实验2实验报告

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| **课程名称** | 操作系统 | **指导教师** | 叶晖 | **实验日期** | 2022.03.28 |
| **班级** | 20软件2班 | **姓名** | 李佳骏 | **学号** | B20190103224 |
| **实验成绩** |  | | | | |
| **一、实验名称**  shell程序设计 | | | | | |
| **二、实验目的**  (1) 了解 shell 的编程特点，掌握 shell 程序设计的基础知识。  (2) 对 shell 程序流程控制、shell 程序的运行方式有进一步的认识和理解。  (3) 通过本实验让学生应能够基本掌握编写 shell 程序的步骤、方法和技巧。 | | | | | |
| **三、实验环境**  (1)硬件环境：Intel Pentium III 以上 CPU，128MB 以上内存，2GB 以上硬盘  (2)软件环境：Red Hat Linux 9.0 以上版本操作系统。 | | | | | |
| **四、实验内容**  编写一段 shell 程序，实现文件的备份和恢复。 | | | | | |
| **五、实验原理**  shell 是一个命令解释程序，目前几大主流 shell 类型有：Bourne shell, C shell,K shell,分别简写为 bsh, csh, ksh。用 shell 语言写出来的程序，不需要通过编译即可 执行。 shell 提供了你与操作系统之间交互的环境。 | | | | | |
| **六、实验步骤**  任务一代码如下：  #!/bin/zsh  # backup.sh  #备份目录函数  backupdir()  {  dirtest  echo "Backupping..."  tar -zcvf /home/ljjtpcn/Desktop/backup.tar.gz $DIRECTORY  }  #恢复目录函数  restoredir()  {  dirtest  echo "Restoring..."  tar -xzvf /home/ljjtpcn/Desktop/backup.tar.gz  }  #验证目录函数  dirtest()  {  echo "Please enter the directory name of backup file:"  read DIRECTORY  if [ ! -d $DIRECTORY ]  then  echo "Sorry,$DIRECTORY is not a directory!"  exit 1  fi  cd $DIRECTORY  }  clear  ANS=Y  while [ $ANS = Y -o $ANS = y ]  do  echo "==========================="  echo "= Backup-Restore Men ="  echo "+++++++++++++++++++++++++++"  echo "+ 1:Backup Directory +"  echo "+ 2:Restore Directory +"  echo "+ 3:Exit +"  echo "+++++++++++++++++++++++++++"  echo "Please enter a choice(1-3):"  read CHOICE  case "$CHOICE" in  1) backupdir;;  2) restoredir;;  3) exit 1;;  \*) echo "Invalid Choice!"  exit 1;;  esac    if [ $? -ne 0 ]  then  echo "Program encounter error!"  exit 2  else  echo "Operate successfully!"  fi    echo "Would you like to continue ? Y/y to continue, any other key to exit:"  read ANS  clear  done  任务三代码如下:  #!/bin/zsh  # mountusb.sh  #exit method  quit()  {  clear  exit  }  #add record method  add()  {  clear  echo "Enter name and score of a record."  echo "\c"  if [ ! -f ./record ] ; then  touch record  fi  read NEWNAME  echo "$NEWNAME" >> ./record  echo "Add Successfully"  sort -o ./record ./record  }  #search method  search()  {  clear  echo -n "Please Enter Name >>>"  read NAME  if [ ! -f ./record ]; then  echo "You must have some scores before you can search!"  sleep 2  clear  return  fi  until [ ! -z "$NAME" ]  do  echo "You didn't enter a name!"  echo "Please Enter NAME >>>"  read NAME  done  grep -i "$NAME" ./record 2> /dev/null  if [ $? = 1 ];then  echo "Name not in recond."  fi  }  #delete method  delete()  {  clear  echo "Please Enter Name >>>"  read NAME  if [ ! -f ./record ]; then  echo "You must have some scores before you can search"  sleep 5  clear  return  fi  until [ ! -z "$NAME" ]  do  echo "You did't enter a name!"  echo "Please Enter Name >>>"  read NAME  done  grep -i "$NAME" ./record 2> /dev/null  if [ $? = 1 ];then  echo "Name not in record."  else  cp record record.bak  rm -f record  grep -vi "$NAME" ./record.bak > record  rm -f record.bak  echo "Delete Successfully!"  fi  }  #display method  display()  {  more ./record  }  clear  while true  do  echo "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"  echo "\* STUDENT'S RECORD MENU \*"  echo "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"  echo "####################################"  echo "# 1:ADD A RECORD #"  echo "# 2:SEARCH RECORD #"  echo "# 3:DELETE A RECORD #"  echo "# 4:SHOW ALL RECORD #"  echo "# Q:EXIT #"  echo "####################################"  echo -n "Please Enter Your Choice {1,Q}:"  read CHOICE  case $CHOICE in  1) add;;  2) search;;  3) delete;;  4) display;;  Q|q) quit;;  \*) echo "Invalid Choice!";  sleep 2;  clear;;  esac  done | | | | | |
| **七、实验结果**  **任务一**  **截图_选择区域_20220328151249**  **解压:**  **截图_选择区域_20220328151352**  **任务三**  **添加功能**  **截图_选择区域_20220328192023**  **查询功能**  **截图_deepin-terminal_20220328192316**  **未找到姓名时有**    **删除功能**    截图_选择区域_20220328193619  **删除不存在的数据时有:**  截图_deepin-terminal_20220328192550  **删除成功:**    **显示所有数据:**  **截图_deepin-terminal_20220328192909** | | | | | |
| **八、实验总结**  通过这两个试验,我初步了解了shell的编程特点，也基本掌握了shell程序设计的一些基础性的知识，同时对shell程序的运行方式以及程序控制流程有了进一步的认识，基本掌握了shell程序的编写方法以及一些使用技巧 | | | | | |
| 1. **教师评阅意见** | | | | | |