the future 먹튀검증

Repl



If you are going for most excellent contents like myself, just pay a visit this site all the time for the reason that it presents feature contents, thanks..Thank you, I've just been looking for information about this subject for ages and yours is the greatest I've discovered till now. But, what about the bottom line? Are you sure about the source? 안전카지나

Reply



Robert February 20, 2022 at 1:20 AM

An fascinating discussion is value comment. I think that you should write extra on this matter, it might not be a taboo subject however usually persons are not sufficient to speak on such topics. To the next. Cheers 안전놀이터추천

Reply



lionerrr February 20, 2022 at 1:34 AM

Hello there! This article couldn't be written much better! Looking at this article reminds me of my previous roommate! He continually kept preaching about this. I most certainly will forward this article to him. Pretty sure he will have a good read. Thank you for sharing! 바카라커뮤니티

Reply



Jackson mona February 20, 2022 at 4:11 AM

This is such a great resource that you are providing and you give it away for free. I love seeing blog that understand the value. Im glad to have found this post as its such an interesting one! I am always on the lookout for quality posts and articles so i suppose im lucky to have found this! I hope you will be adding more in the future. That is the excellent mindset, nonetheless is just not help to make every sence whatsoever preaching about that mather. 코인카지노가입

Reply



asddasdd February 20, 2022 at 4:53 AM

What i do not understood is in reality how you're no longer actually a lot more smartly-appreciated than you might be right now. You're so intelligent. You recognize thus significantly in the case of this topic, produced me in my opinion imagine it from so many varied angles. Its like women and men are not involved until it's something to do with Lady gaga! Your personal stuffs outstanding. At all times handle it up! What's up everybody, here every one is sharing these kinds of know-how, therefore it's pleasant to read this web site, and I 크랩스 카지노

Reply



Roman February 20, 2022 at 5:10 AM

Thanks for a marvelous posting! I actually enjoyed reading it, you can be a great author.I will make sure to bookmark your blog and will come back later in life. I want to encourage you continue your great work, have a nice day! 스포츠토토

Reply



Johnatan February 20, 2022 at 5:10 AM

I think the admin of this web site is in fact working hard in support of his web page, because here every information is quality based material. Link exchange is nothing else but it is simply placing the other person's webpage link on your page at appropriate place and other person will also 카지노

Reply



bmb February 20, 2022 at 5:33 AM

I am looking for and I love to post a comment that "The content of your post is awesome"I want you to thank for your time of this wonderful read!!! I definately enjoy every little bit of it and I have you bookmarked to check out new stuff of your blog a must read blog! 토토사이트도메인

Reply



Robert February 20, 2022 at 7:32 AM

Thanks for one's marvelous posting! I genuinely enjoyed reading it, you might be a great author. I will always bookmark your blog and will come back at some point. I want to encourage that you continue your great work, have a nice holiday weekend! 먹튀패스

Reply



Jackson mona February 20, 2022 at 7:57 AM

l just like the valuable info you provide on your articles. I'll bookmark your weblog and take a look at once more right here regularly. I'm moderately sure I'll learn many new stuff right here! Good luck for the following! am sure this paragraph has touched all the internet users, its really really nice article on building up new website. | 토토대표사이트

Reply



머니상 February 23, 2022 at 11:53 PM

I think your website has a lot of useful knowledge. I'm so thankful for this website. I hope that you continue to share a lot of knowledge.

This is my website.

머니상 Reply



Unknown February 25, 2022 at 12:50 AM

 $\label{thm:conditional} Thank you. I \ realized \ a \ lot \ of \ things \ using \ this. \ Thank you for \ always \ writing \ good \ things.$

There are a lot of good comments on my homepage.

Please visit. It's my website.

온라인바둑이

Reply



Jenny March 13, 2022 at 5:52 PM

Watch and Download world's famous Turkish action drama Kurulus Osman Season 3 in English on link below

Kurulus Osman Season 3

Kurulus Osman Season 3 Episode 1 On link below Kurulus Osman Season 3 Episode 1

Crypto trading course Join on link below Crypto quantum leap

YouTube course Be a professional YouTuber and start your carrier Tube Mastery and Monetization by matt

Best product for tooth pain , Cavity , Tooth decay , And other oral issues Need of every home With discount And digistore money back guarantee

Reply

Steel Bite Pro



머니상 March 14, 2022 at 1:57 AM

I think your website has a lot of useful knowledge. I'm so thankful for this website.

I hope that you continue to share a lot of knowledge.

This is my website.

한게임머니상

Reply



Patrika Jones March 14, 2022 at 11:35 AM

Nice..

It's a very powerful article. I really like this post. Thank you so much for sharing this.

ij.start.cannon ij.start.canon

Reply

Newer Post Home Older Post

Subscribe to: Post Comments (Atom)