Task-1

a) saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ grep --color=always "battery" battery-life.txt.data

Output - After I plugged it in to my USB hub on my computer to charge the battery the charging cord design is very clever !

 After you have paged tru a 500, page book one, page, at, a, time to get from Chapter 2 to Chapter 15, see how excited you are about a low battery and all the time it took to get there !

 After 1 year you pay $80 plus shipping to send the device to Amazon and have the Kindle REPLACED, not the battery changed out   .

The fact that Kindle 2 has no SD card capability and the battery is not user, serviceable is not an issue with me .

 Things like the buttons that made it easy to accidentally turn pages the separate cursor on the side that could only select lines and was sometimes hard to see the occasionally awkward menus the case which practically forced you to remove it to use it and sometimes pulled the battery door off .

 The issue with the battery door opening is thus solved, but Amazon went further, eliminating the door altogether and wrapping the back with sleek stainless steel .

 Frankly, I never used either the card slot or changed the battery on my Kindle 1 but I liked that they were there and I miss them on the Kindle 2, even though, I have to admit, I don't actually need them .

 It's also easy to charge the Kindle in the car if you have a battery charger with a USB port   .

 You can't carry an extra battery , though with the extended battery life and extra charging options it's almost a non, issue , and you can't replace the battery because of the iPod, like fixed backing .

 For one thing, there's no charge except battery power no pun intended !

 Before purchasing, I was obsessed with the reviews and predictions I found online and reading about some of the critiques such as the thick border, the lack of touchscreen, lack of battery SD slot, lack of a back light, awkward difficult keyboard layout, minimally faster page flipping, and the super, high price .

 As for the battery, Amazon's explanation was that it'd thicken the Kindle, so I'm fine with it b c the slenderness of the K2 is such a plus .

Short battery life , I charged this thing for a couple of hours, 24 hours ago , it's still running and just at 75% of full power .

 I turned it on, noticed there was about a half a battery charge and proceeded to find my way around the thing .

Fourth, your battery icon stinks .

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It is so subtle that you can't tell how much battery life is left .

Kindle is an out of the box reading, ready unit that immediately addressed me by my nickname, no log, in necessary, and could have begun downloading whatever I wanted over the 3G Whispernet within seconds as the battery was charging,

very thin, light, weight, and attractive, looking with more data storage and faster battery charges with longer usage compared to Kindle 1,

What I'm ambivalent about , I don't find the battery life any better than the K1, I thought the K1 battery life was perfectly fine .

extended use of this feature will cut into battery life significantly, I've been getting 2 .

because the battery ran down .

A week ago, I ordered my Kindle 2 and when it was delivered, the battery was in critical stage and it would not power on .

When that came in, it was also in the critical battery stage and this time the charge light would not even come on upon charging .

K2 goes into sleep mode if you leave it be for a few minutes, but in this mode it still uses battery power if wireless is enabled .

Many have been critical of the non user replaceability of the battery .

I can do without the K2 several years from now for a week while the battery gets replaced .

More likely, by the time the battery no longer holds a charge, there will be a K7 with a color screen and 200 times the memory that I'll want to upgrade to !

And the battery life has gotten a lot shorter too, again, after TONS of use .

which, I guess, is unavoidable with rechargable batteries, but I wish I could change the battery myself .

The battery was almost fully charged upon receipt so I turned it on and I was in business .

Good thing the nook boasts a removable back cover, because the store clerk had to take it off to remove the battery for a hard restart .

The 2 days battery life was with the wireless turned ON which is wholly unneccesary in the normal operation of the device .

Turn wireless OFF , It saves your battery .

And I like the fact the wireless is a menu option, I just leave it on all the time anyways with little perceptible battery drain .

The Sony takes 60 seconds to go back to the main menu and used an incrediable amount of battery .

The original Kindle had a removable battery and you could buy extra batteries in case you'd be away from a power source for an extended time .

The battery in the Kindle 2 is not removable by the owner .

The Sony is smaller and thinner and, I think, has longer battery life .

It's not clear how big an advantage it is to have the extra battery life, though, because both get you through a long day with power to spare .

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the screen is small, and the battery doesn't last long enough to be used in the way I use books .

The battery charged quickly, in less than 2 hours .

If I didn't have a reading lamp handy, I find that the Mighty Bright clip on battery operated book light that amazon .

would no doubt run down the Kindle 2's battery faster .

So far, the battery charge seems to last quite a long time for reading .

I leave the wireless access feature turned off for longer battery life .

So far, it has taken anywhere from two to three hours to recharge the device, depending on how far down I've let the battery run .

I'm not pleased with the prospect of having to send the unit in to have the battery replaced when it finally fails and won't take or hold a charge .

Apparently the Kindle 1 had a battery the owner could replace quickly, the way a cell phone does .

So I give the Kindle 2 an A, minus, the minus because the battery isn't replaceable by the end user .

So my only real complaint right now is a battery the end, user can't replace .

And the lack of backlight saves on the battery .

I can leave it on sleep for days and hardly ever need to recharge the battery .

3The battery definitely does not last two weeks on mine .

With 2, 3 hours of reading per day, my Kindle battery has lasted me only 4 days .

No idea what battery life is like because I just gave it to her .

>> Better battery life, FAR better with wireless function on .

To me, this is more important than a user, replaceable battery .

>> It has a user, replaceable battery, though this is offset by improved life with the built, in Kindle 2 battery .

The battery life is disappointing , with the wireless on, it probably wouldn't last 20 hours of determined reading .

A single battery charge of my Kindle lasts almost two weeks compared to the 3, 4 hours on my iphone or the 5, 6 hours on my netbook .

Besides, I don't want to make the tradeoff of inferior battery life in order to power a device, native backlight .

Plus the touch screen consumes battery life .

4, I like that you can change the battery in the Nook and you can add a memory card .

However I have IPods and I never use up all the memory or battery life .

Oh and one more thing , I've discovered that if you turn of wifi   until you know you need to send or retrieve something, the battery lasts for many many more hours .

A clip, on light seems like a fine solution, plus it doesn't drain the battery .

, The battery life seems fine to me .

I left wireless on for the first 3 days, and after reading through Ur and 25% of DaVinci Code , plus lots of general playing around with the device and checking out

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features, I got the low, battery warning about 55 hours after intially charging it to full .
 This feature uses a lot of battery and the battery lasts for maximum 2, 3 days but it is worth it .
I live in the UK, my Kindle arrived last Thursday and it was up and running in minutes as the battery had some charge when it arrived .
 The battery life is unbelievable too .
 Also, I only carried my kindle on the plane to Japan, and I could read for over 15 hours and the battery wasn't even halfway over .
 The books download quickly, the battery lasts a long time, it is simple to use, the bookmark feature is nice, and I love the cool pics on the screen when you turn the gadget off .
 The battery life is great and I even like the screen savers .
 I just found out how to save the battery and you can read for well over a week without a charge .
 If the battery lasts a couple years, not being able to replace it myself will not be a factor either .
 I've left the wireless on and really don't see tremendous battery usage yet .
At first I thought,wait a minute,no memory chip,no exchangeable battery,a few other diff .
It came with battery uncharged, but it charged up as advertised in less than 3 hours .
 And the long battery life is amazing !
 The battery life seems amazing .
 While the Kindle 2 shows the title on the left as before and more readable, the battery life and network icons are in the place of the author's name .
 By the way, Kindle battery lasts forever indeed !
Binary file battery-life.txt.data matches

   b) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep 'good|bad|worst' battery-life.txt.data**

Output - Battery life is very good, even with the wireless on constantly .
, Battery life seems a bit longer but the K1 was good too .

   c) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ sed 's/[^a-zA-Z]//g' battery-life.txt.data | grep amazing**
 Output - And the long battery life is amazing
        The battery life seems amazing

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d) saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ grep [[:digit:]] battery-life.txt.data hotel-service.data

Output - battery-life.txt.data: After you have paged tru a 500, page book one, page, at, a, time to get from Chapter 2 to Chapter 15, see how excited you are about a low battery and all the time it took to get there !
battery-life.txt.data: NO USER REPLACEABLE BATTERY, , Unless you buy the extended warranty for $65 .
battery-life.txt.data: After 1 year you pay $80 plus shipping to send the device to Amazon and have the Kindle REPLACED, not the battery changed out .
battery-life.txt.data:The fact that Kindle 2 has no SD card capability and the battery is not user, serviceable is not an issue with me .
battery-life.txt.data: Frankly, I never used either the card slot or changed the battery on my Kindle 1 but I liked that they were there and I miss them on the Kindle 2, even though, I have to admit, I don't actually need them .
battery-life.txt.data: As for the battery, Amazon's explanation was that it'd thicken the Kindle, so I'm fine with it b c the slenderness of the K2 is such a plus .
battery-life.txt.data:Short battery life , I charged this thing for a couple of hours, 24 hours ago , it's still running and just at 75% of full power .
battery-life.txt.data:Kindle is an out of the box reading, ready unit that immediately addressed me by my nickname, no log, in necessary, and could have begun downloading whatever I wanted over the 3G Whispernet within seconds as the battery was charging,
battery-life.txt.data:very thin, light, weight, and attractive, looking with more data storage and faster battery charges with longer usage compared to Kindle 1,
battery-life.txt.data:What I'm ambivalent about , I don't find the battery life any better than the K1, I thought the K1 battery life was perfectly fine .
battery-life.txt.data: extended use of this feature will cut into battery life significantly, I've been getting 2 .
battery-life.txt.data:A week ago, I ordered my Kindle 2 and when it was delivered, the battery was in critical stage and it would not power on .
battery-life.txt.data: K2 goes into sleep mode if you leave it be for a few minutes, but in this mode it still uses battery power if wireless is enabled .
battery-life.txt.data: I can do without the K2 several years from now for a week while the battery gets replaced .
battery-life.txt.data: More likely, by the time the battery no longer holds a charge, there will be a K7 with a color screen and 200 times the memory that I'll want to upgrade to !
battery-life.txt.data: The 2 days battery life was with the wireless turned ON which is wholly unneccesary in the normal operation of the device .
battery-life.txt.data:, Battery life seems a bit longer but the K1 was good too .

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battery-life.txt.data: The Sony takes 60 seconds   to go back to the main menu and used an incrediable amount of battery .

battery-life.txt.data: The battery in the Kindle 2 is not removable by the owner .

battery-life.txt.data: The battery charged quickly, in less than 2 hours .

battery-life.txt.data:would no doubt run down the Kindle 2's battery faster .

battery-life.txt.data: Apparently the Kindle 1 had a battery the owner could replace quickly, the way a cell phone does .

battery-life.txt.data:So I give the Kindle 2 an A, minus, the minus because the battery isn't replaceable by the end user .

battery-life.txt.data:3The battery definitely does not last two weeks on mine .

battery-life.txt.data: With 2, 3 hours of reading per day, my Kindle battery has lasted me only 4 days .

battery-life.txt.data:>> It has a user, replaceable battery, though this is offset by improved life with the built, in Kindle 2 battery .

battery-life.txt.data: The battery life is disappointing , with the wireless on, it probably wouldn't last 20 hours of determined reading .

battery-life.txt.data: A single battery charge of my Kindle lasts almost two weeks compared to the 3, 4 hours on my iphone or the 5, 6 hours on my netbook .

battery-life.txt.data:4, I like that you can change the battery in the Nook and you can add a memory card .

battery-life.txt.data: Plus the Kindle 2's Battery life is 4 days longer per charge .

battery-life.txt.data: I left wireless on for the first 3 days, and after reading through Ur and 25% of DaVinci Code , plus lots of general playing around with the device and checking out features, I got the low, battery warning about 55 hours after intially charging it to full .

battery-life.txt.data: This feature uses a lot of battery and the battery lasts for maximum 2, 3 days but it is worth it .

battery-life.txt.data: Also, I only carried my kindle on the plane to Japan, and I could read for over 15 hours and the battery wasn't even halfway over .

battery-life.txt.data:It came with battery uncharged, but it charged up as advertised in less than 3 hours .

battery-life.txt.data: While the Kindle 2 shows the title on the left as before and more readable, the battery life and network icons are in the place of the author's name .

Binary file battery-life.txt.data matches

hotel-service.data: It's rated 4, stars, but I also stayed at an equivalently rated Marriott while in London, and a 3, star Holiday Inn Express in Scotland, and the service and rooms were much better at the other locations .

hotel-service.data: Excellent location next to Gloucester Road tube station that has 3 train lines making getting around London really easy .

hotel-service.data:The hotel was a great location just 1 block from Tube, Grocery Stores, Pharmacy and 2 blocks from Natural History and Victoria   Albert Museums .

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hotel-service.data:Convenient location not 4, star room and services but OK .

hotel-service.data:Great location but definitely NOT a 4 star hotel .

hotel-service.data:Great location but is it really 4 star ?

hotel-service.data:went for a city break with the family hotel good location harrods 20 mins walk,royal albert hall 10 mins,and under ground around the corner,plenty to see and do around hotel .

hotel-service.data: One good aspect of this hotel was the location, it is about 2 blocks to the tube station, shopping and eating .

hotel-service.data: Its location is probably the first thing worth mentioning, being a 10 minutes walk from the natural history museum, a 15 minutes walk from beautiful Hyde Park and just behind the corner of the Gloucester Road underground station .

hotel-service.data:Location is great, 5 mins walk to the Natural History Museum, 15 to Kensington High St and 2 mins to the tube and in a high room you can see for miles .

hotel-service.data:Also it is perfect for the Gloucester Road tube station with direct trains to Heathrow airport terminals,very good location turn right as you exit the station the hotels a 3 minute walk on your right hand side .

hotel-service.data: It's a great location , literally a minute's walk to Gloucester Road tube station, 5 mins walk to the Victoria Albert Museum and the British Science Museum .

hotel-service.data:The breakfast we had 1 morning was to say the least quite incredible there was so much variety, there was also no complaint in this area with the staff they were right on the ball helpfulThis hotel while being high rise had some low moments for us as we felt some areas were really lacking but the hotels location is superb and staff like Peter did try and make your stay worth while .

hotel-service.data:Great location, 1 min from Gloucester Tube .

hotel-service.data:Excellent location in the nice and relatively quiet area 100m from Tube station and shops restaurants .

hotel-service.data: Coming from Cardiff, the location was perfect, as it was straight off the M4 and a short drive on the A4 before reaching the hotel .

hotel-service.data: Loved the location as it's only a 1, minute walk from the Gloucester Road tube station .

hotel-service.data: The hotel has an unbeatable location in a very nice part of South Kensington , only 1 block from the Gloucester Road station .

hotel-service.data:The hotel itself is truly in a great location , on the same road as the major London museums it took a leisurely 5, 10 minutes to stroll to the wonderful Natural History Museum a further 5, 10 minutes up the road to Harrods .

hotel-service.data: If we hadn't experienced a problem with the a c I would have rated my overall stay here 5 5 for value, location, comfort, etc .

hotel-service.data: This being our first ever visit to UK, must say the location of the hotel, just 2min walk from Glousceter Rd tube stn was a great advantage as even

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during the weekend, Piccadely line remained open, though distict and central lines had some restrictions on a c of maintainence etc .

hotel-service.data: The location is great however, only 5 mins walk from the Gloucester Road tube and 10 mins walk to the South Kensington museums, Albert Hall, etc .

hotel-service.data:This is our 2nd time at the Kensington Forum and love the location .

hotel-service.data:Location was great come out of tube station, take first turn right and walk 150 yards   you're there !

hotel-service.data:The location of the hotel was excellent, a 5 min stroll from Gloucester Road tube, next to tesco express and a large supermarket just around the corner .

hotel-service.data: Our parents who are 55, 70 were able to wonder around the entire city by themselves due to the ideal location of this hotel .

hotel-service.data: The Forum Holiday is a big high rise and right across the street, is another Holiday Inn, albeit it much smaller which tends to confuse people looking for that 2nd location hotel .

hotel-service.data: The location in South Kensington is excellent as the Gloucester Road tube station is just around the corner and is served by 3 main lines, , District, Circle and Piccadilly .

hotel-service.data: Gloucester Road tube station is at the westernmost side of zone 1, making it a perfect location between the airport and central London .

hotel-service.data:The location of the hotel is superb , 2 minutes walk from Gloucester Road tube   .

hotel-service.data:Location wise it is a 5 min walk to the tube and you are on the circle, district and picadilly line .

hotel-service.data: Great location, close to a tube station with a 24 hour Tesco metro nearby   .

hotel-service.data:b basis Hotel huge , 900 rooms Buffet breakfast good for a buffet This is a well run hotel with a great location for the metro Rooms a bit on the small side but I would stay again

hotel-service.data: The location is also good because it is literally 150 footsteps from Gloucester Road Underground Station .

hotel-service.data:, checked us in at 11 am after a transatlantic flight, room larger than average, compared to our continental Europe travel, location, location, location .

hotel-service.data:Great location, grocery store open 24 hours within 5 mins walk and friendly international staff, will stay here again .

hotel-service.data: It is a relatively new hotel, clean and has a great location which is close to the underground with 3 connecting lines, it gives you an advantage to go anywhere without changing lots of trains .

hotel-service.data: Speaking of the tube, the location really is great 1 block away !

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hotel-service.data: Although the location is a bit removed from the West End, it is only a block away from the Gloucester Road underground, with three train lines that will take you almost anywhere in the city in 15 minutes or less .
hotel-service.data:Yes I do stay here a lot and as such, guess that I get extra special treatment but it is in a great location with the tube within a 2 min walk surrounded by places to eat and drink and far enough out of central London to be quiet but you can still be in the west end in 15 minutes .
Binary file hotel-service.data matches

e) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ grep -o "[^a-zA-Z0-9 \t]" battery-life_amazon_kindle.txt.data hotel-service.data | sort | uniq -c**

Output -   4 battery-life_amazon_kindle.txt.data:>
     123 battery-life_amazon_kindle.txt.data:,
      6 battery-life_amazon_kindle.txt.data:!
     82 battery-life_amazon_kindle.txt.data:.
     34 battery-life_amazon_kindle.txt.data:'
      2 battery-life_amazon_kindle.txt.data:$
      2 battery-life_amazon_kindle.txt.data:%
     90 battery-life_amazon_kindle.txt.data:
    431 hotel-service.data:,
      1 hotel-service.data::
    29 hotel-service.data:!
      1 hotel-service.data:?
    377 hotel-service.data:.
    70 hotel-service.data:'
    412 hotel-service.data:

f) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep -oi 'good|bad|worst' battery-life.txt.data | sort | uniq -ci**

Output - 3 good

g) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ sed 's/[^[:alpha:]]/ /g' battery-life.txt.data | sort | tr '\n' ' ' | sort | tr -s ' ' | awk '{print tolower($0)}' | sort | tr ' ' '\n' | sort | uniq -c | sort -n | tail -1**

Output - 148 the

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h) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep -oi 'good|bad|worst' battery-life.txt.data | sort -u**

Output - good

i) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep -oi 'services|service' hotel-service.data | sort | uniq -ci**

Output - 20 service
        1 services

j) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep -oi 'good|bad|better|worst' hotel-service.data | sort | uniq -ci | sort -n | tail -1**

Output - 85 good

TASK 2

a) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ egrep -oi 'good|bad|better|worst' hotel-service.data battery-life.txt.data | sort | uniq -ci | sort -n**

Output - 2 hotel-service.data:bad
      3 battery-life.txt.data:better
      3 battery-life.txt.data:good
     17 hotel-service.data:better
     85 hotel-service.data:good

b) **saad@saad-Lenovo-ideapad-330-15ARR:~/Desktop/sm lab 4$ ls -lh | awk '{print $5" "$9}' | sort -n**

Output - 9.6K battery-life.txt.data
     30K sm_assignment_sols.odt
     38K hotel-service.data
    208K System_Management_lab_4.pdf

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Task 3

Advantages of grep and pipe commands

- grep treats everything as a string and then finds the string passed as the argument in files.

- Pipe command redirects the output of one function to the input of another and is actually very effective. For example some digits extracted using grep command can be arranged in ascending or descending order using the sort command but instead of saving the output of grep command and then passing that saved command as input for the sort command, we can make use of pipe and save ourselves from the hassles of saving the output

- Pipe commands can be used successively for multiple times.

- The inbuilt options for grep command are of great use. For example egrep/grep –e can be used for finding multiple strings in files. Others like grep –o (outputs the relevant string) and grep –r (recursive searching) are life saver.

- Grep can also perform Boolean operations like 'And', 'Or', 'Not' etc. using pipe, egrep and grep –v respectively.

- Grep can serve as a very powerful command when used with regular expressions like [[:alpha:]], [^a-zA-Z], [^[:digit:]], etc. and in succession with pipe command.

Limitations of grep and pipe commands

- One cannot pass in outputs from multiple functions through the pipe command

- Grep cannot find everything, it searches strings only in files

- Grep can't search for files or directories using name or other attributes

- Grep cannot sort the output in and of itself

- Grep cannot count the number off occurences of a string by itself

- One cannot pass inputs recursively to a function using pipe

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