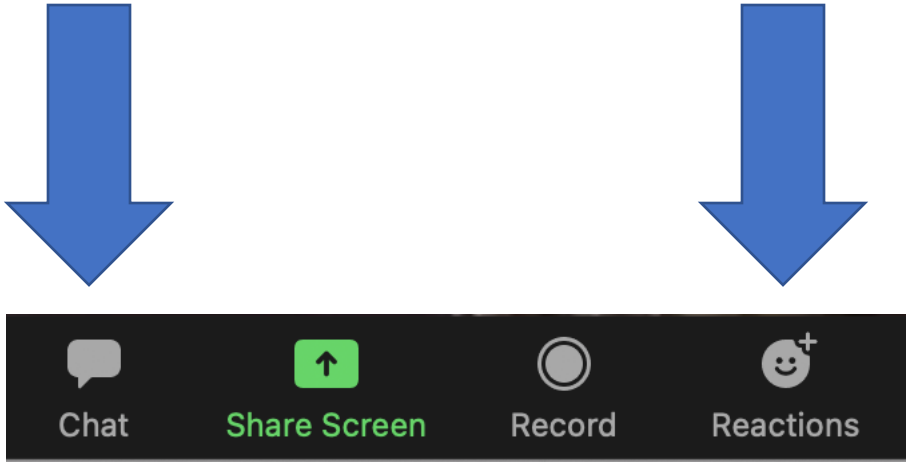
Application Development and Computer Science and how they correlate with Instagram and Windows Operating Systems: Learning about our BAS and BS degrees

Michelle Melero

DISCOVER

SEATTLE COLLEGES
North · Central · South

Questions & Feedback



Also:

This Meeting is Being Recorded

Slides Will Be Available to Download

Introduction

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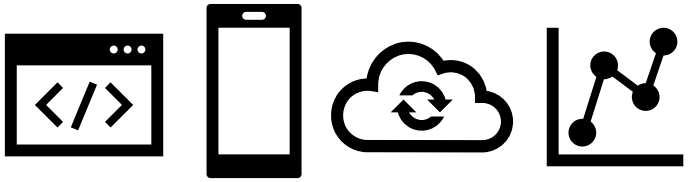
- Review Transcripts
- Decide on Prerequisites
- Answer Questions
- Get you Ready to Apply!

Application Development BAS

Also known as an Applied Baccalaureate Degree

Start with 90+ credits or an associates degree, complete technical pre-requisites (if not included in associates), complete 2 more years with us
to get your Bachelor's Degree

Computer Science Fundamentals



Skills Training in Web, Mobile, Cloud, Data Science

Experience via Project-Based Classes, Client interaction, Internships, and Capstone Projects

NORTH SEATTLE COLLEGE
APPLICATION DEVELOPMENT BAS

Application Development?

Instagram

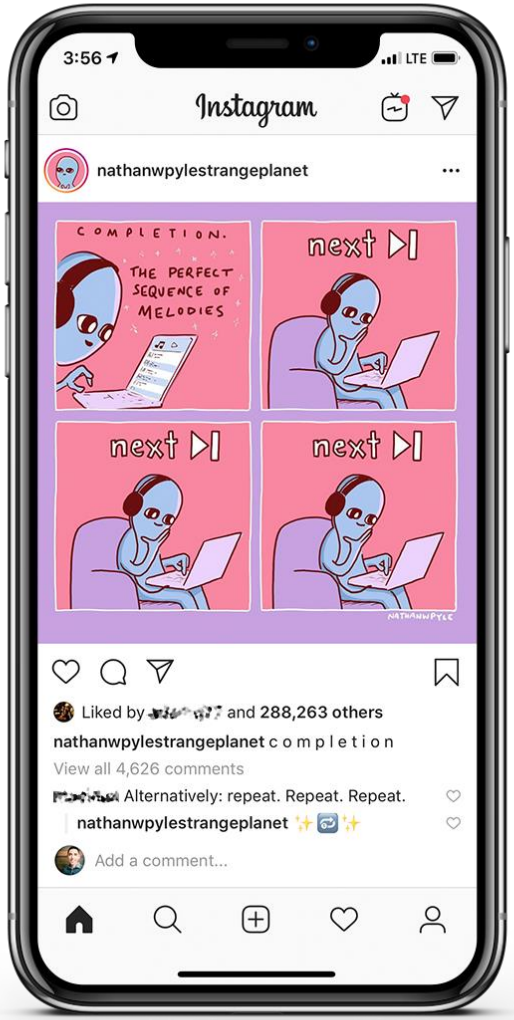
Building Instagram with AD

A. Mobile App
B. Web Service
C. Web App
D. Cloud Computing
E. Data Science
F. All of the Above

Instagram

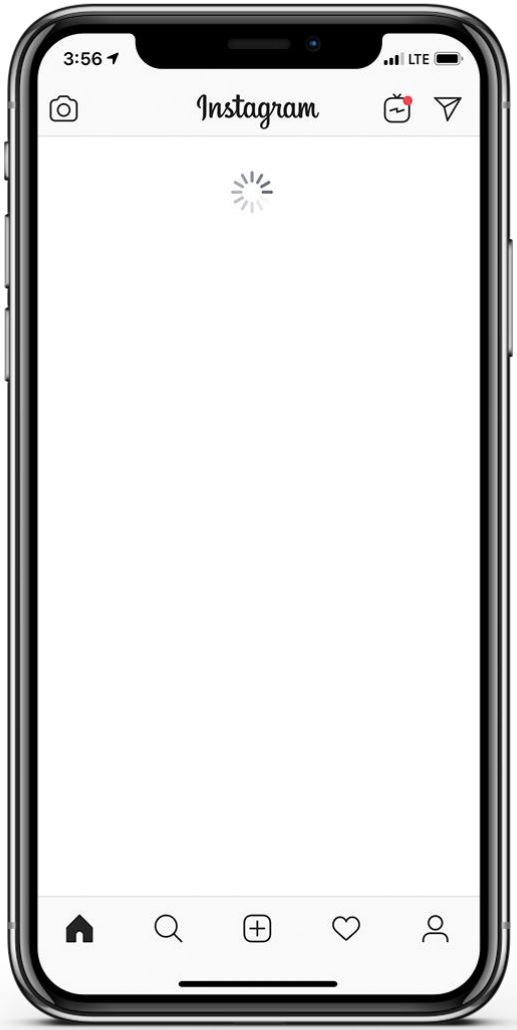
Mobile App?

- iOS or Android application
- Written in using a **software framework** React Native (JavaScript with bits of Swift or Java/Kotlin)



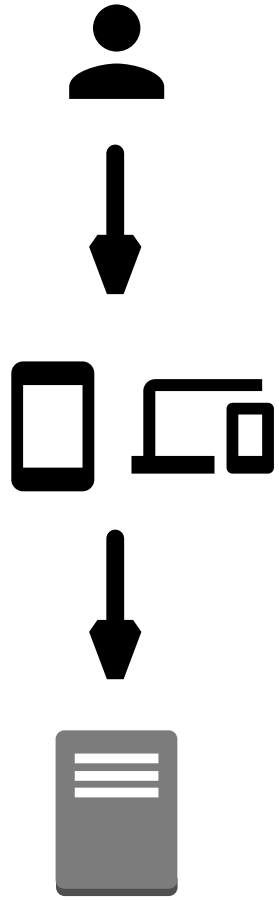
Nope

- How do we put everyone's photos and comments together?
- Use a network and contact a **web service**



Web Services

- Instagram's mobile app needs somewhere to upload your photos, view your follower's contents, search for hashtags, etc.
- These are sometimes called **Application Programming Interfaces** or APIs…
- They allow remote computers (servers) to store and manipulate the data



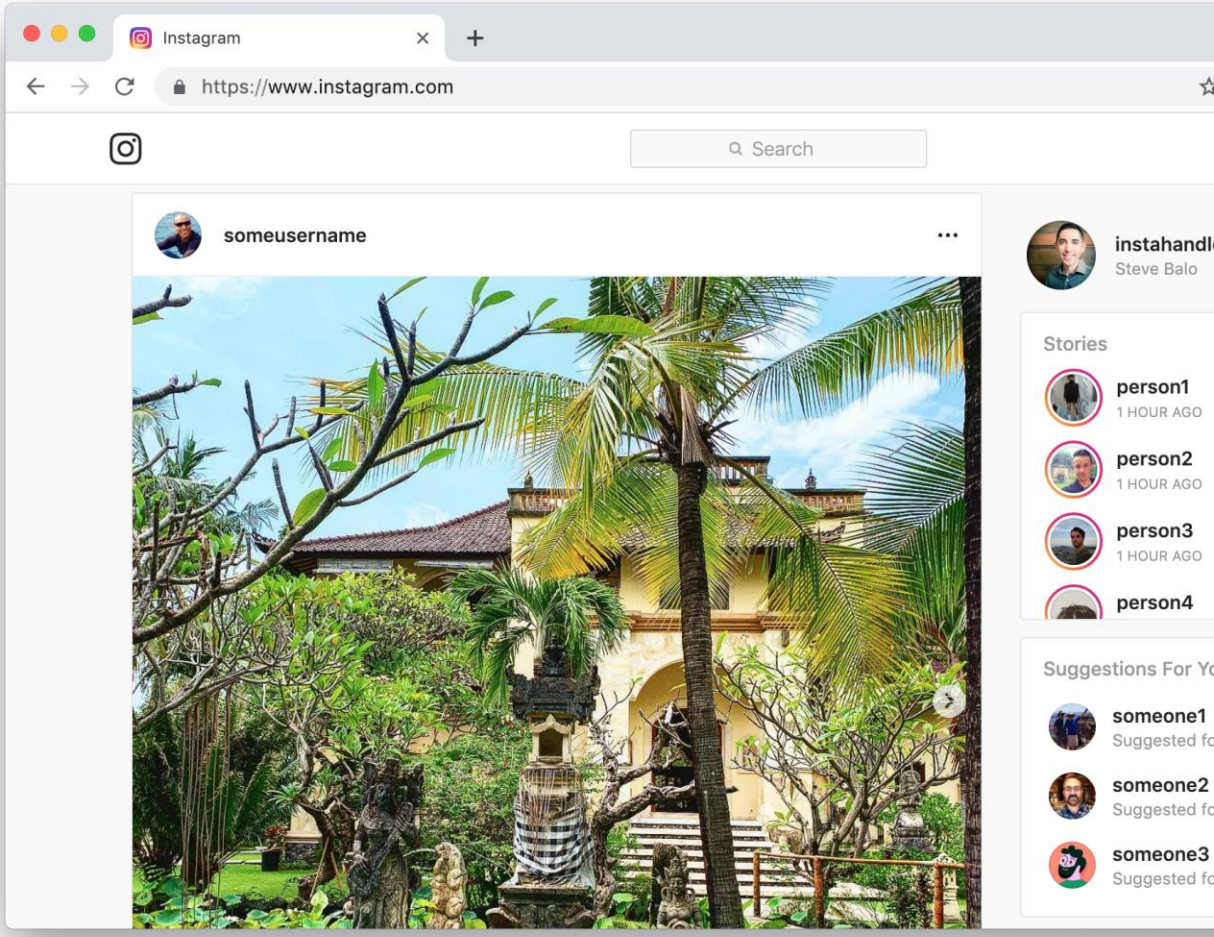
Person using Instagram performs action

Application makes calls to a web service where data is stored and retrieved based on desired user actions

Instagram Web Server

Bonus: Web App

- Instagram also offers a feature-rich web app too.
- Just like the mobile app, it uses the Web Services



Mobile/Web App + Web Services?

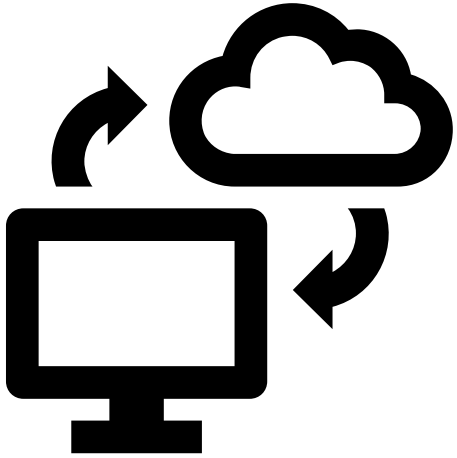
- So the mobile app and web app calls web services on a machine.
- **All done?**

Nope

- Wait… **where** are these web services?
- They need to be on actual machines – and not just one!
- **So does Instagram own (tens of) thousands of special servers?**

Cloud Computing

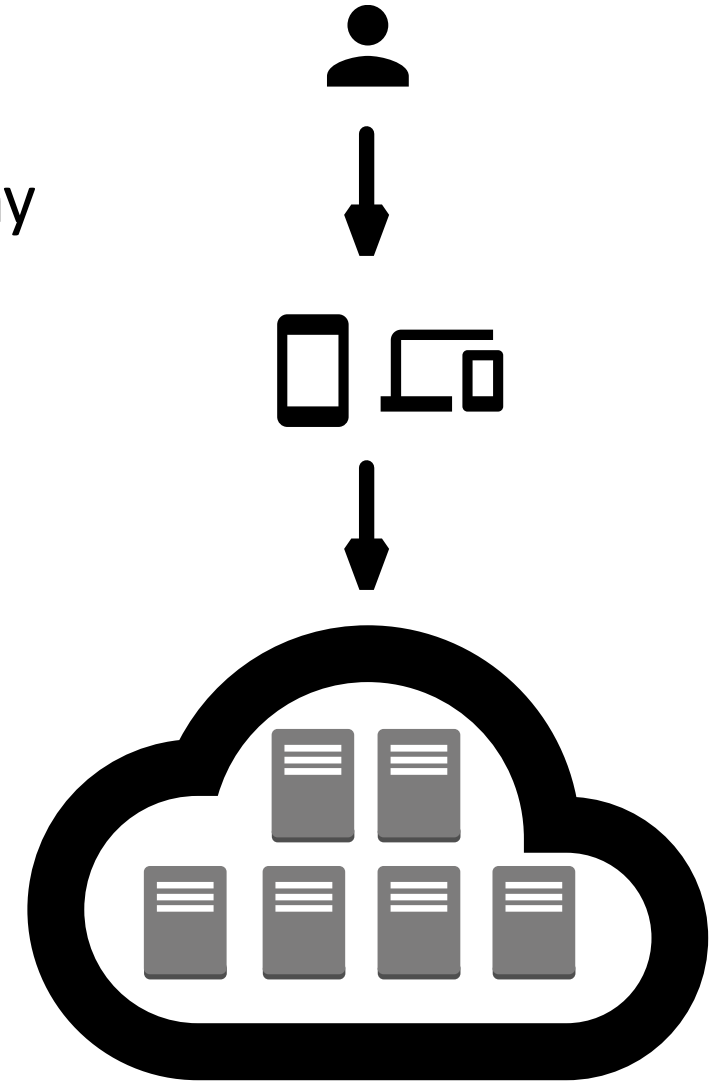
- **The cloud is just computers connected to the internet.**
- Amazon (AWS), Google (GCP), and Microsoft (Azure) are the biggest and rent time on their computers for others
- Instagram used to run on Amazon's cloud, but Meta (Facebook) migrated them to their own sort of cloud



Web + Mobile + Cloud

- So now our web and mobile app call **web services** on many machines, hosted in **cloud** service providers

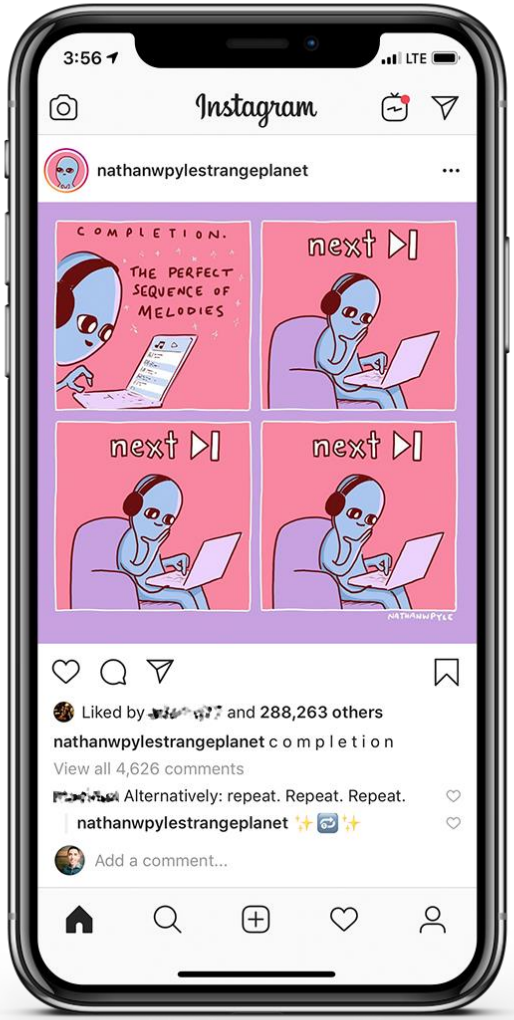
- We're done! *Right?*



Almost Done

What do we need to know to run this service?

- What are people doing with it?
- What do people tap/click on?
- What ads should we show?
- ***What is broken?***



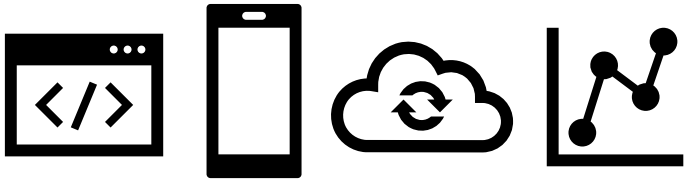
Data Science

- Data science lifecycle: **Capture, Maintain, Process, Analyze,** and **Communicate**
- It really starts with questions
- All of this is so you can make decisions on new features, fixing bugs, optimizing speed, sell ads, etc.

Application Development BAS

The AD BAS Degree Puts this All Together!

Computer Science Fundamentals



Skills Training in Web, Mobile, Cloud, Data Science

Experience via Project-Based Classes, Client Interaction, Internships, and Capstone Projects

Pre-Requisites

North	Central	South	PREREQUISITES – IT Courses	Credits
CSC 110, CSC 142 , IT 211	CSC 110, CSC 142, IT 111, IT 211	CSC 110, CSC 142	Programing - 5 credits of Object-oriented programming strongly recommended	10
IT 125	IT 120, IT 222, IT 223	N/A	Database Development / Programming in SQL.	5
IT 135	IT 231	N/A	Linux	5
IT 161 or IT 102	IT 121, IT 122, IT 221 IT 161, IT 162, IT 163	N/A	Web programming / development	5
			PREREQUISITE – General Education	
Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning (QSR) - Statistics or Pre-Calculus strongly recommended	5
English / Communication Courses	English / Communication Courses	English / Communication Courses	Communication Skills - ENGL& 101	5

Courses

The following is an example of our full-time track:

Fall Quarter Junior Year	Winter Quarter Junior Year	Spring Quarter Junior Year
• AD 300 Component Software (5) • AD 400 Project Management in Software Development (5) • General Education Course (5)	• AD 320 Web Application Development (5) • AD 325 Data Structures and Algorithms (5) • AD 350 Relational Database Technology (5)	• AD 410 Web Application Practicum (5) • AD 340 Mobile Application Development (5) • AD 315 Discrete Mathematics (5)
Fall Quarter Senior Year	**Winter Quarter Senior Year**	**Spring Quarter Senior Year**
• AD 430 Mobile Application Practicum (5) • AD 420 Cloud Computing – Software as a • service (5) General Education Course (5)	• AD 450 Data Science Development • AD 440 Cloud Computing Practicum (5) • General Education Course (5)	• AD 490 Internship or capstone (5) • AD 470 Data Science Practicum (5) • General Education Course (5)

Computer Science BS

Bachelor of Science

Start with 90+ credits or an associates degree, complete technical pre-requisites (if not included in associates), complete 2 more years with us to get your Bachelor's Degree

Computer Science Fundamentals

Theory based with opportunity to build on web and cloud skills

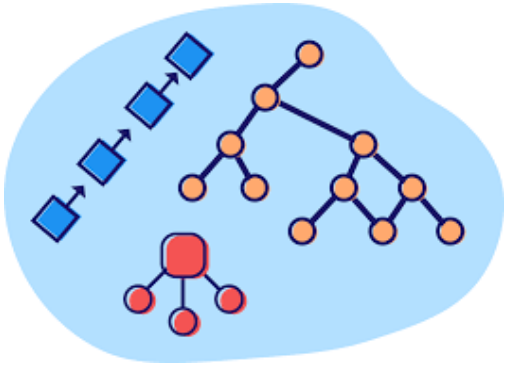
Experience via Longer term projects, Client interaction, Internships, and Capstone Projects

CS and Windows Operating System

A. **Architecture and Networking**
B. **Database**
C. **Software Design and Development**

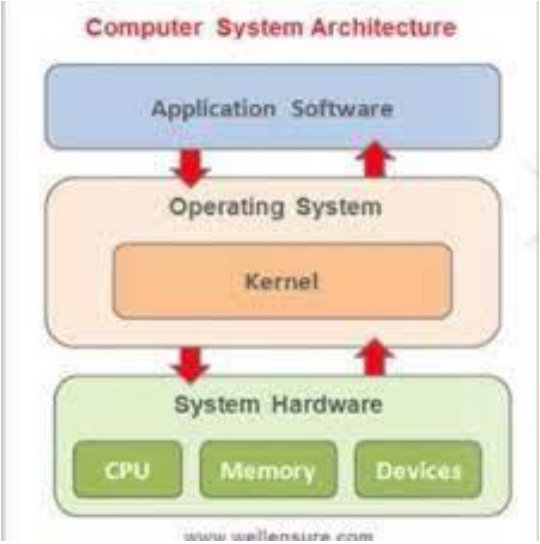
CS Foundational Classes

- Topics in classes, such as data structures and computer architecture lead directly into understanding the functionality of operating systems like Microsoft Windows.



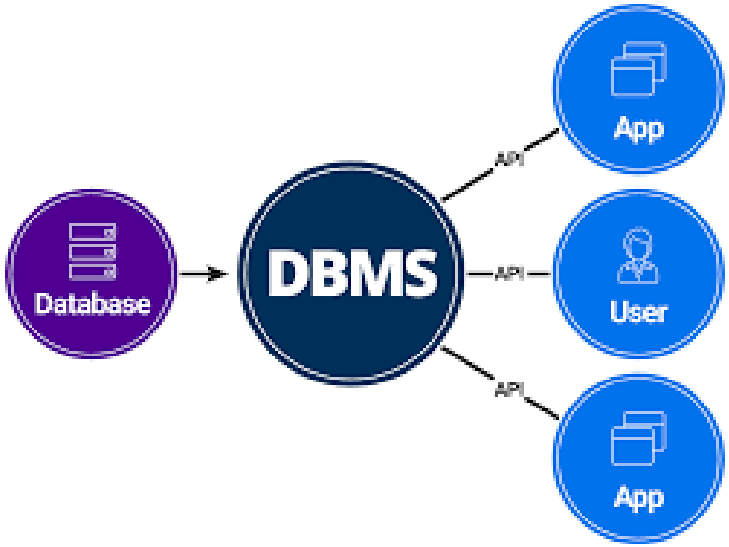
Architecture & Operating Systems

- Learning about how the code for the computer hardware connects with Windows operating system to ensure that operating system manages all the processes happening in an efficient way.



Database

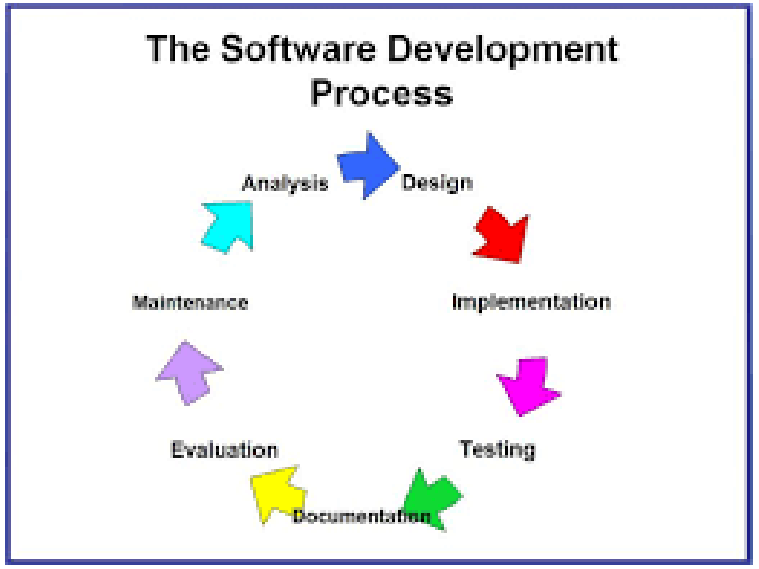
- The Windows OS registry is a hierarchical database. This type of database is explored in the CS class Database Technology.



Software Design & Dev. Series

- Takes your software from being an idea into being secure, production ready software

- The entirety of Windows OS is built on specialized software and is constantly going through maintenance and evolution. This is the type of process you would learn through the software design series



Pre-Requisites

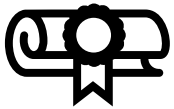
North	Central	South	PREREQUISITES – IT Courses	Credits
CSC 110, CSC 142 , CSC 143	CSC 110, CSC 142 , CSC 143	CSC 110, CSC 142 , CSC 143	Programing	15
			PREREQUISITE – General Education	
Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning (QSR) - Statistics and Pre-Calculus or higher	10
English / Communication Courses	English / Communication Courses	English / Communication Courses	Communication Skills - ENGL& 101	5

Courses

The following is an example of our full-time track:

Fall Quarter Junior Year	Winter Quarter Junior Year	Spring Quarter Junior Year
• CSB 301 Logic and Problem Solving for CS (5) • AD 325 Data Structures and Algorithms (5) • General Education Course (5)	• CSB 305 Fundamentals of Computer Science (5) • CSB 302 Analysis of Algorithms (5) • CSB 330 Computer Architecture & Networking (5)	• CSB 310 Programming Languages (5) • AD 350 Database Technology (5) • CSB 340 Operating Systems (5)
Fall Quarter Senior Year	**Winter Quarter Senior Year**	**Spring Quarter Senior Year**
• AD 400 Project Management (5) • AD 320 Web Application Development (5) General Education Course (5)	• CSB 430 Software Design & Implementation • AD 420 Cloud Computing – Software as a service (5) • General Education Course (5)	• CSB 440 Internship or capstone (5) • CSB 435 Secure Software Development (5) • General Education Course (5)

AD BAS & CS BS



Fully Accredited Bachelor's Degree

Small Class Sizes

Evening Hybrid Courses

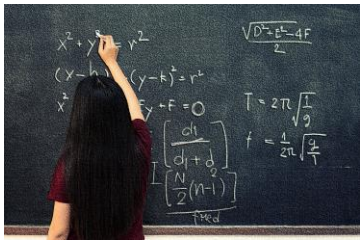
Cohort Model

Lower Cost than Universities, Bootcamps, etc. Great Financial Aid

Industry and Academic Faculty Latest Technologies

Program Resources

MAC Laptops to Check out



Specific Tutor

Cloud based Subscriptions for Class Projects (AWS, Azure)

Career Assistance

Mentorship Opportunities

Tuition

Most cost-effective baccalaureate degree in computer programming and software development

- $**232.26**/Credit in-state tuition
- $**653.27**/Credit international non-resident tuition

Accepts Financial Aid, Worker Retraining, Veteran's aid, scholarships and other WA State grant Aids

Employment

Professional Development Events

Extensive Employment Assistance

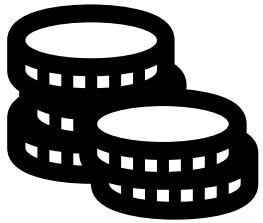
- Software Developer
- Web (Applications) Developer
- Associate Software Developer
- Mobile Application Developer
- Software Analyst
- Software Engineer
- DevOps Engineer
- (Technical) Program Manager
- Site Reliability Engineer
- Software Developer in Test
- Quality Engineer
- Member of Technical Staff
- *… among others*


Ripl
avanade
MoxiWorks™
CLARITY
Agitare technologies
Wireless Advocates
SEAGULL SCIENTIFIC
HealthSlate
Sendfie
2A
pluto
brook
Seattle
nanoString
SAP Concur
Expeditors
slalom
isee
Infosys
CDK Global
digitsec
AVEVA
unloop
APEX Systems
Esterline
IBM
Discovery
T-Mobile
NORDSTROM
REDFIN
Uber
cherwell
PHILIPS
INFINITE OPS
Microsoft
Weyerhaeuser
LYNDEN
semble
pala·linq
FLOOP
Expedia
accenture
wave DISYS
PUGET SOUND ENERGY
PSE
salesforce
COMMUNITY HEALTH PLAN
CITY OF
PREMERA

Pay Rates

Software Developer[1]

- **Intern:** $23-48/hour[2]
- **Entry-Level:** $89-122K/year[3]
- **Average 1-3+:** $122-167K/year
- **Experienced:** $130-186K/year[4]



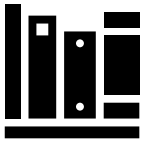
1: *Data is for Seattle Software Developer positions, via GlassDoor*

2: *Outliers on the top side may exceed this range; most internships sit in the $23-48 range per hour. Yearly figures are extrapolated; most internships are 3 months.*

3*: Includes first-year bonuses and stock compensation, as applicable.*

4: Job title would generally change to Software Development Engineer or similar by this point. Management / lead roles would make considerably more.

Applying



Prerequisite Courses

90 Credits including Prerequisite courses

Notable: no full Calculus series and no full Physics series required

Apply

Applications are currently open for fall 2022 and will be open again fall quarter for fall 2023 admissions

Complete the AD Program

Finish your final 2 years / 90 more credits with us

Want to know more about employment?

STEVE BALO (he/him)

Technical Employment Program Manager

Steven.Balo@seattlecolleges.edu

Learn More

Check out our webpages:

Next Information Session:

Q & A

NORTH SEATTLE COLLEGE

APPLICATION DEVELOPMENT BAS