Advanced Concepts Training Corporation

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SUMMER IS HERE!
Vacations, cookouts, reunions and more! The summer months are the perfect time to rest, relax and renew;
a season for quality time with family and friends. Don't be a work-aholic this summer! Be sure to take some time to enjoy life and relax.

Stephen Johnson
President
Advanced Concepts Training Corp.

redhat
Training Partner

Beat the Summer Heat without Breaking the Bank

As summer approaches and temperatures rise, most people will retreat to the cool comfort of the air-conditioned indoors. While the ease of turning the thermostat down brings instant relief, the sticker shock of the electric bill follows closely behind. So, how *can* your family stay cool this summer without necessitating a sky high energy bill? Let's review some basics.

Begin by checking the outdoor unit for maximum efficiency. Make sure your AC unit, whether a window unit or central air, is clear of debris with room to operate for maximum efficiency. If you have central air, routinely change the air filters and have an HVAC technician service the system prior to summer. Cleaning and proper maintenance can do wonders for the efficiency of the system. When you are not home, turn the unit to a warmer temperature or even turn it off if the unit applies to an individual room. Each degree can lower your energy bill by a few percentage points (and we could certainly all stand to save some more money these days!) If you have a programmable thermostat, put it to use!

Build Your Heat Illness Awareness

(Warning: this is not medical advice. The following are simply suggestions for building your awareness)

With summer vacations looming on the horizon, many of our minds have turned to the feeling of a relaxing day on the beach or other enjoyable outdoor summer activities. If someone were to mention summer health concerns, most minds would jump to the threat of skin cancer and the protection of sunscreen, but heat related illnesses are an issue that should be of equal if not greater, concern. While concern is often focused on children and the elderly, heat related threats remain for the rest of the population. The three main heat related illnesses to be aware of are heat cramps, heat exhaustion and heat stroke.

Heat illness can strike anyone, but those taking antihistamines or antipsychotic medications, the elderly, children, and the obese are most susceptible. Higher levels of humidity also increase the risk by interfering with the ability of moisture to evaporate, including sweat, which allows the body to cool.

Heat cramps are the least severe heat illness and are caused by excessive loss of necessary fluids, salt and nutrients through high exertion. Symptoms consist of severe cramps (hard, tense

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Your air conditioning unit/thermostat isn't the only means of cooling off and saving money this summer. Some other tips may be:

- Keep blinds/curtains/shades closed during the day to keep sunlight from warming your house. (Also, consider energy efficient drapes).
- If you have ceiling fans, use them! They'll help circulate the cool air without using tons of electricity. You can also use a portable fan to move from room to room.
- If windows/doors leak air, add weather stripping and ensure each is closed tightly. Open/close them as little as possible to keep the warm air out and the cool air in.
- Try to limit daytime use of large appliances (ex. dishwasher, dryer, stove) to reduce the effect of the heat they give off.
- Peak hours for energy costs are between 2 and 5 PM. Use as few appliances as possible during this time.
- Using a dehumidifier will reduce the moisture in the air and help your system run better.

There are also long-term solutions that will bring you a solid return on your investment.

- Lighten the color of your roof/house. Lighter colors reflect heat and help keep your whole house cooler.
- Strategically plant trees in your yard to assist in summer cooling. Leaf-shedding trees are particularly helpful when positioned on the sides of the house with western and southern exposure.
- Shading your air conditioner will make it easier for the unit to cool the air.
- If shopping for an AC unit, be certain you don't buy too large a unit for your home. Look for Energy Star models.
- Check your attic for proper ventilation. An exhaust fan installed in the attic can subtract 10 degrees off your home's temperature!

If the heat becomes simply too much to bear, you can always escape into a nice cold movie theater, the neighborhood pool, museum, or local library. Options abound!

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muscles) that usually first appear in the hands or lower extremeties. Cramps can be relieved by resting out of the heat, eating/drinking moderately salty food/beverages to replace what has been lost, and gently massaging/applying pressure to the affected areas.

Heat exhaustion has the potential to do more serious damage. Much like heat cramps, heat exhaustion is also a result of losing necessary water and salt via excessive sweating. This lack of bodily necessities disrupts circulation and can disturb brain function (people with existing heart issues or on low sodium diets are at increased risk). While heat exhaustion is typically not life-threatening, it does require immediate medical assistance. Signs of heat exhaustion include: fatigue, nausea, headache, muscle pain/cramps, weakness, confusion, agitation, anxiety, slow/weakened heart rate, dizziness, fainting, drenching sweats, and excessive thirst.

At the first sign of heat exhaustion, get medical assistance as soon as possible. Move the victim to a cooler environment, provide them with a cool beverage (preferably salty, like sports drinks) and lie flat with his/her feet elevated while awaiting medical help.

Heat stroke is the most lethal of the three. If not treated immediately, it can result in irreversible brain damage or even death. Symptoms of heat stroke include: unconsciousness for more than a few seconds, difficulty breathing, confusion, intense restlessness, anxiety, increased heartrate, profuse sweating, convulsion, severe vomitting or diarrhea, and flushed, hot dry skin-even in armpits.

Anyone suffering from heat stroke needs IMMEDIATE medical attention. The absolute first thing to do is call 911. While waiting for emergency assistance, move the victim to the shade and wrap them in cool, wet clothing/bedding or remove their clothes and sponge them with cool water. Fanning the victim will aid in lowering their temperature. If you can, prop the person on their side to expose as much of their skin's surface area to the air as possible. Do NOT place the person in an ice bath. Ice packs, however can be used on areas known to have large blood vessels close to the surface (groin, neck, underarms). If the victim is alert enough to be able to swallow without choking, provide them with fluids to combat dehydration.

Upon being taken to the hospital by emergency medical workers, most victims of heat stroke will require IV treatment and will be confined to the hospital for at least 24 hours for observation.

If recognized upon the onset, heat illness related disasters can be averted and lives can be saved, as long as you are aware of the signs, symptoms and solutions to dealing with potential hazards. For more information regarding heat illness, consult your physician.

Oracle Instructor's Corner!

By Terry W. Stough, ACT's Senior Oracle Instructor

"Who done it?" Mystery movies are fun. Mystery data is not. More specifically, when a change is made to data, often it is important to know who made the change.

There are several ways to approach this subject. One thing it would be interesting to know is what Oracle knows about a given user. The second thing would be what does Oracle remember about any given transaction.

In this article, we will explore the first question. In a later article, we will look at the second question.

Often when I am teaching classes I get a question like this: We have an application where every user logs on as the same Oracle user. That means that if someone makes a change and we want to know who, we have no way of figuring it out.

Remember the old standard Watergate question: "What did you know and when did you know it?"

Let's look at all the things Oracle knows about a given user at the time during and shortly after his/her connection.

First, Oracle obviously knows the user name. As a matter of fact, if we have DBA privileges, we can look at V$SESSION and find everything we need to know about any current user connection. Here are some of the columns of interest:

  * USERNAME: The name of all connected users. If a user is connected more than once, there will be a separate line in V$SESSION for each connection.

  * STATUS: Whether the current connection is active or inactive. By the way, we could query V$TRANSACTION to determine if there were pending transactions for the session.

  * SERVER: This lets us know whether the user is using a DEDICATED server connection or a SHARED connection.

  * OSUSER: This one surprises most students. This column shows the operating system account the Oracle user is using. That would help resolve the above question. Even if many users are using the same Oracle user account, they are probably doing so as different operating system users.

  * MACHINE: This column tells us the specific Oracle server to which they are connected.

  * TERMINAL: This column tells us what client computer they are using. This would also be useful in determining "who dun it".

  * PROGRAM: This column tells us what program the user is using. This could be any application such as SQL*Plus. For background processes, the program listed will be ORACLE.EXE and will show the process after the program name.

  * TYPE: This will show in general whether it is a USER connection or a BACKGROUND connection.

There are many other things we can determine about the user. For example, we could use SYS_CONTEXT to get an IP address.

We could also look at past SQL issued by a user by querying V$SQLAREA. Here are some columns of interest:

  * SQL_TEXT / SQL_FULLTEXT: The first 1000 characters / the full text of SQL in memory. How much is there? It depends on memory available, activity, etc.

  * DISK READS / DISK WRITES / CPU TIME: This gives us an indication of overall user activity.

  * OPTIMIZER MODE / OPTIMIZER COST: This tells us how the last SQL statement was evaluated and its relative cost.

But what about if we want to know exactly who changed a specific piece of data, especially if that change occurred long after the above information ceased to exist in memory? Can it be done?

Well, as I try to teach in all my classes, the answer to most questions is the same -- it depends. There are actually two primary questions we must ask to determine the answer:

  * Are we operating the database in ARCHIVELOG mode?

  * How far back do we have the actual archive logs?

If you are not in ARCHIVELOG mode, you are basically limited to the data in the current redo logs. That could be good for minutes, hours or days depending on redo logs. If you are in ARCHIVELOG mode, you can use Oracle's Log Miner to go back as far as you can reconstruct the logs. This is supported through both an Enterprise Manager wizard and by using the Oracle supplied packages DBMS_LOGMNR and DBMS_LOGMNR_D. We can explore that in depth in another visit.

I look forward to seeing you in a class soon so that we can explore the wonders of Oracle together!

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