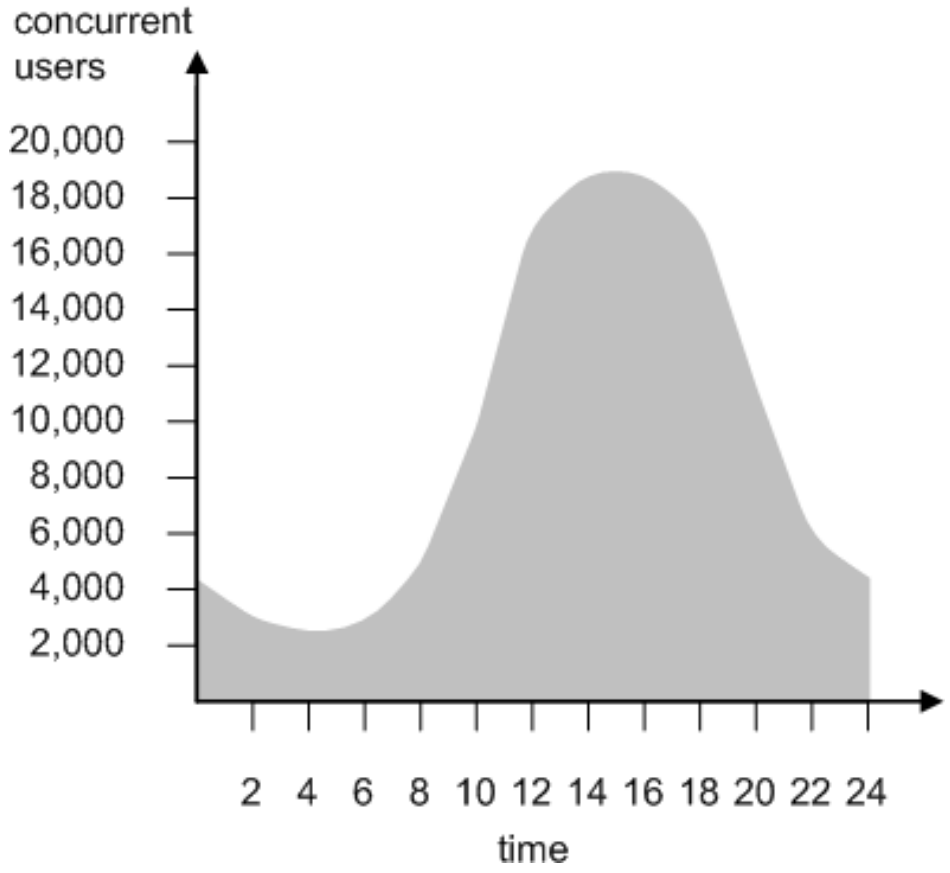
Week 12 – Assignment # 3

Group Work

- You are the IT manager of a start-up company. Your team has recently built a new Web service that requires a hosting environment comprised of multiple servers. Based on predicted usage estimates, your team produces the following chart illustrating the anticipated number of concurrent users over a typical 24-hour period.

Group Work

- You ask your team to perform an up-front and ongoing cost comparison with the following assumptions:
  - the purchase cost of one physical server is $14,000
  - the leasing cost of one virtual server from a cloud provider is $2,000 per month
  - the on-premise physical server and the leased virtual server can each support 8,000 concurrent users
  - to support the maximum number of predicted concurrent users, three servers will be required.



Group Work

- Based on these assumptions and on approximate usage values from the preceding graph, the estimated concurrent usage over an average 24-hour period results in the following values for the number of virtual servers required:
  - 10 hours with one virtual server
  - 4 hours with two virtual servers
  - 10 hours with three virtual servers

- Based on these statistics and assumptions, your team produces the following cost comparison table:

Group Work

	cloud computing solution	on-premise solution
up-front costs (one-time)	$1,200	$62,400
hardware purchase	$0	$42,000
software purchase	$0	$15,000
labor costs	$1,200	$4,400
ongoing costs (monthly)	$8,900	$7,200
hardware usage	$6,000	$0
bandwidth usage	$1,200	$0
hosting costs	$0	$1,800
insurance costs	$0	$600
licensing costs	$700	$1,800
labor costs	$1,000	$3,000

Group Work

- Upon reviewing the compared costs, you realize that your team did not consider the possibility of scaling the virtual servers to accommodate the daily fluctuation in concurrent users.
- You, therefore, decide to adjust the *cloud computing solution* column of the comparison table by taking the following additional factors into account:
  - the number of virtual servers required during different periods of an average day
  - an increase of $1,200 in labor costs to configure the scaling parameters

The question # 1

Complete the following table by adding the adjusted amounts based on the considerations. (Note that, for this exercise, the ongoing licensing and labor costs remain unchanged.)

	cloud computing solution	on-premise solution
up-front costs (one-time)		$62,400
hardware purchase		$42,000
software purchase		$15,000
labor costs		$4,400
ongoing costs (monthly)		$7,200
hardware usage		$0
bandwidth usage		$0
hosting costs		$1,800
insurance costs		$600
licensing costs		$1,800
labor costs		$3,000

The question # 2

- Help your company make the right financial decision by comparing the cost of the hardware in AWS and Azure
  - Estimate the Cost using AWS calculator - https://calculator.aws/#/?nc2=pr
  - Estimate the Cost using Azure calculator - https://azure.microsoft.com/en-ca/pricing/calculator/
  - Do a comparison
- Don’t forget auto-scaling.