Unix Shell Programming

Advanced

Assignment #1

Power

Create a user defined function called *power* that takes two arguments a and b and when called, substitutes the value of `a raised to the power of b`.

For example,

```
a=2
b=10
p=`power $a $b`
echo $a ^ $b = $p
```

should produce an output

```
2^10 = 1024
```

For invalid inputs, the output from the function should be NaN.

For example,

```
a=2
b='asd'
p=`power $a $b`
echo $a ^ $b = $p
```

should produce an output

```
2^asd = NaN
```

Assignment #2

Number to words

Write a function called "number_to_words" that takes a number between 1 and 99,99,99,999 and echoes a string representing the input number in words.

```
number_to_words() {
    words=''
    # do stuff here
    echo words
}
```

For example,

```
echo `number_to_words 12345`
# output: twelve thousand three hundred forty five"
echo `number_to_words 10203040`
# output: "one crore two lakh three thousand forty"
echo `number_to_words 101`
# output: "one hundred one"
```

Assignment #3

Create a menu driven application using Unix shell scripting commands. When the script is run, the following menu should be displayed:

```
------ MAIN MENU ------
1. Add a product
2. Search product by id
3. Edit product
4. Delete product
5. List all products
6. Exit
----------------------
```

The application should exit only when the user inputs the choice number 6. For any invalid choice entered, an error message should be displayed, and the menu should be displayed again.

Following information about the product should be maintained in a CSV file.

1. Product id
2. Name of the product
3. Unit price
4. Units in stock
5. Discount

When displaying a single product (during search/edit/delete), it should be displayed like:

```
-------------------------------------------
ID          : 234
Name        : Lenovo ideapad Z560
Price       : 78900
In stock    : 17
Discount    : 7%
-------------------------------------------
```

When displaying the list of products, it should be displayed like:

```
ID        Name                    Price          In stock   Discount
---------------------------------------------------------------------
234       Lenovo ideapad Z560     78900             17         7%
```

```
821        Logitech optical mouse          900                29          5%
_____
```

When the user chooses the edit option, user should be asked the id to be searched. If found, display the information, and accept the changes, update the CSV file. If not found, an error message should be displayed.

When the user chooses the delete option, user should be asked the id to be searched. If found, display the information, and accept if the user wants to really delete. If not found, an error message should be displayed. If the user wants to delete, remove the record in the CSV file corresponding to the ID.