

# User Guide

Version 1.0

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## **1. HOW TO DOWNLOAD CIRCVIEW AND TEST DATA**

Download CircView application from

<http://github.com/GeneFeng/CircView/blob/master/CircView.tar.gz>

Download circRNAs test data from

<https://github.com/GeneFeng/CircView/blob/master/testdata/>

Download MRE data from

[http://gb.whu.edu.cn/CircView/testdata/mre\\_human.tar.gz](http://gb.whu.edu.cn/CircView/testdata/mre_human.tar.gz)

Download RBP data from

[http://gb.whu.edu.cn/CircView/testdata/rbp\\_human.tar.gz](http://gb.whu.edu.cn/CircView/testdata/rbp_human.tar.gz)

## **2. BEST PRACTISE**

### **2.1 Basic Feature: CircRNAs Visualization**

2.1.1 Java Virtual Machine need be installed before running this program. See 6 HOW TO INSTALL JAVA VIRTUAL MACHINE.

2.1.2 Download and decompress “CircView.tar.gz” from

<http://github.com/GeneFeng/CircView/blob/master/CircView.tar.gz>

Double click “CircView.jar” to launch the program.

2.1.3 Download and decompress circRNA data from

<https://github.com/GeneFeng/CircView/blob/master/testdata/human.tar.gz>

2.1.4 Click “CircRNA”->”Load Data” to load circRNA files according species and tools.

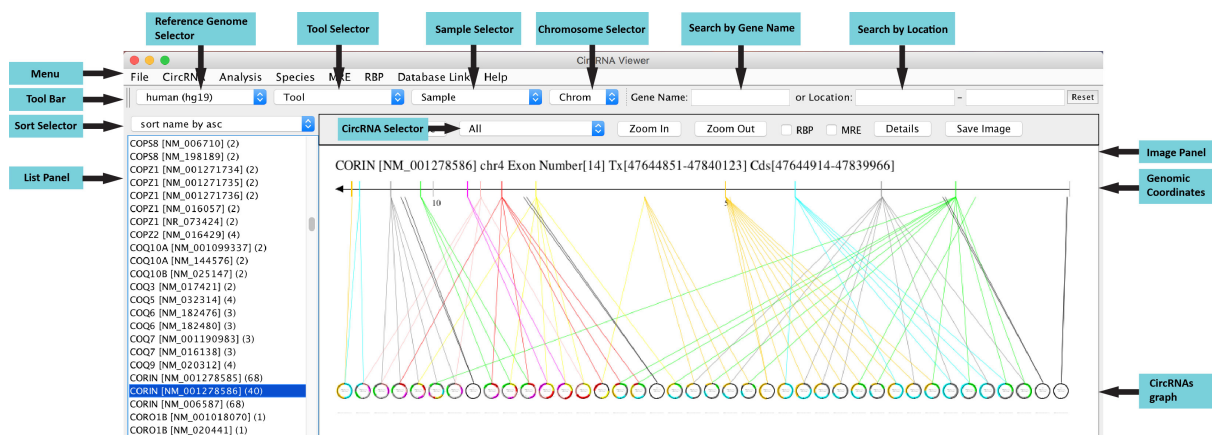
Load CircRNA files

human (hg19)CIRIAdd Files

Species	CircRNA Tool	File Name	File Path
human (hg19)	CIRCexplorer	heart_3.circexplorer	/Volumes/GENE/Proje...
human (hg19)	CIRCexplorer	heart_4.circexplorer	/Volumes/GENE/Proje...
human (hg19)	CIRCexplorer	heart_5.circexplorer	/Volumes/GENE/Proje...
human (hg19)	circRNA_finder	heart_1.circrna_finder	/Volumes/GENE/Proje...
human (hg19)	circRNA_finder	heart_2.circrna_finder	/Volumes/GENE/Proje...
human (hg19)	circRNA_finder	heart_3.circrna_finder	/Volumes/GENE/Proje...
human (hg19)	circRNA_finder	heart_4.circrna_finder	/Volumes/GENE/Proje...
human (hg19)	circRNA_finder	heart_5.circrna_finder	/Volumes/GENE/Proje...
human (hg19)	CIRI	heart_1.ciri	/Volumes/GENE/Proje...
human (hg19)	CIRI	heart_2.ciri	/Volumes/GENE/Proje...
human (hg19)	CIRI	heart_3.ciri	/Volumes/GENE/Proje...
human (hg19)	CIRI	heart_4.ciri	/Volumes/GENE/Proje...
human (hg19)	CIRI	heart_5.ciri	/Volumes/GENE/Proje...
mouse (mm9)	CIRCexplorer	heart_1.circexplorer	/Volumes/GENE/Proje...
mouse (mm9)	CIRCexplorer	heart_2.circexplorer	/Volumes/GENE/Proje...
mouse (mm9)	CIRCexplorer	heart_3.circexplorer	/Volumes/GENE/Proje...
mouse (mm9)	CIRCexplorer	heart_4.circexplorer	/Volumes/GENE/Proje...
mouse (mm9)	CIRCexplorer	heart_5.circexplorer	/Volumes/GENE/Proje...

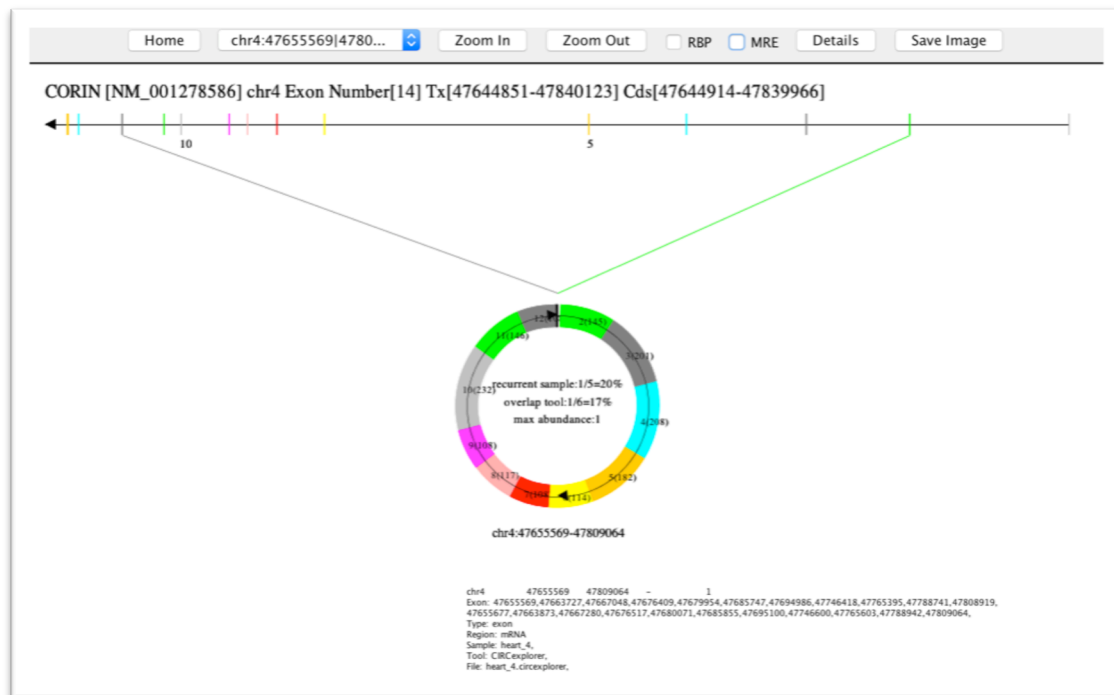
OpenClear

2.1.5 Click gene transcript name on left panel to view the image of the circRNAs.



2.1.6 Gene transcript can be searched by name or location.

2.1.7 Click one "Circle" to view details of each circRNA.



2.1.8 Detailed information and image of CircRNAs can be saved for further use.

2.1.9 Click "Analysis"-"Comparison" to make a comparison between circRNAs with different samples and/or tools.

Genome Selector Sample Multiple Selector Comparison Setting Comparison Items 4月14日 周五 11:14:18

human (hg19) Compare Overlap 1 bp

Sample List Sample selected

heart\_1.circexplorer  
heart\_1.circna\_finder  
heart\_1.ciri  
heart\_1.find\_circ  
heart\_1.mapsplice

Recurrent Sample Number Overlap Tool Number

Sort Title

No.	chr	chr	donor site	acceptor site	junction rea...	strand	tissue name	tissue num	sample name	sample num	tool name	tool num	circRNA type	circRNA re...
51	chr7	chr7	12175317...	12177379...	118(184)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
426	chr3	chr3	19502723...	19504154...	4(4)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
898	chr3	chr3	19502723...	19504154...	4(4)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1016	chr3	chr3	19502723...	19504154...	4(4)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1388	chr5	chr5	64466443...	64492978...	6(8)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1527	chr3	chr3	12304416...	12305152...	10(13)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1546	chr16	chr16	4029116...	4033441...	4(9)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1659	chr15	chr15	73052747...	73067438...	12(13)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1790	chr5	chr5	13222785...	13222881...	32(41)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
1818	chr18	chr18	12366963...	12371690...	41(42)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2003	chr5	chr5	13222785...	13222881...	32(41)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2005	chr5	chr5	13222785...	13222881...	32(41)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2007	chr9	chr9	88190229...	88248289...	25(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2016	chr9	chr9	88190229...	88248289...	25(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2020	chr9	chr9	88190229...	88248289...	25(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2026	chr9	chr9	88190229...	88248289...	25(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2083	chr6	chr6	13562163...	13564446...	25(33)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2263	chr6	chr6	10090722...	10090937...	9(12)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2713	chr18	chr18	56240045...	56247780...	1078(1282)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2749	chr2	chr2	20241026...	20244004...	74(99)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2750	chr2	chr2	20241026...	20244694...	29(46)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2752	chr2	chr2	20241026...	20246942...	14(18)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2758	chr2	chr2	20241026...	20244004...	16(17)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2869	chr8	chr8	61815947...	61815949...	17(151)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2890	chr8	chr8	41518947...	41521260...	9(12)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2962	chr10	chr10	61815415...	61874089...	6(7)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
2972	chr10	chr10	61844359...	61845011...	36(66)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3224	chr1	chr1	70758070...	70781249...	42(48)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3232	chr4	chr4	73944358...	73958017...	10(10)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3233	chr4	chr4	73950965...	73958017...	29(37)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3237	chr4	chr4	73950965...	73958017...	14(21)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3246	chr4	chr4	73984404...	73991029...	22(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3645	chr12	chr12	5908672...	5963307...	37(44)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
3665	chr12	chr12	6030205...	6031970...	25(35)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
4486	chr1	chr1	94667275...	94697199...	6(7)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
5060	chr8	chr8	13116498...	13118131...	30(51)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
5061	chr8	chr8	13116498...	13119312...	80(101)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA
5082	chr8	chr8	13116498...	13119312...	75(102)	-	heart,	1	heart_1.he...	5	CircExplor...	6	exon	mRNA

## 2.2 Advanced Feature: MRE and RBP sites Visualization on CircRNAs

2.2.1 MySQL need to be installed, see 7 HOW TO INSTALL MYSQL

2.2.2 Restart CircView.jar

2.2.3 Download and decompress MRE data from

[http://gb.whu.edu.cn/CircView/testdata/mre\\_human.tar.gz](http://gb.whu.edu.cn/CircView/testdata/mre_human.tar.gz)

2.2.4 Click “MRE”->”Load Data” to load MRE file.

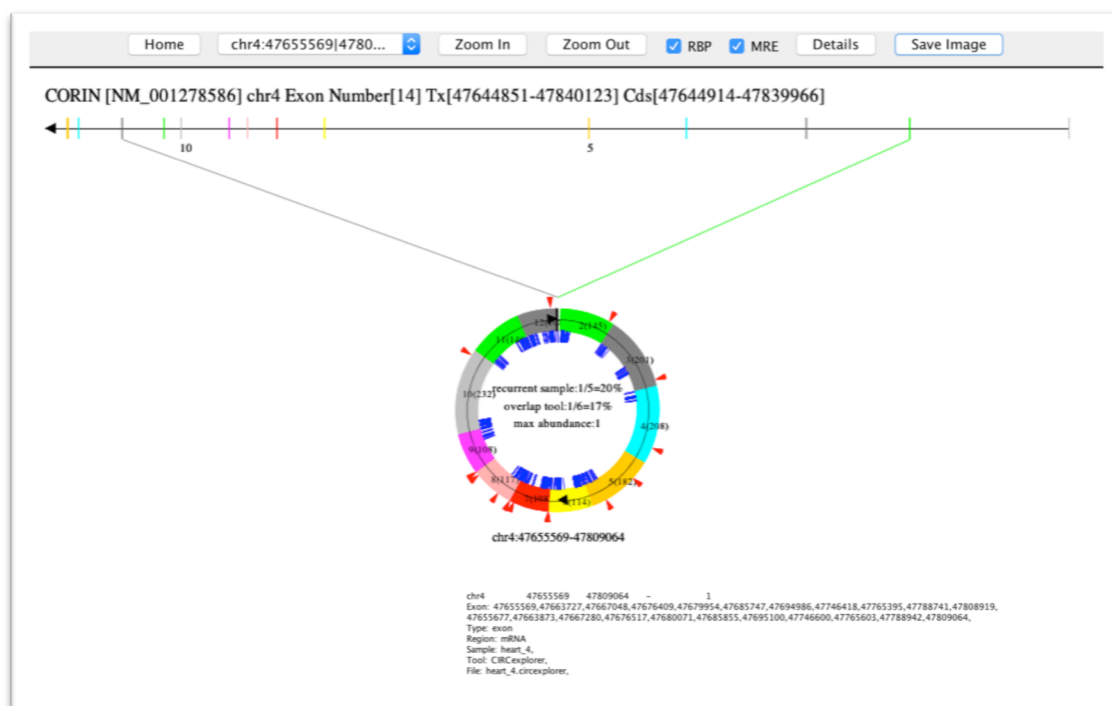
2.2.5 Download and decompress RBP data from

[http://gb.whu.edu.cn/CircView/testdata/rbp\\_human.tar.gz](http://gb.whu.edu.cn/CircView/testdata/rbp_human.tar.gz)

2.2.6 Click “RBP”->”Load Data” to load RBP file.

2.2.7 Load circRNAs data, see 2.1.4

2.2.8 Check MRE or RBP to add MRE sites (blue lines) or RBP sites (red triangles) to CircRNAs



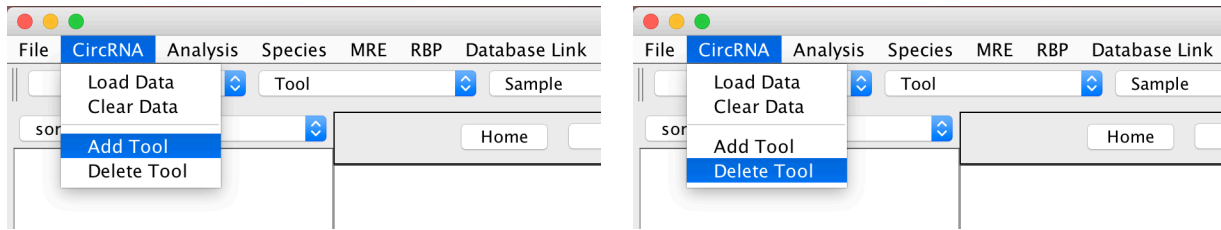
### 3. HOW TO MANAGE CIRCRNAs DATA

#### 3.1 CircRNAs Identification Tool Management

CircView integrates 6 CircRNAs identification tools (CIRCexplorer, circRNA\_finder, CIRI, find\_circ, Mapsplice, and UROBORUB) by default.

Users can add or delete tool by using menu “CircRNA”->”Add Tool” or “CircRNA”->”Delete

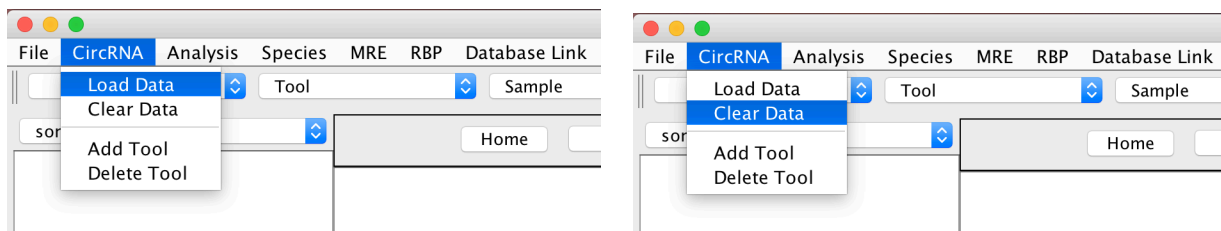
Tool”.



### 3.2 CircRNAs Data Management

CircView can load CircRNAs data directly from output of default 6 CircRNAs identification tools.

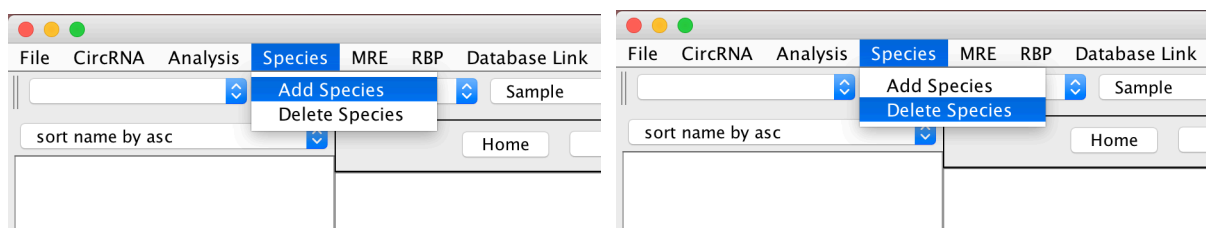
Users can also import circRNAs identified by other tools with six tab delimited columns, including chromosome, start position, end position, running number/name, junction reads and strand.



## 4. HOW TO MANAGE SPECIES DATA

CircView provides 7 species (Human (hg19), Human (hg38), Mouse (mm10), Mouse (mm9), Zebrafish (zv9), Fly (dm6), C.elegans (ce10)) by default.

Users can also add or delete species annotation data with compatible format by using menu “Species”->”Add Species” or “Species”->”Delete Species”.

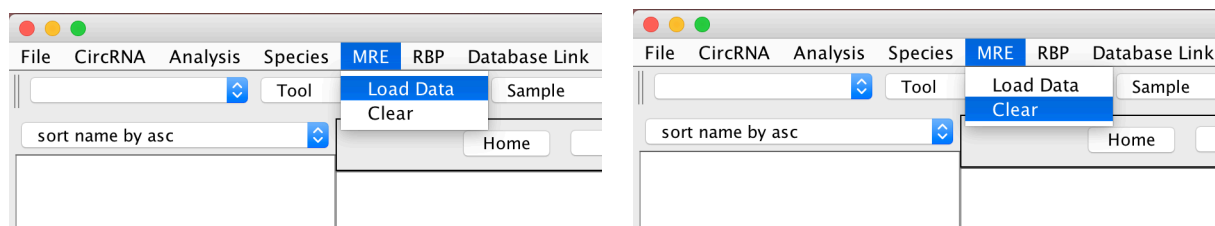


## 5. HOW TO MANAGE MRE AND RBP DATA

CircRNAs mainly function as sponges for the regulatory elements, such as miRNA respond elements (MREs) and RNA binding proteins (RBPs). CircView provides advanced features to display regulatory elements.

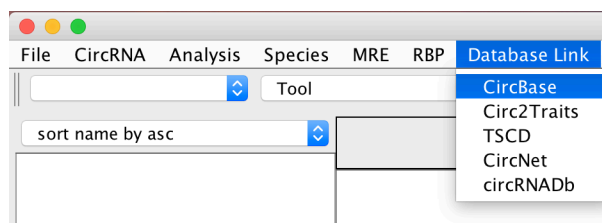
This module requires the users to install MySQL locally, see **7 HOW TO INSTALL MYSQL**. Users can load and display the MRE data identified by TargetScan (<http://targetscan.org/>) and/or the RBP data identified by starBase (<http://starbase.sysu.edu.cn/>) or any other software. The format requires five tab delimited columns, including chromosome, start position, end position, MRE/RBP name and description.

Load MRE or RBP file will create table and deposit data into MySQL database, and Clear MRE or RBP will remove data from the database. As the data are persistent, users should not load the same data for more than once.



## 6. HOW TO FIND SOME CIRCRNA DATABASES

CircView provides links to some circRNA databases.



## 7. HOW TO INSTALL JAVA VIRTUAL MACHINE

Java Virtual Machine need to be installed before running this program. Simply

access <http://www.java.com>, download Java, and install it.

## **8. HOW TO INSTALL MYSQL**

### **8.1 For Windows**

8.1.1 Download and decompress MySQL Installation file from

[http://gb.whu.edu.cn/CircView/MySQL/mysql\\_windows.tar.gz](http://gb.whu.edu.cn/CircView/MySQL/mysql_windows.tar.gz)

8.1.2 Double click “NDP46-KB3045557-x86-x64-AllOS-ENU.exe” to install .NET Framework.

8.1.3 Double click “mysql-installer-community-5.7.16.0.msi” to install MySQL. Please create password “12345” for user root during installation.

### **8.2 For Mac OS**

8.2.1 Download MySQL Installation file from

[http://gb.whu.edu.cn/CircView/MySQL/mysql-5.7.17-macos10.12-x86\\_64.dmg](http://gb.whu.edu.cn/CircView/MySQL/mysql-5.7.17-macos10.12-x86_64.dmg)

8.2.2 Double click “mysql-5.7.17-macos10.12-x86\_64.dmg” to install MySQL. Please create password “12345” for user root during installation.