



**This workforce solution was funded by a grant awarded under Workforce Innovation in Regional Economic Development (WIRED) as implemented by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.**

Testing at  
Google™



Organize the world's information  
and make it universally  
accessible and useful.

career

books

movies

pets

catalogs

art

statistics

music

reviews

toys

photographs

quotes

products

news

research

Organize the world's information  
and make it universally  
accessible and useful.

history

email

people

childcare

business

addresses

health

catalogs

food

pediatrics

education

sports

maps

tickets

autos

# Google Today

## Company Snapshot

- Employees: >6000 worldwide
- Office Locations: More than 20 offices worldwide

## Market and Technical Snapshot

- Current Index: Largest collection of documents searchable on the web
- International: More than half our searches come from outside the U.S.
  - 109 interface languages and 112 international domains
- Market share: 59.7% of worldwide search results pages/searches.  
(Source: comScore qSearch, October 2005)
- Cereal Consumption: Mountain View Googlers consume 500 lbs. of breakfast cereal each day (source: Google chefs)



• "Most Intelligent Agent on the Internet"



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Challenges...

# Huge Technical Challenges

**Finding** the content (the science of crawling)

**Ranking** the content (proprietary algorithms)

**Reliability**: machines will go down

**Freshness**: Keeping index up-to-date

**Speed**: With 100s of millions of queries/day

**Monitoring**: Massive distributed system state

**Integrity**: Bit errors when managing terabytes

**Hardware**: Tens of 1000s of custom machines

# more » than just search



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our culture...

# Life at Google

- Many small teams working closely together
  - Everyone eats at Google café
  - Cross department interaction
  - Emphasis on innovation and commitment means hands-on contribution by everyone
  - Everyone wears several hats
- We make sure every idea is heard.
- Google engineers have “20 percent time”

# Great Benefits

- Flexible environment
- Fun atmosphere
- Free gourmet meals
- On-site massage, doctor, and dry-cleaning
- And all those “standard” things...
  - Medical and dental coverage
  - Vacations
  - 401K plans
  - Roller hockey...



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Careers...

# Google has experts in...

- Testing and Development – of course!
- Hardware
- Networking, distributed systems, fault tolerance
- Machine learning, statistics, information retrieval, AI
- Data structures, algorithms
- User interfaces
- Compilers, programming languages
- Product design
- Mechanical engineering
- Technical Writing
- ...and much, much more

# Googler Skills

## Core Skills for all Googlers

- Computer Science
- Solid Programming
- Diverse Interests
- Passionate
- Creative
- High-energy
- Self Starter
- Customer Focused
- Skilled Communicator

## Software QA Engineer focus more on...

- Coding
- Automation
- Leadership/ Broad Scope
- Functional Testing

## Software Engineer Test focus more on...

- OO Coding
- Infrastructure
- Automation Tools
- System Testing

## Software Engineers focus more on...

- OO Coding
- Design/Architecture
- Research

More Testing

More Coding

# Google advantages...

- Engineering centric culture
- Fast time to market
- Small company atmosphere
- More autonomy for developers
- Diversity of interesting projects
- Fluid internal job market
- An environment which fosters innovation
- Interesting team of industry experts
- Great tuition aide program
- Food

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## Career Opportunities for you

We have openings for full-time and internship opportunities available now!

For more information, please visit:

[google.com/jobs/students.html](https://google.com/jobs/students.html)

# Appendix



## Labs.google.com, Google's technology playground.

Google labs showcases a few of our favorite ideas that aren't quite ready for prime time. Your feedback can help us in play with these prototypes and send your comments directly to the Googlers who developed them.

### New! **Groups 2 Beta** - An update to Google Groups

Create and join searchable discussion groups and mailing lists

5/12/04 - [Give us feedback](#) - [Discuss with others](#)

### **Personalized Web Search**

Get personalized search results based on your interests

3/29/04 - [Give us feedback](#) - [Discuss with others](#)

### **Web Alerts**

Find out about new web pages on a topic of interest

3/29/04 - [Give us feedback](#)

### **Froogle Wireless**

Search for products from your cell phone using Froogle

7/24/04 - [Give us feedback](#) - [Discuss with others](#)

### **Google Deskbar** - [Download now](#)

Search using Google without opening your browser

11/6/03 - [Give us feedback](#) - [Discuss with others](#)

### **Google Compute** - [Download now](#)

Donate your computer's idle time to help scientific resea

3/26/03 - [Give us feedback](#) - [Discuss with others](#)

### **Google Sets**

Automatically create sets of items from a few examples

5/20/02 - [Give us feedback](#) - [Discuss with others](#)

### **Google Webquotes**

View search results with quotes about them from other sites

12/10/02 - [Give us feedback](#) - [Discuss with others](#)

### Graduates of Labs

#### **Search by Location**

Restrict your search to a particular geographic area

#### **Google Glossary**

Find definitions for words, phrases and acronyms

#### **Google News Alerts**

Specify a topic and receive email updates when news breaks

All Engineers get to use  
20% of their time to  
explore & invent.

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No questions asked.

# Fundamental Research

- Structure of Web
- Interests of Users
- Trends and Fads
- Languages
- Sets
- Relationships
- Facts

**Google Zeitgeist - Search patterns, trends, and surprises according to Google**

For both breaking news and obscure information alike, people around the world search on Google at [www.google.com](http://www.google.com). With a bit of analysis, this flurry of searches often exposes interesting trends, patterns, and surprises.

On a monthly, weekly, and sometimes daily basis, this Google Zeitgeist page will be updated to reflect lists, graphs, and other tidbits of information related to Google user search behavior.

Archived information [available here](#).

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2001 Year-End Google Zeitgeist [available here](#).

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**December 2001 Zeitgeist**

**Top 10 Gaining Queries**  
December 2001

- [seqway](#)
- [navidad](#)
- [george harrison](#)
- [herr der ringe](#)
- [pearl harbor](#)
- [christmas carols](#)
- [hanukkah](#)
- [norad](#)
- [vanilla sky](#)
- [orlando bloom](#)

**Top 10 Declining Queries**  
December 2001

- [taliban](#)
- [PLU-82](#)
- [melbourne cup](#)
- [leonid meteor shower](#)
- [michael jackson](#)
- [melanie thornnton](#)
- [hurricane michelle](#)
- [star wars trailer](#)
- [thanksgiving recipes](#)
- [pink floyd](#)

**Languages Used to Access Google - December 2001**

Language	Percentage
English	57%
German	12%
Japanese	7%
Spanish	6%
French	5%
Chinese	3%
Italian	2%
Other	8%

**Web Browsers Used To Access Google**  
March - December 2001

Browser	Usage % (Approximate)
MSIE 5.5	45-55
MSIE 5.0	15-25
MSIE 6.0	5-15
MSIE 4.0	5-10
Netscape 4.x	5-10
Other	5-10

**Translations / Day**  
December 2001

Language Pair	Translations / Day (Approximate)
English to German	150
English to Spanish	100
English to French	75
German to English	50
French to English	30
Spanish to English	20

# Google Tests Differently

- Develop tools and test harnesses
- Use a broad variety of testing techniques
- Automate, automate, automate!
- Testers are core members of the project
- Quality starts the moment designing starts
- Data and metrics used to make decisions

# Google Test Top 10

10. Google is different than everyone else.
9. Participate in the whole project lifecycle
8. Work with a lot of different kinds of people.
7. Get lots of experience in coding.
6. Testing makes you a better developer.
5. Opportunity for research.
4. See all the coolest new products first!
3. Break other people's code 😊
2. Learn from the experts.
1. Break things for a living!