



WELCOME TO

BINAR TECHNOLOGIES

Binar Technologies produces the most innovative User Experiences in the World. Founded by Shatilla Prayer and Associates, Binar has brought award winning technology to the automotive and software industries.

Binar Technologies has cutting-edge technology for various industries in the world. Binar Technologies is the future in engineering with locations all over the world in Europe, Americas, Asia, Africa, and Australia. Our newest location is being constructed in Montego Bay, Jamaica. Please visit Binartech.com/caribbean for more information on the company opening.

By Shatilla Prayer

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BINAR TECHNOLOGIES - LEADERS IN NOVATION

THE EXPERIENCE



ALL ABOUT THE USER

Binar Technologies is strictly about the user. We do usability testing for everything we release. That is why we are voted the best in the world. We know what users want when it comes to quality and efficiency. We are leaders in Innovation.

Binar Technologies is creating a new line of car multimedia systems and here is some of the research that has been conducted on our target demographic. Please read this guide to see the progress on our future multimedia products in 2017.



PROJECT SPECIFICS

SUMMARY OF THE DESIGN TASK

To develop an HTML/CSS LCD touch enabled web based interface for a next generation vehicle.

COMPANY NAME

BINAR Technologies

SLOGAN

The Leaders in Innovation

PROJECT TARGET DEMOGRAPHIC

The target demographic are Computer Programmers who are 21 years old and older who work in the industry. I would like to create a customized experience for these particular professionals.

The target income is around \$77,000 per year. I would like this system to be available for modern vehicles where users can also add specialized hardware at their convenience.

TECHNICAL SPECS

PROJECT CONSTRAINTS

The project is limited to vehicles that have an entertainment and communications systems within the interior. The vehicle must offer seating for at least 2 adults. This project is for sedans and SUV type vehicles. This product can be installed in older vehicles and newer vehicles and it is fairly customizable.

TECHNICAL REQUIREMENTS

The project is limited to vehicles that have an entertainment and communications systems within the interior. The vehicle must have a minimum of 2 seats. The vehicle also must be able to have the proper hardware to ensure compatibility with Binar Technology. The interface will be a size of 1080 X 1920.

```
parameters.contains("name")
    and p.name = :name";
parameters.contains("age")){
    and p.age = :age";
dQuery<Person> query = em.createQuery(hql
parameters.contains("name")){
query.setParameter("name", values[0].toString());
parameters.contains("age")){
query.setParameter("age", Integer.valueOf(values[1].toString()));
list()
```



RESEARCH

FACTS ABOUT PROGRAMMERS

I found some very interesting facts about my target demographic. Here are the facts about programmers with references

The typical developer is a married, middle-aged male in his early forties who has 1 to 3 children.

Males have accounted for between 80 and 90 percent of the developer gender mix since we first started reporting on this in 2001.

The percent of females in the profession has slightly increased as a trend, but was only at 14%

The average developer is 28.9 years old.



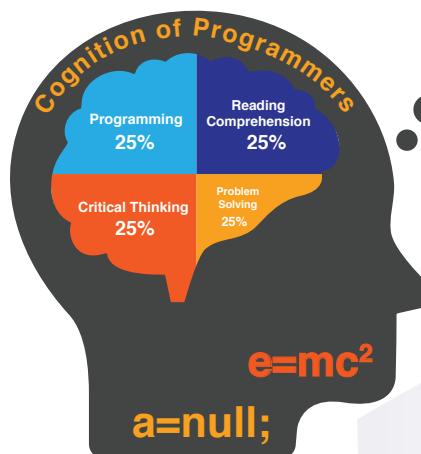
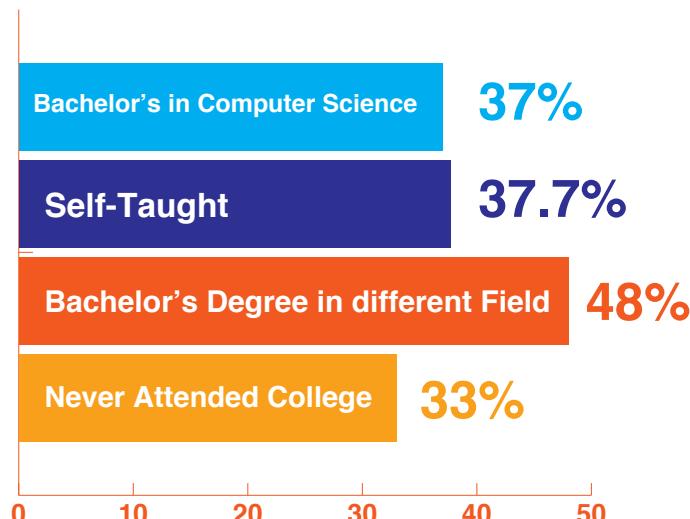
Windows maintains the operating system that most developers prefer over Mac and Linux.

Developers prefer working with a dark IDE theme.

Developers demand caffeine. The average developer drinks 2.2 servings of coffee, tea, Surge, or other caffeinated beverage every day.

PROGRAMMERS STATISTICS AND COGNITION

Median income for Programmers in 2014 was \$77,550. Many Programmers have various amounts of skill in cognition and reasoning. Programmers love writing computer programs for various purposes. They love identifying complex problems and reviewing related information to develop and evaluate options and implement solutions. They utilize logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

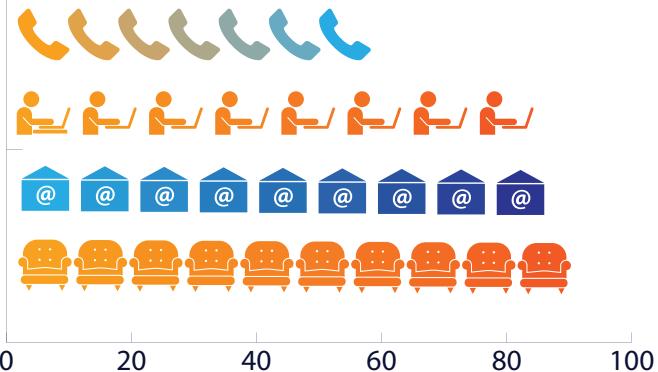


WORK CONTEXT AND ENVIRONMENT

Programmers have a unique work environment. According to onetonline.org, programmers are more likely to work in environments that are indoors and climate controlled. They perform their work at home remotely or they commute to an office space. They also respond to emails more than phone communication the most.



Work Context Breakdown



Telephone — 60% responded “Every day”.



Spend Time Sitting — 86% responded “Continually or almost continually.”



Electronic Mail — 89% responded “Every day.”



Indoors, Environmentally Controlled — 92% responded “Every day.”

SPENDING ANALYSIS

Programmers spending patterns are the same as other target demographics. These are the findings for programmers spending analysis .



PROGRAMMERS COMMON INTEREST/HOBBIES

I looked for some general interest among developers. I found a user on Quora who works with Programmers and he gathered some information on them.

Music

Any sort of musical outlet whether it be playing a musical instrument, mixing your own tracks, listening to your favorite genre on endless loop.

Gaming

WoW, LoL, DoTA, Starcraft 2, Halo, Forza, Battlefield, TF, you name it. Any console, any game, any genre.

Sports

“Believe it or not, programmers are not just a bunch of skinny nerds with Coke-bottle glasses and bad acne. A lot of them like to play sports recreationally and/or keep up with the latest sports news. Basketball, Football, Tennis, Cricket, rock climbing, running, swimming, cycling, you name it.”

Board Games/Card Games/Puzzles

Programmers like to think and analyze. These games provide them an outlet for that. Examples include: Chess, Blokus, Settlers of Catan, Carcassone, Risk, Axis and Allies, Magic: The Gathering, Rubik's Cubing.

I've met programmers with hobbies spanning the whole spectrum, including baking, writing, singing, juggling, or tightrope walking!” Programmers are people and people have a wide range of interests. There are really no set categories that we can throw all programmers into.”

Gaming on PC while not developing games, trying to understand the algorithm complexity of large amount of data, and a way to improve it (google, Facebook...).”





```
function getAttachmentThumbnail($attachment_id) {
    $attachment = getAttachment($attachment_id);
    if ($attachment->getThumbnail() == '') {
        $attachment->setThumbnail('');
        $attachment->update();
    }
    $attachment->getThumbnail();
    $attachment->getThumbnailUrl();
    $attachment->getThumbnailTitle();
    $attachment->getThumbnailCaption();
}
```

SAFETY REGULATIONS

BINAR'S B-LINK SERVICE PROVIDER

B-Link is a subscription service that can be added to your BINAR Enabled multimedia system. No entertainment video to driver's screen. Vehicle must have a rear view backup camera. Vehicle must have communication ability, emergency EMS and tow support services. Here are some safety and additional feature that are provided when you sign up for B-Link services.

BINAR'S B-LINK SAFETY FEATURES

Automatic Collision Notification

When an airbag is deployed in your vehicle, Automatic Collision Notification will alert a Binar's B-Link Customer Care Advisor, 24/7/365. Your advisor will then promptly communicate via the speakers in your car and send the appropriate first responder.

SOS Emergency Assistance

Sometimes an emergency doesn't involve airbags. To alert your B-Link Customer Care Advisor manually, press the red "SOS" button in the overhead console to promptly connect to your advisor from anywhere in the U.S., Alaska, Hawaii, and the District of Columbia.

Enhanced Road side assistance

If you need roadside assistance in a nonemergency situation, a B-LINK Customer Care Advisor can send the appropriate assistance to you, 24/7/365. Press the blue "i" button on your overhead console for assistance, and help can be sent to your exact GPS location.

Stolen Vehicle Recovery

Get extra peace of mind knowing that a B-LINK Customer Care Advisor will work with police to help recover your vehicle if it is ever stolen.
Vehicle Security Alarm Notifications
B-LINK will automatically notify you by text,

automated phone call, or email when your security alarm is activated, so you can contact police for assistance. The camera on the vehicle will come on and send video footage to your device you specify.

Remote Services

B-Link allows you to activate various vehicle features remotely. Using your computer or mobile device, you can access:

- i. Remote Lock/Unlock
- ii. Remote Horn & Lights
- iii. Remote Vehicle Locator
- iv. Remote viewing/cam recording from hidden cameras.

Maintenance Services

When your vehicle requires maintenance, you will be notified via email. This helps ensure that your vehicle receives proper and timely care to keep it in proper running condition.

SUBARU SIMILAR SERVICE

Here is a similar service that Subaru offers to its customers. It is a great service and BINAR wanted to implement the same services to its customers.

	First Year Introductory Offer	Second Year
STARLINK SAFETY PLUS	FREE	\$99
STARLINK SAFETY PLUS & SECURITY PLUS	\$49	\$149

SUBSCRIPTION SERVICES

There are optional subscription services that are provided to the user at his/her request. Satellite radio, music streaming, online gaming, Wi-Fi, etc.

Binar's B-Link Service which customers can purchase to get Wi-Fi and premium remote services in addition to their multimedia system. Customers save up to 30% for the first year by purchasing the annual subscription. Prices are based on Subaru Starlink's package deal.



BINAR'S B-LINK PACKAGES

B-LINK BASIC	B-LINK PLUS	B-LINK PREMIUM
\$255.00 per year (15% off) renews annually \$300.00 after. \$25.00 per month (Free for first year when purchasing a new vehicle)	\$470.40 per year (20% off) renews annually \$588.00 after \$49.00 per month Includes free satellite radio services and much more	\$546.00 per year (30% off) renews annually \$780.00 after \$65.00 per month Includes free satellite radio services, gps services, and more
Automatic Collision Notification SOS Emergency Assistance Enhanced Road side assistance/ Built-in-navigation 6GB of Data Maintenance Service alerts X X Streaming Audio via Bluetooth X X X	Automatic Collision Notification SOS Emergency Assistance Enhanced Road side assistance/Built-in-navigation 12GB of Data Maintenance Service alerts Remote Services Satellite Radio with Sirius XM Streaming Audio via Bluetooth X X X	Automatic Collision Notification SOS Emergency Assistance Enhanced Road side assistance/Built-in-navigation 50GB of Data Maintenance Service alerts Remote Services Satellite Radio with Sirius XM Streaming Audio via Bluetooth B-Link Security notification System Stolen Vehicle Recovery USB Connection ports

COMPETING/CURRENT DESIGN

Here are the two car multimedia system ratings using the Usability principles below.

2016 HYUNDAI ELANTRA

The Hyundai Elantra multimedia system features failed on learnability, safety, memorability, and Utility. When operating the system, it is very hard for the user to understand how to operate basic functions such as the power button and navigating to the music area. There are no playlists features, the design is not very consistent. The user receives no feedback when interacting with the device. Overall, I give the device a C grade.

EFFECTIVENESS	B
EFFICIENCY	A
SAFETY	C
UTILITY	C
LEARNABILITY	D
MEMORABILITY	C



2015 NISSAN SENTRA

The 2015 Nissan Sentra multimedia system is quite nice. When interacting with the system, it was very consistent and easy to learn. The reasons why this device is much better is because it is modeled after smartphone app design. It features GPS, DVD, music playlist, XM radio, and all the features of a system that most consumers are accustomed to. This was much easier to use than the Elantra interface. My overall grade is B+ for this system.



EFFECTIVENESS	A
EFFICIENCY	A
SAFETY	B
UTILITY	A
LEARNABILITY	B
MEMORABILITY	A



USER CONCERNS ABOUT COMPETING/CURRENT DESIGN

So after testing various interfaces, Binar conducted interviews with programmers who met my target demographic and the results are shown in the table below.

Paul Erickson, 59
Job: Programmer



Education:
Bachelor's Degree

Income: \$92,000

Vehicle's owned:
Toyota Tacoma, 2010
Nissan Sentra, 2001

Features wish list:
AM/FM/CD player, USB ports, and good speakers

Interests: Hiking, painting, woodwork, draw, write, read, photography, gardening, cooking

Tayo Oredola, 37
Job: Web Developer



Education:
Master's Degree

Income: \$160,000

Vehicle's owned:
2001 Lexus RX330

Features wish list:
Wi-Fi, satellite radios and voice command to stream music.

Interests: Reading Swimming

Ren Boot, 31
Job: Software Developer



Education:
Bachelor's Degree

Income: \$61,000

Vehicle's owned:
Honda CRV 2013

Features wish list:
Handsfree technology

Interests: Hiking, climbing, reading, playing music, movies, cooking.



INDUSTRY INSIDER'S VIEW OF THE PRODUCT

I spoke with Ryan, the Sales Manager from United Nissan about what consumers in my target demographic want when purchasing a new vehicle. I also discussed some of the likes and dislikes about the current systems being implemented in standard vehicles. Here is what Ryan says about what consumers want.

“Most customers who fit your demographic are looking for certain features when purchasing a vehicle is Blind spot monitoring, light indication systems. The cars must feature blind spot and Rear-cross path detection. Most of these features are installed into the 2016 Nissan Sentra which also includes Radar Sensor in the rear panel. The Nissan Sentra runs a price around \$20,000+.”

“The customers that come here have a price range in mind. They subscribe to the subscription service that has Satellite radio, Bluetooth, offers calls, and Pandora in the car. Many of the used vehicles also feature these services. The Nissan Versa is one of the cars that are purchased as an alternative to the newer cars.”

“Many customers in your demographic want larger touchscreens, hands-free options such as Bluetooth, easy navigation, Collision warning that Ford has to slow down vehicles automatically, and they want adaptive cruise control to be in the car as well. Many people want front and back camera features that measures the distance.”



REFERENCE

Developer Information - http://www.datanami.com/2013/02/14/demographics_shed_light_on_the_programmer_personality/

Age Information - <http://stackoverflow.com/research/developer-survey-2015#profile>

Income Information Reference - <http://www.bls.gov/ooh/computer-and-information-technology/computer-programmers.htm>

Education Reference - <http://stackoverflow.com/research/developer-survey-2015#profile-education>

Problem Solving information - <http://www.onetonline.org/link/summary/15-1131.00>

Work Context - <http://www.onetonline.org/link/summary/15-1131.00>

Programmers Spending Analysis - <http://www.bls.gov/cex/2014/aggregate/occup.pdf>

Programmer Hobbies Quora - a. <https://www.quora.com/What-are-the-most-common-hobbies-for-computer-programmers-other-than-programming?srid=84gR&share=903bdba2>

Nissan Safety Features Reference - <http://www.nissanusa.com/connect/package-specs>

Subaru Safety Features Reference - <http://www.subaru.com/engineering/starlink.html>

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