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A Project Report On SpielPlatz Submitted in partial fulfillment for the Degree of Bachelor of Engineering in Computer Science and Engineering Submitted by BHAVIKA PATEL(140060107007) RAHUL RATHI (140060107046) DIVYA LIMBANI(120060131005) BANDRE MAYURI(140063131005) Under the Guidance of MRS AMI PATEL Department of Computer Science and Engineering Bhagwan Mahavir College of Engineering and Technology, Bharathana-Vesu, Surat -395017. Gujarat Technological University September, 2017 CERTIFICATE This is to certify that Bhavika Patel (140060107007), Rahul Rathi (140060107046), Divya Limbani(140060107005), Mayuri Bandre(140060107058) have completed the project report on the topic ♦SpielPlatz♦ satisfactorily in partial fulfillment for the Bachelor's Degree in Computer Science and Engineering under the guidance of Mrs.Ami Patel during the year 2016-17 as prescribed by Gujarat Technological University.

Guide Head of the Department Mrs. Ami Patel Mr. Krunal Patel Director Dr. Rajendra R. Sawant Examiner 1 Examiner 2 ACKNOWLEDGEMENT We are highly obliged to ♦GUJARAT TECHNOLOGICAL UNIVERSITY♦ for permitting us to work on our project ♦SpielPlatz♦. We are thankful to Dr. R. R. Sawant , Director and Krunal Patel, Head of Department (HOD) without whom this project would not be possible. We would like to give our cardinal thanks to our project guide Mrs. Ami Patel, Assistant Professor, COMPUTER SCIENCE DEPARTMENT B.M.C.E.T. Vesu, Surat.For her regular encouragement in valuable advice and support without with this project we would never have been completed so smoothly.

It is because of her regular guidance and effort, that the whole process has become a success. We express our sincere gratitude to other faculty members for their valuable efforts that helped us getting more knowledge

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over android. Divya Limbani Enrolment No.:120060131005 Bhavika Patel Enrolment No.:140060107007
 Rahul Rathil Enrolment No.:140060107046 Mayuri Bandre Enrolment No.:140060107058 Date: Abstract The
 virtual environment for practising cyber security is indeed not only to the cyber security experts it will also be
 use full for the students , professional & the institution which preparing the next worriers . The virtual cyber lab
 includes the creation of labs ,sharing of expensive hardware and tools .

This lab not only focus on practical hands on practice but also on theatrical concepts and discussion This lab
 is based on cloud arch and available over internet using just a web browser. This lab also provide the GUI &
 SSH connectivity over web and the lab is compatible with any device which has a HTMLinternet connection.
 There are available test bed s o? ered by various vendors like Cloud share , Breaking Point by IXIA (Cyber
 Range), Cybergym by an Israeli company which o? ers the labs .We

have vision of a virtual lab in which attacking team / individual who carries a cyber attack and the infrastructure
 for the attacks but the control is maintain by training expert or the individual who is practising. There is one
 more concert that the security of the cyber attack or practice should be walled inside the cloud practice
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Topology	26 3.12 Screenshot1
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one of the major concern . The world of cyber security attracting young talents for research , exploit & defend	
for bene?ts .	

The young talents require training & the formal fundamentals of the cyber security which leads to the major problem . The problems of cost , availability & respective skills are more expensive than cyber security learning. Not only the cost of Practice comes in consideration , there some information security bodies which forces the law & restriction for people good but they are interfering with the good practice of cyber security. 1.2

Aim and objectives of the project: Our aim is to make a solution that not only provide the practice grounds but also the environment where people can collaborate on same interests . some research companies can make the pro?les & can use expensive resource on usage bases. We are also considering the LAW of information security in our concern. 4 1.3 Problem Speci?cations : The virtual environment for practising cyber security is indeed not only to the cyber security experts it will also be use full for the students , professional & the institution which preparing the next worriers .

The virtual cyber lab includes the creation of labs , sharing of expensive hardware and tools . This lab not only

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focus on practical hands on practice but also on theatrical concepts and discussion. The problem specified comes for over head of vm environment they require powerful hardware which is costly and the running , maintaining cost is a overhead which can not be ignored. 1.4 Brief literature review and Prior Art Search(PAS) about the project : 1. Java Core ♦ Solution building 2. Java advance ♦ Solution Delivery 3.

Linux Fundamentals ♦ Platform Fundamentals 4. Cisco Inter-networking ♦ Inter-networking 5 1.5 Plan of work : Sr. No. Task Estimated Day Comment 1 Understanding of JAVA July N/A 2 Understanding of Platforms August Linux 3 Understanding of Delivery Mechanism September Tomcat & Guacamole 4 Code Initialization & Code Management October Git lab & Code Proto- type 5 Submitted PPR and PSAR report and verify the docu- mentation. October- November N/A 6 Intensive logice design & ar- guments & Alternative November Database 7 Intensive Code December N/A 8 ♦ Intensive test January Plagiarism 9 Product validation February Learning 10 Costumer Validation March N/A 11 Closing , summary & Busi- ness Pro?t Summary March N/A Table 1: Project Plan 6 1.6

Materials /Tools required : 1.6.1 Software Requirements : To run an application user need: Table 2: Software need to run an application Sr. No. Name Compatibility 1 Tomcat Windows / mac / Linux 2 Guacamole Server Linux 3 Fire-fox / chrome / safari Appropriate Selection 1.6.2 Hardware Requirements : To develop an application we need : Table 2:Hardware ware need to run an application Sr. No. Name Compatibility 1 PC Windows / mac / Linux & Vir- tualization support 2 Guacamole Server Workstation Linux 3 Any Device (User end) Appropriate Selection& html 5 Support 7 Chapter 2 Design:Analysis,Design Methodology and Implementation Strategy 2.1 AEIOU Canvas Figure 2.1: AEIOU CANVAS 8 2.1.1

Environment The Environment which was observed was : ♦ Cloud hosting ♦ Discipline ♦ Educational ♦ Irrespective of Use case Environment 2.1.2 Interaction The Interaction takes place between 1. User♦Browser♦Html♦server 2. Server♦html♦user 3. Server♦RDP♦Vm 4. Vm♦VPC♦Server 2.1.3 Object The objects are 1. User database 2. VM database 3. Server 4. VPC Control 5. RD Clients 2.1.4 Activities 1. Experiment 2. Learning 3. Communicational Activity 9 2.1.5 Users 1. Students 2. teachers 3. researchers 4. Collaborators 10 2.2 Empathy Mapping Figure 2.2: Empathy Mapping 2.2.1

Users: The user of our product will be : ♦ Teachers ♦ Students ♦ Researchers 2.2.2 Stackholders: The person or the group of the people who are involved in this product are: ♦ Security-Infrastructure-Designer ♦ Security-expert ♦ Hackers 11 2.2.3 Activity: Activities mainly focuses on the key functions of the product. ♦ Topology ♦ Share ♦ learn ♦ Collaborate 12 2.3 Ideation Canvas Figure 2.3: Ideation Canvas 2.3.1 People : 1. Security Expert 2. Ethical Hackers 3. Security Infra Designer 4. Students 5. Teachers 6. Reseachers 2.3.2

Activities The activities which are going to be undertaken by our project are: 1. Learning 13 2. Sharing 3. Topology 4. Collaboration 2.3.3 Situation /Location /Context The locations or the context on which our product will be useful are: 1. Practice-&-Go 2. Geo-Independent 3. Any Device 4. Anywhere 2.3.4 Props The props

that will be used in our project are: 1. Laptop 2. Computer 3. Tablet 4. Server 5. Browser 6. ssh Clients 14 2.4 Product Development Canvas Figure 2.4: Product Development Canvas 2.4.1

Purpose: The purpose behind doing this project and developing this product are as mentioned below: ♦ To make solution that have advantage of traditional method 2.4.2 Product Experience ♦ Easy ♦ Reliable ♦ Budget Friendly ♦ Accessible 15 Product Function 1. Remote Topology for Practice 2. Geo-Independent Product Features ♦ cost-friendly ♦ scalable ♦ collaboration ♦ Access-on-go 16 Chapter 3 Implementation 3.1 Diagram Class Diagram : Sequence Diagram : Activity Diagram : 17 Figure 3.1: Class Diagram 18 Figure 3.2: Sequence Diagram 19 Figure 3.3:

Sequence Diagram 20 Figure 3.4: Activity Diagram 21 Figure 3.5: Activity Diagram 22 Use Case Diagram : Figure 3.6: Usecase Diagram 23 Figure 3.7: Usecase Diagram 24 3.2 Designing 3.3 Hardware Implementation As soon as the Request & Authentication id done successfully the resource is available to the end user and the under explanation is more precise . Hardware Connections Figure 3.8: Diagram Figure 3.9: Diagram 25 Figure 3.10: Topology Figure 3.11: Topology 26 Figure 3.12: Screenshot1 27 Figure 3.13: Screenshot2 28 Figure 3.14: DEMO 29 Chapter 4 Advantages and Features 4.1 Advantages of our Work 1. A secure space to practice Cyber attacks 2.

A virtual Platform to learn , share and community 3. Scalable , 4. traceable and all tools at one place 4.2 Usefulness with respect to existing solutions 1. Affordable price and hands on equipments 2. Accessible from any where and on any platform 4.3 Unique Features 1. The impact of the Cyber attack and practice will be walled under the cloud infrastructure & simulation. 2. Law can be maintain and the practice is Ethical. 4.4 Future Scope 1. Development & User interface Alternative 2. Inter-networking Improvement & more Hardware Support 3.

Business & Start up Back bone 30 Chapter 5 Conclusion The virtual environment for Practising cyber security is indeed not only to the cyber security experts it will also be use full for the students , professional & the institution which are preparing the next worriers . Our Solution SpielPlatz includes the creation of labs , sharing of expensive hardware and tools . This lab not only focus on practical hands on practice but also on theoretical concepts and discussion This lab is based on cloud arch and available over internet using just a web browser.This lab also provide the GUI & SSH connectivity over web and the lab is compatible with any device which has a HTML5 supported web browser and a internet connection.

There is one more concert that the security of the cyber attack or practice should be walled inside the cloud practice environment. 31 Chapter 6 Reference <https://docs.oracle.com/javase/tutorial/> <https://guacamole.incubator.apache.org/> <http://tomcat.apache.org/tomcat-8.5-doc/index.html> <https://www.tutorialspoint.com/unix/> Bibliography <https://msdn.microsoft.com/en-us/library/cc240445.aspx> <https://tools.ietf.org/html/rfc6143> <https://guacamole.incubator.apache.org/api-documentation/> 32 Appendices

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